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ABSTRACT

We link newly-digitized personnel records of the U.S. government for 1907-1921 to census data to study the segregation of the civil service by race under President Woodrow Wilson. Using a difference-in-differences design around Wilson's inauguration, we find that the introduction of employment segregation increased the black-white earnings gap by 3.4-6.9 percentage points. This increasing gap is driven by a reallocation of existing black civil servants to lower-paid positions, lowering their returns to education. Importantly, the negative effects extend beyond Wilson's presidency. Using census data for 1900-1940, we show that segregation caused a relative decline in the home ownership rate of black civil servants. Moreover, by comparing children of black and white civil servants in adulthood, we provide evidence that descendants of black civil servants who were exposed to Wilson's presidency exhibit lower levels of education, earnings, and social mobility. Our combined results thus document significant short and long-run costs borne by minorities during a unique episode of state-sanctioned discrimination.

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1 Introduction

Outcome gaps between black and white Americans in health, wealth, and employment have been a persistent feature of the United States since the nation's founding. Understanding the roots of racial inequality is crucial to choosing the appropriate policy remedies. The U.S. has implemented an array of policies to respond to persistent political, social, and economic disparities along racial and ethnic lines. These range from policies that promote racial integration (Guryan, 2004) to the strengthening of anti-discrimination laws preventing disparities in access to healthcare (Chay et al., 2014), housing (Massey, 2015) and employment (Donohue and Heckman, 1991; Collins, 2003; Chay, 1998).

The idea that past discrimination can have persistent, deleterious effects on minorities lies behind even more ambitious policies. Majority-minority districts, for example, ensure that minority groups are adequately represented within local, state, and federal legislatures (Washington, 2012). Affirmative action programs provide set-asides for underrepresented groups within schools, employment, and other public institutions (Holzer and Neumark, 2012; Miller, 2017; Bleemer, 2020). The case for such ameliorative policies, however, hinges on the degree to which past episodes of discrimination persist. If past discriminatory policies do not translate into contemporaneous outcome gaps, group-based entitlements may even introduce additional distortions in the accumulation or allocation of talent (Welch, 1981; Fryer and Loury, 2005; Durlauf, 2008). While a larger literature has documented the impacts of race-conscious policies (Johnson, 2011; Miller, 2017), micro-level evidence on how persistent these past episodes of discrimination are in the first place remains scarce.

In this paper, we assess the economic cost to black Americans in terms of earnings, wealth, and intergenerational mobility of one of the modern era's most far-reaching episodes of discriminatory government policy – the segregation of the U.S. government under Woodrow Wilson's administration. In 1913, Wilson sanctioned a policy to segregate black and white civil servants across the federal bureaucracy. Introduced with the declared intent of improving bureaucratic efficiency by removing "frictions" between black and white civil servants (Lunardini, 1979; Cell, 1982), segregation had devastating effects on black civil servants' employment status. Qualitative accounts suggest that segregation was carried out through demotions and firings – creating *de facto* ceilings on black workers' mobility within the government (King, 1995), and reducing their earnings. Given these potentially damaging effects on black civil servants' livelihoods, this episode of discrimination likely echoed across other domains of life, and even across generations. Yet, there remains no quantitative assessment of how costly the American government's discriminatory segregation regime was for black civil servants.

Underpinning our study is a large-scale data digitization effort covering the careers of over 1.3 million U.S.

federal employees. We digitize each volume of the Official Register of the United States series (the "Official Register," or "Registers"), also known as the Biennial Register of All Officers and Agents, between the years 1907-1921. Issued every two years during the time period we study, the Registers are a government publication series that provide a detailed list of every person who worked for the federal government, including their department, bureau, job title (i.e., occupation), and salary. The Registers thus provide high-quality personnel data for a historical period where high-frequency earnings data is rarely available.[1] Our study is the first to leverage this unique data source for the study of the early 20th century bureaucracy and labor market in the U.S.

A major challenge for the study of racial differences in the U.S. federal civil service during the early 20th century is the absence of information on a person's race in the personnel records we digitize. To overcome this barrier, we link our newly-digitized administrative personnel records to the complete count Decennial Censuses. To quantify the effect of federal segregation, we then employ a matched difference-in-differences design. We use coarsened exact matching to identify for each black civil servant a white counterpart who – at the onset of Wilson's presidency – was (i) of the same sex and comparable age, (ii) worked in the same Cabinet department and bureau, and (iii) earned a comparable salary for a similar employment contract. We then compare these matched black and white civil servants around Wilson's inauguration, assessing how the black-white earnings gap among comparable civil servants evolved before and after Wilson's 1913 mandate to segregate.

Our main finding is that President Wilson's segregation policy had persistently negative consequences for black civil servants. For civil servants who worked in the same department, were of comparable age, and earned a comparable salary *before* the segregation order, black civil servants earned approximately 3.4-6.9 percentage points (p.p.) less over the duration of Wilson's term. This penalty holds with individual fixed effects, suggesting that the negative effect is driven in part by differences in career progression. Consistent with our findings being caused by the presidential policy rather than latent discriminatory attitudes throughout the federal government, the negative effect is largest for the Department of the Navy, the Post Office, and the Treasury Department – departments known for having implemented the segregation order earliest and most aggressively at the behest of President Wilson (King, 1996). By contrast, the penalty faced by black civil servants was more muted within the Agriculture and Labor Departments, which were known for initially resisting the segregation order.

An empirical challenge during the "Jim Crow" period is the presence of strong race-specific career dynamics (Wright, 1986). If a "glass ceiling" for black civil servants was already in place within the federal government before Wilson, a black-white gap in career progression could appear over time even in the absence of the

[1] Much work focused on this period rely on coarse, imputed salaries based on the occupational titles from the decadal census.

segregation measure. We employ several strategies to address this concern. First, our preferred specification throughout the paper allows for flexible race-specific differences in the earnings profile. Second, we conduct a placebo test using a transition predating the implementation of segregation (McKinley-Roosevelt) and find no comparable widening of the black-white earnings gap. Finally, when assessing whether our estimated effects reflect economy-wide trends in disparate outcomes, we do not find a similar increase in racial earnings inequality when tracking comparable black and white private sector workers using census data. The results thus collectively suggest that the effects we uncover are specific to the Wilson administration and concentrated in the federal government – consistent with capturing the effects of the federal employment segregation policy.

In terms of channels, we find that Wilson's policy adversely affected black civil servants at both the intensive and extensive margins. One of the main ways through which segregation reduced the earnings of black civil servants was by shutting down opportunities for economic advancement within the bureaucracy. Consistent with the re-allocation of black civil servants to lower-salaried positions, the inclusion of job title fixed effects accounts for almost the entire increase in the earnings gap. This re-allocation to lower-paid positions cannot be explained away by differences in the years of schooling. Instead, we document a relative decrease in the returns to education and experience for black civil servants (vis-à-vis white civil servants) during Wilson's term, in line with an increased misallocation of talent. Finally, we show that black entrants to the civil service entered at lower salary levels after Wilson took office; we observe increased exit among higher-earning black civil servants under Wilson, suggesting that the segregation regime had effects on the extensive margin, as well.

The large divergence in earnings between observationally comparable black and white civil servants during Wilson's term raises the question of whether the effects extended beyond Wilson's presidency. If such long-term effects exist, the short-run estimates focusing on the direct earnings effect alone would underestimate the overall costs of segregation. To study how earnings losses affect long-term wealth accumulation, we link civil servants to each census from 1900 to 1940 in order to study the racial gap in home ownership around Wilson's term. Home ownership was and remains a primary method of wealth accumulation in the U.S. (Collins and Margo, 2011). Consistent with the negative effects on relative earnings, black civil servants are 14 p.p. less likely than their white counterparts to own a home after Wilson imposes federal segregation. This gap remains persistently large for segregation-affected black civil servants even decades after Wilson left office. Importantly, the racial home ownership gap only increases for federal civil servants but remains constant for comparable workers in the private sector – suggesting that federal segregation was the cause of this relative loss of wealth, rather than nationwide trends in racial home ownership disparities.

Finally, we investigate whether the segregation policy affected economic outcomes for the descendants of the affected civil servants. By the time Wilson assumed office, some children of civil servants were still of schooling age, while others already had completed their education. Exploiting variation in the age of the children at the onset of the segregation policy in 1913, we use census data to compare the 1940 outcomes of children of black and white civil servants who were young (and thus co-habiting with their civil service parents exposed to the segregation order) vs. old (and thus no longer co-habiting). To ensure that the results are not driven by secular trends, we benchmark this difference-in-differences against the same gap observed for private sector workers' children, who were not directly affected by the federal segregation policy. While racial outcome gaps had been converging between old vs. young children of private sector workers, the same outcome gap stagnated and – if anything – increased for children of federal civil servants. Twenty years after Wilson left office, black young children of civil servants report lower levels of education, lower earnings, and a decline in the overall income distribution rank of 9 percentiles. These results thus provide evidence that the effects of Wilson's segregation policy affected intergenerational mobility by adversely impacting human capital accumulation.

Our study contributes to research at the intersection of three strands of literature. First, we contribute to the literature on racial inequality in the labor market. The causes of these gaps have been examined for decades (Brown, 1984; Smith and Welch, 1989; Bayer and Charles, 2018), finding support for differences in education (O'Neill, 1990), pre-market skills (Neal and Johnson, 1996), and prejudice (Bertrand and Mullainathan, 2004). Recent studies of long-run trends in black-white inequality focus on forces shaping black economic status from mid-century to the present, spanning the Second Great Migration (Boustan, 2009; Hornbeck and Naidu, 2014; Derenoncourt, 2019), school desegregation efforts (Card and Krueger, 1992; Johnson, 2011), changes to labor market institutions (Farber et al., 2018; Bailey et al., 2020b; Derenoncourt and Montialoux, 2020), and anti-discrimination efforts (Smith and Welch, 1989; Donohue and Heckman, 1991; Collins, 2003; Cascio and Washington, 2013; Aneja and Avenancio-Leon, 2020).

We instead provide novel micro-level evidence – on a nationwide scale – of what led gaps to emerge during the earlier Progressive Era and the interwar period. Several studies document the importance of human capital differences to racial earnings inequality (Smith, 1984; Carruthers and Wanamaker, 2017), observing that black and white workers received equal pay within-occupation (Higgs, 1977; Fishback, 1989). Other research documents evidence of discrimination through either pay differences or segmentation of the labor market (Whatley and Wright, 1994; Sundstrom, 1994; Margo, 1990), suggesting to varying degrees that black Americans' worse outcomes cannot be fully explained by racial differences in the quantity and quality of schooling.[2] Our findings

[2]These studies largely do, however, acknowledge that human capital differences were likely a factor.

are consistent with the latter view, pointing to discrimination as a potential driver of racial economic disparities (Sundstrom, 2007). We build on the existing literature by providing quantitative evidence on the impact of federal government policy. By documenting how the disparate treatment of black personnel led to unequal work assignments and worse pay, we show that government policy was a causal determinant of racial inequality. By extension, we also contribute to empirical work that suggests important dynamics between racial oppression, segregation, and economic outcomes (Collins and Margo, 2004; Cook et al., 2018).

The harmful impact of Wilson importing "Jim Crow" norms of racial hierarchy into the federal government is consistent with the literature documenting the harmful effects of segregation (Collins and Wanamaker, 2017; Dewey, 1952).[3] Our findings thus also inform the labor economics literature on the causes and consequences of employment segregation, an important driver of earnings inequality (Higgs, 1989; Sundstrom, 1994; Johnson, 1943).[4] While much of this literature focuses on segregation in private firms, we isolate the causal effect of segregation within the largest public sector organization in the U.S. – the federal bureaucracy.

Second, by examining how effects of workplace discrimination ripple throughout the life cycle, and even shape racial disparities across the next generation, we also advance the related literature on the persistence of other dimensions of racial inequality in the U.S. (Bloome, 2014; Lundberg and Startz, 1998). Of particular policy relevance is the evolution of racial differences in wealth (Higgs, 1982; Margo, 1984; Darity, 1998; Derenoncourt et al., 2021). By documenting how federal segregation affected home ownership, we provide new evidence on how a specific discriminatory episode reduced black wealth accumulation using the most comprehensive long-term data available.[5] While other studies have documented how economic shocks echo across generations (Nakamura et al., 2020; Bleakley and Ferrie, 2016; Feigenbaum, 2015; Oreopoulos et al., 2008), it is the specific nature of the shock – a state-sanctioned policy of employment segregation – that, in our view, makes this contribution unique. We document how a past episode of government discrimination can have persistent negative effects on income and wealth accumulation, as well as the outcomes of the next generation.

Finally, we add a new dimension to the growing literature in political economy on the role and the organization of the state. This literature has documented the role of politicians in controlling civil servants through appointments and transfers (Iyer and Mani, 2012; Xu, 2018; Akthari et al., 2019; Colonnelli et al., 2020; Moreira and

[3] Jim Crow institutions imposed concentrated economic disadvantages for black Americans across various domains – including residential segregation (Gil and Marion, 2018), bans on labor mobility (Roback, 1986), and political disenfranchisement (Naidu, 2012). Informal norms about racial inferiority fostered by segregation and political disenfranchisement also contributed to occupational segregation (Dewey, 1952; Woodward, 1955; Sundstrom, 1994).

[4] While racial segregation persists today (Hellerstein and Neumark, 2008), it is far below levels observed a century ago, when separation of workers by race was a near-universal fact of life (Wright, 1986). Explanations offered for occupational differences by race include union exclusion (Sugrue, 2004), unequal education (Higgs, 1977), and employer/consumer prejudice (Johnson, 1943; Sundstrom, 1994)

[5] See, e.g., Collins and Margo (2011) for a discussion of how census-measured home ownership is perhaps the best data to understand long-run racial differences and trends in wealth accumulation.

Perez, 2020). While there is a large literature that studies the role of political alignment or social ties between politicians and bureaucrats in shaping career progression, there is little work that studies the effect of discriminatory policies within public organizations. We make progress on this score by documenting the active role of a major public organization – the U.S. government – in implementing policies that discriminate among its personnel. As such, we contribute to research on how state action can – in contrast to the Civil Rights era – *exacerbate*, rather than ameliorate, racial and ethnic inequality (Naidu, 2012; Huber et al., 2020). Understanding public sector discrimination is important, given that public employment has long been a source of economic mobility for marginalized groups, such as women and racial minorities (Krislov, 1967; Katz et al., 2005). This was the case for black Americans in the early 20th century, who on average earned a substantial premium in the public sector (Appendix Figure AI). Government employment placed workers in the top quartile of the black earnings distribution, and on a footing that was not-so-distant from the average white American.

2 Context: The U.S. Federal Government

The U.S. federal civil service is the civilian workforce (i.e., non-elected and non-military public sector employees) comprising primarily the executive branch departments and agencies. We now briefly describe the historical context and the implementation of the segregation policy. Appendix A provides additional details.

2.1 Woodrow Wilson and the Onset of Federal Segregation

At the turn of the 19th century, black Americans had made substantial gains within the federal government in the decades following the Civil War. While these gains were likely tied in part to their political support for the Republican Party, this occupational shift also likely reflected increased access to merit-based jobs in the post-bellum period (Keane, 2013). Patler (2004) notes that following civil service reform in the later part of the 19th century, "[black Americans] regularly scored as well as whites on civil service examinations and in some cases made the highest scores in the country." As such, the government employed black men and women at all levels of the federal bureaucracy, including high-ranking, white-collar positions (Yellin, 2013).

Opportunities for black hiring and advancement in government dried up, though, with the election of Woodrow Wilson as President. During his first year in office, Wilson began encouraging a policy of segregation within the bureaucracy. Historical sources suggest that segregation came swiftly and suddenly, taking black Americans by surprise. During Wilson's presidential campaign of 1912, for example, black voters had abandoned their Republican allegiances in part due to his campaign promise of equal treatment: "should I become President

of the United States, [black voters] may count on me for absolute fair dealing and for everything by which I could assist in advancing the interests of their race in the United States" (Weiss, 1969). Leaders within the black community, such as Booker T. Washington, in turn declared their support for Wilson. Washington expressed his faith that Wilson would provide "improvement and advancement of my people."[6] While Wilson's policy of racial separation was premised on bureaucratic efficiency, anecdotal accounts suggest it was motivated by the racial animus of Wilson and his supporters and advisors – many of whom hailed from the "Jim Crow" South (Lunardini, 1979). Indeed, Wilson's policy of segregation came against the backdrop of escalating racial segregation and oppressive laws nationwide. Jim Crow laws mandating the separation of the races in practically every aspect of public life were systematically instituted – particularly in the South – beginning in the 1890s.

The implementation of racial segregation was delegated to the departments, where Wilson appointed many segregationist southern Democrats. Racial segregation was first imposed in the Post Office Department, where Wilson's choice for Postmaster General was the conservative Democratic Congressman, Albert S. Burleson, of Texas.[7] The next department to segregate was the Treasury – which employed more black civil servants than any other federal department apart from the Post Office. Like Burleson, Secretary William Gibbs McAdoo was a southern segregationist. To McAdoo, segregation by race was no different from any other organizational hierarchy, comparing the racial segregation of Treasury facilities to "the provision of separate toilets for the higher officials of the department."[8] Other departments soon followed suit, segregating in rapid succession.

2.2 What Segregation Entailed and its Potential Effects

Federal government administrators pursued segregation with President Wilson's endorsement. While introduced with the declared intent of improving bureaucratic efficiency by removing "frictions" between black and white civil servants (Lunardini, 1979; Cell, 1982), segregation gave rise to a general increase in workplace discrimination. To accomplish the adminiration's goal, administrators relied largely on demotions to place black employees in different workspaces. As Yellin (2013) explains, "black clerks ... were not simply fired or separated out: they suffered the pain of reduced status and income in a system that no longer valued their work. Discrimination in the federal government after 1912 involved the erection of a ceiling above black employees that capped their economic and social mobility."

[6] Similarly, the NAACP delivered the support of over 100,000 black votes to the Democratic ticket because of Wilson's "willingness to deal fairly with the Negroes." (Scheiber and Scheiber, 1969).

[7] Burleson was all too eager to segregate employees within his department, having previously complained to Wilson about white civil servants being forced to work alongside minorities: "it is very unpleasant for them to work in a car with negroes where it is almost impossible to have different drinking vessels and different towels, or places to wash" (Weiss, 1969).

[8] Under McAdoo's command, the Treasury's Assistant Secretary wrote to a senior clerk, "I think it would be best for this Department if you should make arrangements by which white and colored employees of this Department shall use different toilet rooms."

In short, the effect of Wilson's policy vis-à-vis the federal bureaucracy was to prevent the economic advancement of black civil servants. Historical accounts suggest that by the end of Wilson's first term, black government civil servants faced demotion or lack of promotion at the departments of State, Navy, and many others. Wilson's regime of federal government segregation prevented qualified black applicants from entering the federal civil service at levels that they were able to in the early 1900s. While there was no *de jure* change in the government's merit-based hiring policies, the federal government adopted measures to prevent the hiring of new black civil servants. For example, in 1914, it began requiring that photographs be attached to all job applications, making it easier to discriminate against black candidates. In some cases, black civil servants were terminated outright (MacLaury, 2014). Given historical evidence that Wilson's segregation policy affected black civil servants at both the intensive and extensive margins, it is reasonable to hypothesize that their earnings would suffer.

3 Data and Descriptive Statistics

3.1 Data Source: U.S. Official Registers

Our main goal is to identify the impact of Wilson's segregation order on black civil servants' earnings, and how they evolve relative to white civil servants' earnings. To that end, we undertook a large-scale data digitization effort to construct an individual-level personnel dataset of the entire U.S. federal government around Wilson's inauguration. The main data sources for our study are the Official Registers of the United States. The Official Registers were initially compiled by the Department of the Interior, and later by the Census Bureau, to provide a complete enumeration of the federal government workforce.[9] Issued biennially, the Official Registers listed every employee of the U.S. government. The cut-off date for inclusion in a given year's volume is July 1. Overall, we digitized personnel records between 1907-1921, corresponding to 7,097 total pages.

The Official Registers provide a few unique advantages over data used in previous analyses of racial inequality during the pre-1940 period. First, we observe the salary of each civil servant, so do not need to use coarser measures of earnings that are imputed from occupational data, which typically rely on Decennial Census data.[10] This is an important advantage, given the potential for racial discrimination within occupations (Margo, 1990). Second, the Register data are available at a greater frequency. Issued biennially, the data allow us to trace out

[9] Temporary employees who have served for less than six months are not included. In 1923, the Official Register was not published due to federal pressure to reduce costs. The Register resumed in an annual form in 1925, but in a much more reduced form, owing to the growing size and cost of describing the entire federal government.

[10] Since the U.S. Census did not record a person's income before 1940, analyses of economic status typically rely on imputed incomes based on the linkage of a person's occupation to the future censuses (when income was recorded) (Sacerdote, 2005; Collins and Wanamaker, 2017).

the dynamics of segregation and more carefully consider time-varying confounders (e.g., World War I, Great Migration). Finally, the data we construct spans a large subset of federal government employees. As such, they provide an unprecedented opportunity to examine disparities throughout the federal government.

Appendix Figure AII shows a sample of the Register records of 1913. As the sample page shows, the Registers contain rich data on the civil servants' background and their career progression within the civil service. For each civil servant, the Register includes information on a federal employee's full name, state of birth, the congressional district from which he or she is appointed, and salary. Also included is a civil servant's assigned department, the bureau within that department, his or her job title as well as location of work.

Despite the rich data and coverage, the Official Registers also have limitations. First, the data format changes over time, making it hard to harmonize over longer time periods. Before 1907, individuals are enumerated in separate tables by departments. After 1921, the Registers are published annually in an abridged format that only includes supervisory positions. During 1907-1921, the time period for which we digitized the entire records, individuals are listed in a fixed format in alphabetical order. Second, the Register data does not contain the complete records of the Post Office Department due to page restrictions. Our data only captures the Post Office Department headquarters in D.C., omitting postmasters and lower tier postal workers.[11] Finally, the Register data does not include information on a person's race, requiring us to link the data to the census.

3.2 Measuring black civil servants

A limitation of the Register data is that it does not explicitly include information on a person's race. To overcome this issue, we link our sample of civil servants to the 1910 complete count Decennial Census. We use the *full* name, birth state, and current state of residence to match civil servants to the census.

There is a trade-off between match rate and accuracy. Given the relatively coarse set of characteristics (e.g., the absence of age) to link individuals from the Registers to the census, there is a risk of overmatching, particularly for common names in larger states. Given the large number of individuals, we also cannot rely on manual linking approaches. In our automated approach, we thus follow a conservative method by only linking individuals from the Registers who are uniquely identified in the census. We proceed in several steps.

We first match *exactly* based on first name (including middle name), last name, birth state, and current state of residence. We then relax the match criterion by matching only *exactly* on the first name (excluding middle

[11] The Postal Office was and remains the largest department, making up 60% of the federal employment and 22% of all black employment (1910 census). Given that postal employment has long been a unique occupational "niche" for black Americans (Boustan and Margo, 2009), this is an unfortunate limitation of the Registers.

name), last name, birth state, and current state of residence. Finally, for the remaining unmatched individuals, we further relax the matching criterion by matching based on name and birth state only. Again, we do so by first matching based on the full name, and then relaxing the name restriction by only using the first name (excluding middle name). We can match 30% of the civil servants working in 1911, the cohorts we will track over time. For the full sample of individuals serving 1907-1921, we obtain a match rate of 26%.[12] This match rate is in line with the literature using automated matching (Abramitzky et al., 2019, 2020; Sarada et al., 2019).[13]

Table I, Columns 1 and 2 compare the characteristics between the full Register sample and the subset who could be linked to the census.[14] In the full Register population, we have 134,731 individuals serving in 1911 and a total of 1,364,056 entries for the period 1907-1921. On average, census-linked individuals are higher earning, more likely to hold full-time contracts, and less likely to hold contracts remunerated per month or day. Among the census-linked civil servants, the share of black civil servants – as defined by the census[15] – is 7.3%.

3.3 Descriptive Statistics and Matching

For our period of analysis, 1907-1921, our census-linked dataset covers a total of 39,914 civil servants in 1911 and a total of 353,925 person-years for the full sample 1907-1921. In Table I, columns 2-3, we provide raw summary statistics for our census-linked sample of civil servants.

Column 3 tells us how black civil servants compared to white civil servants.[16] Black civil servants are more likely to be female, earn significantly less, and tend to be younger (i.e., they are likely of lower seniority). They are also less likely to hold monthly contracts, and are more likely to hold daily contracts. In the context of our data, this means that they are more likely to be employed as part-time employees.

It is readily apparent that black civil servants held very different positions – arguably worse jobs – than their white counterparts.[17] On average, black civil servants earned 44% less than their white colleagues.[18] This difference can be seen in Figure I which reports the earnings distribution in 1911 for black and white civil

[12] The match rate is relatively stable both across years and entry cohorts (defined as the first year a civil servant is observed in the Official Registers between 1907-1921, see Appendix Figure AIII).

[13] Bleakley and Ferrie (2016) match the winners of the Georgia land lottery to the census rounds 1850-1880, achieving a match rate of 12.4%. Eli et al. (2018) match military records to the 1860 and 1880 census, obtaining a match rate of 30%. Abramitzky et al. (2012) match the Norwegian census to the U.S. census, obtaining a match rate of 30%. Ager et al. (2019) link household heads from 1860 to the 1870 census, and to sons in the 1900 census with a match rate of 20%.

[14] Appendix Table AI also compares the characteristics of the census-linked civil servants to the overall U.S. census population in 1910.

[15] We use the IPUMS definition based on the variable `race=200` and `race=210` which includes "mulattos."

[16] To sharpen the analysis, we restrict the sample to only black and white civil servants. Black and white civil servants combined make up 98% of the federal civil service in the 1910 census.

[17] This observation is not surprising, given that black Americans were only a generation removed from the Civil War, and still trailed white Americans in access to schooling and other key dimensions of human capital (Collins and Wanamaker, 2017).

[18] We convert all salaries into annual salaries. We assume an 8-hour workday, 5 days per week, and 12 months per year.

servants. As the figure shows, black earnings are lower across the entire distribution and there is a lack of overlap in the earnings for a large number of black and white individuals. To estimate the impact of segregation, we must hence first identify a suitable control group of white civil servants within our sample who hold similar jobs at baseline. We do this by finding counterfactual white civil servants who are (i) of the same sex and – before the Wilson administration – (ii) worked in the same department and bureau, (iii) are of comparable age, and (iv) hold the same type of payment contract with a comparable compensation level. We implement the matching using the coarsened exact matching (CEM) method proposed by Iacus et al. (2012). This approach is standard and allows us to construct counterfactuals that are comparable in terms of the *joint distribution* of observable baseline characteristics.[19] We thus match civil servants in 1911 based on salary, age, department, bureau, and contract type (i.e., full-time vs. part-time). To ensure we find sufficient matches, we match coarsely on the continuous measures of salary and age, dividing salaries into 40 bins and age into 5 bins.[20]

Table I, columns 4-5 report the result of the matching procedure. Out of the 2,932 black civil servants working in 1911, we were able to find suitable counterparts for 2,545 individuals. A much larger share of white civil servants is now excluded from the matched sample. Given the lack of overlap in the upper tail of the earnings distribution for white and black civil servants (Figure I), these are mostly high-earning white civil servants that were unsuitable counterfactuals for the black civil servants we study. In column 5, we report the mean difference between the matched black and white civil servants in 1911. Within the matched sample, black and white civil servants are now very comparable. We do not find any statistically and economically significant differences by earnings, gender, age, or type of employment. Black civil servants are slightly more likely to be based in D.C. even when comparing within our matched group. This difference, however, is orders of magnitudes smaller than in the unmatched sample. Importantly, we demonstrate in robustness checks (Section 4.1.1) that our results also hold when exactly matching on civil servants' state of residence.

4 Main results: Direct effects under Wilson's Presidency

4.1 Effect of employment segregation on earnings

We now investigate how Wilson's segregation policy affected racial earnings inequality within the civil service. Specifically, we study how Wilson's segregation policy impacted the black-white earnings gap using a matched difference-in-differences (DD) research design. For individual i and year t, we relate earnings to this policy by

[19] See, e.g., applications like Sarsons (2020) or Azoulay et al. (2019). Our results also hold using simple OLS regressions.

[20] The binning was chosen to obtain balance on the joint distribution while minimizing the loss of sample size due to the lack of exact counterfactuals. Our results do not hinge on the particular choice of binning.

estimating the following regression:

$$log(w_{it}) \quad = \quad \beta \times Black_i \times Wilson_t + \theta_i + \tau_t + \varepsilon_{it} \tag{1}$$

where w_{it} is individual i's earnings for year t. $Black_i$ is a dummy variable that is 1 if the race of the individual is black and 0 if the individual is white (see subsection 3.2). Given our matching strategy, the black-white comparison is made among civil servants of the same sex, who served in the same department and bureau, hold the same contract type, earn comparable salaries, and are of comparable age before segregation in 1911 (see subsection 3.3). $Wilson_t$ is a dummy indicating exposure to the segregated federal government. This variable equals 1 from 1913 onwards when Wilson was inaugurated as President.[21] θ_i are individual fixed effects and τ_t are year fixed effects. The key parameter of interest is β, which denotes the change in the black-white earnings gap after segregation. The standard errors are clustered at the individual level.

Table II shows the results based on the sample of matched civil servants who could be uniquely linked to the 1910 census. In column 1, we first show the results without individual fixed effects. Black civil servants earn, on average, 3.6 percent less than their white counterparts before Wilson (1907-1911).[22] This gap, however, increases by 7.9 percentage points after Wilson assumed office (1913-1921). In column 2, we include individual fixed effects, thus only comparing salary changes within the same civil servant around Wilson's transition. Even when partialing out unobservable differences across individuals, we still observe a 6.9 p.p. increase in the black earnings penalty within the federal bureaucracy.

A key assumption for a causal interpretation of the results is that the black-white earnings gap among our matched civil servants would have evolved along common trends in the absence of Wilson's segregation policy. Existing work has documented the presence of strong race-specific career dynamics during the time period we study (Dewey, 1952; Wright, 1986; Collins, 2000). If a "glass ceiling" for black civil servants exists, a gap in career progression could show up over time even in the absence of Wilson's segregation measure.[23] To address this, we allow for flexible race-specific differences in the general age-salary profile through the inclusion of Black $\times$ Age bin FEs (column 3). This is a conservative specification that not only accounts for pre-existing race-specific "ceiling effects," but also partials out any potential effects of the segregation policy that affected black civil servants differentially by age. To maintain sufficient variation in black vs. white civil servants within

[21] Wilson was inaugurated on March 4, 1913. Our 1913 data are based on the cut-off July 1st, capturing post-transition.

[22] Note that while our coarsened-exact matching of black and white civil servants ensures balance in earnings in 1911, we do not balance characteristics between 1907-1909.

[23] As scholars like Wright (1986) note, black workers in the late 19th and early 20th century could often receive the "going wage" in lower-level jobs, but faced "a virtual upper limit to their possible progress above that level."

each cell, we use ten equally sized bins, corresponding to a mean age interval of 5.5 years per bin.[24]

The result shown in column 3 corroborates the existing literature focused on the private sector, confirming the presence of "glass ceilings" also within the federal government for black workers. Consistent with the presence of race-specific differential career dynamics, the estimated magnitude is now smaller but remains – despite the demanding specification – statistically and economically significant.[25] Our conservative and preferred estimate, which accounts for pre-existing race-specific differences in career progression, suggests a decline in the relative earnings under Wilson of 3.4 p.p.

We can further investigate the possibility of differential black-white earnings trends by assessing pre-trends. We estimate flexible versions of our main specification (Equation 1), where the earnings gap is allowed to vary over time. As Figure II shows, there are no marked pre-existing trends in the black-white salary dynamics before Wilson's segregation order – if anything, there is slight convergence. It is only *after* Wilson assumed office (and when segregation was implemented) where we observe the widening of the black-white earnings gap.

As shown in Table I for the full sample, black civil servants are more likely to hold positions paid on a daily basis. To explore whether Wilson's policy also impacted the contract type, the dependent variable in Table II, column 4 is a dummy for whether an individual's position is full-time (i.e., paid per annum) or not. Compared to the pre-Wilson period, black civil servants are 2 percentage points less likely to hold full-time positions. Finally, column 5 quantifies the extent to which the policy affected the ranking of black civil servants in the wage distribution. As column 5 shows, the increase in the wage gap translates into a decline in the relative position of the average black civil servant by 2 percentiles. Taken together, the results thus document significant direct negative effects of Wilson's policy on the relative earnings of black civil servants.

4.1.1 Robustness checks

We conduct a series of additional robustness checks to ensure that our results are not confounded by shocks that differentially affected the black-white earnings gap after 1913.

Matching on current state and job title. First, we assess to what extent our results hold up to even more stringent matching refinements. As Table I shows, despite matching on sex, age, salary, contract type, department and bureau, black civil servants are still slightly more likely to be based in D.C. In Appendix Table AII, column 2, we thus augment our rich set of matching covariates to also include the exact state of residence in

[24] Our results are robust to alternative binning, such as using fixed 5 or 10 year bins.

[25] As we will show in Table IV when decomposing the effects across tenure levels, an important effect of the Wilson segregation was to place a ceiling on returns to experience for black civil servants. Because experience and age are correlated, the specification here is most likely to give a lower bound for the effect of the segregation policy.

1910. Since we match on the joint distribution of such a large set of covariates, we now have a smaller number of comparison individuals. Despite this, the tighter comparison shows that our estimates remain very similar to our baseline estimate (shown for ease of comparison in column 1). In columns 3-4, we also assess the robustness when matching on job titles as an additional refinement. All our estimates are comparable, suggesting a widening of the black-white earnings gap under President Wilson of 3-3.7 p.p.

Balanced post-segregation panel. Second, while the Official Registers allow us to track the earnings of black and white civil servants at a high frequency, a natural limitation is that the data is only available conditional on being employed in the federal government. To assess if our results are driven by composition changes arising from differential exit, Appendix Table AIII, column 1 shows that our results also hold for those we observe in a fully balanced panel between 1911-1921.[26] This suggests that temporal shocks that may have shifted the composition of the federal government after 1913 are unlikely to drive our results.

WWI and Great Migration. Third, although assuring that our results are not driven by composition changes, we also explicitly investigated whether our results may be confounded by World War I and the Great Migration – two major events that fell under Wilson's second term.[27] In Appendix Table AIII, column 2, we show that our results hold when restricting the post-period sample to Wilson's first term (1913-1915). Our results are also robust to dropping defense-related departments (Navy and Army) and controlling for county-level military employment (columns 3 and 4). Likewise, to assuage remaining concerns over the role of the Great Migration, we show that our results hold when dropping civil servants employed in the southern states and when directly controlling for the county-level change in the black population between 1910-1920 (columns 5 and 6). We consistently observe a robust post-segregation decline in the relative earnings of black civil servants.

Private sector control group. Fourth, we construct a private sector "control group" based on census data to provide further evidence that our results do not reflect a general economy-wide opening of the black-white earnings gap. Specifically, we tracked a comparable sample of non-federal government workers over time. These "control" individuals are non-agricultural workers comparable to their federal government counterparts in terms of state of residence, race, and occupational income score in 1910, and linked across 1900-1940 following the method of Abramitzky et al. (2019). Reassuringly, we find no evidence of a comparable economy-wide opening of the black-white earnings gap, as measured by occupational income scores (Appendix Figure AV, panel (a)). In contrast, we observe for the census-linked civil servant sample an expansion, consistent with the

[26] Appendix Figure AIV shows the visual evidence, confirming the results do not differ across the balanced vs. unbalanced subsamples.

[27] The U.S. entered World War I in 1917; likewise, the historical literature dates the onset of the Great Migration to 1916 in the rural South (Gottlieb, 1987).

main results based on the Official Register dataset (panel (b)).[28] While occupational income scores are arguably a noisy measure, the fact that the increase in the black-white occupational income score gap after Wilson's inauguration is not found among the private sector workers corroborates our interpretation of the main effects as the result of the segregation measures implemented in the federal government.

Placebo transition – McKinley to Roosevelt. Fifth, we corroborate our results by conducting a placebo exercise around an earlier transition. In Appendix Table AIV we test whether we observe a similar opening of the black-white pay gap around President Roosevelt's transition in 1903.[29] The specification is identical to the one used in Table II, column 3, except that the sample period is now 1897-1911 (instead of 1907-1921) and that we match individuals to the census in 1901 (instead of 1911).[30] In contrast to the sharp decline observed around the inauguration of President Wilson in 1913, there is no discernible change in the black-white earnings gap after 1901.[31] These combined results suggest that the "Wilson" effect we identified is unlikely to be driven by general differences in black-white career progression dynamics around transitions.

Political correlates of race. Finally, the effects are unlikely to be driven by political correlates of race. Since black Americans in our study period were more likely to be Republican (Logan, 2020), the effects could reflect changes induced by the political turnover that penalized politically misaligned civil servants. While the historical literature does not indicate that the segregation measures were aimed at Republicans (King, 1995; Yellin, 2013), we investigated this possibility by testing whether our main interaction of interest Black $\times$ Wilson is attenuated by the inclusion of a proxy for one's party affiliation. We proxy for party identity using the party of the representative of one's congressional district in the year of entry.[32] Albeit a crude measure, allowing Wilson's transition to have a differential effect based on our proxy of party affiliation does not "explain away" the differential increase in the earnings gap for black vs. white civil servants under Wilson (Appendix Table AVII). This suggests that the segregation effect is likely to operate separately from the same-party premium.

[28] This difference between panel (a) and (b) is significant in a triple difference, see Appendix Table AV.

[29] Note that while Theodore Roosevelt was inaugurated in September 1901, the Official Registers record civil servants as of July. For Roosevelt, 1901 is thus the pre-period and 1903 the post-transition period.

[30] A limitation – and the reason why we initially did not collect data for earlier years – is that the format of the Official Registers changes significantly prior to 1907. Entries are not recorded in the one-liner format (as was the case for 1907-1921) which facilitated digitization, and the first names are substantially more likely to be abbreviated with initials thus making the data harder to match. Appendix Table AVI summarizes the matching details and reports the descriptive statistics.

[31] Appendix Figure AVI shows both transitions using an event study framework. While the black-white earnings gap opens up after President Wilson assumes office, the black-white earnings gap remains flat and constant in th years immediately after President Roosevelt's election.

[32] We were unable to identify comprehensive publicly available voter registration data covering our time period and sample. For the time period 1997-2019 where voter registration data is available and can be linked to Federal government personnel records, Spenkuch et al. (2021) find no evidence among career civil servants that salaries or promotions depend on party alignment. Our proxy of political affiliation is based on two contextual features: (i) that the Official Registers record for each civil servant the congressional district of appointment (ii) that patronage by local politicians – despite the gradual expansion of competitive entry for most positions – played an important role in the appointment of civil servants (Johnson and Libecap, 1994; Hoogenboom, 1959).

4.1.2 Department-level and geographic heterogeneity

While Wilson sanctioned segregation measure to be implemented across the entire federal bureaucracy, its adoption was uneven across departments. Figure III summarizes department-specific estimates of the segregation effect and is consistent with the interpretation that segregation was a policy sanctioned by President Wilson. We focus on departments and agencies that are both observed throughout the entire study period (1907-1921) and include a sufficient number of black civil servants to estimate the salary gap (more than 50 in each year). As the figure shows, there is substantial cross-departmental heterogeneity: the increase in the earnings gap between black and white civil servants was largest in the Navy Department, followed by the Government Printing Office (GPO), the Post Office, the Department of War, and the Treasury. Consistent with the historical literature, these were departments among the first to implement segregation (Sosna, 1970; King, 1996).

The Treasury and Navy are particularly useful for understanding the role of Wilson's deputies in carrying out segregation of the federal government.[33] The cabinet members for these departments, Treasury Secretary William Gibbs McAdoo and Navy Secretary Josephus Daniels both had strong segregationist backgrounds (Justesen II, 2000; O'Reilly, 1997). Before his appointment, Josephus Daniels was a leading journalist in 19th century North Carolina and was known for his opposition to political or social equality for black Americans (Justesen II, 2000). He was one of the strongest proponents of the political disenfranchisement in the state. McAdoo, a native Georgian, was segregation's "chief spokesman and defender" (O'Reilly, 1997).

In contrast, the increase in the earnings gap was much smaller and even statistically indistinguishable from zero in departments such as the Commerce and Labor Department, or the D.C. city government.[34] Among the states led by Southern secretaries, we find that the effect is weakest in the Department of Agriculture. Interestingly, the Department of Agriculture was known for having initially resisted segregation (King, 1996). Furthermore, the largest increases in the salary gap are evident in departments headed by Cabinet secretaries hailing from the South. This difference in the effect size across departments led by Southern vs. Non-Southern secretaries is statistically significant (Appendix Table AVIII, column 2).[35] This result is consistent with effects being strongest in departments where top bureaucrats were most likely to share Wilson's segregationist preferences – in line with the historical literature.

While the plurality of civil servants worked in D.C. (36%), federal employees worked across the country, allowing us to empirically investigate the presence of spatial heterogeneity. In contrast to the institutional cross-

[33] See Appendix Figure AVII for the event studies by these major departments.

[34] The Department of Commerce and Labor became two separate departments in 1913. To ensure comparability over time, we keep the department combined throughout. Since our matching occurs within bureaus, though, this choice does not affect the main results.

[35] Appendix Figure AVII, panel (d) provides the visual evidence by Southern vs. Non-Southern led departments.

departmental heterogeneity, we do not find that the effect of federal segregation varies significantly across space. As Appendix Table AVIII, column 3 shows, while we find a 40% larger increase in the effect of segregation in D.C. – consistent with a more stringent implementation close to the center of the federal government – this difference is statistically insignificant.[36] We do not find that the segregation effect differs significantly for civil servants working in Southern vs. Non-Southern states (column 4).

4.2 Drivers of the earnings gap: transfers, entry, and exit

Having demonstrated a robust effect of Wilson's segregation policy on discrimination within the federal government, we turn to a discussion of mechanisms that may explain this increase in earnings inequality. As a bureaucracy, salaries in our context are tied to positions and seniority, leaving less room for discretionary salary-setting than in the private sector.[37] Earnings inequality in the federal bureaucracy is thus likely to be driven by two main channels: (i) the re-allocation of already-serving black civil servants to lower-salaried positions, and (ii) the disproportionate entry (exit) of black civil servants to lower (in higher) salaried positions.

4.2.1 Transfers and relative demotions.

We conduct a direct test of the quantitative importance of the reallocation channel by measuring how much of our coefficient of interest, $Black_i \times Wilson_t$, changes when we condition on occupation. We implement this test using job title fixed effects, which allow us to compare salary differences between black and white civil servants with the same occupation around Wilson's transition. The results are reported in Table III, columns 1-3. To benchmark the importance of job assignment, column 1 repeats the baseline difference-in-differences estimate (corresponding to Table II, column 3). Column 2 re-estimates Equation 1 with the inclusion of job title fixed effects, thus showing the impact of Wilson's segregation order *netting out* salary differences driven by a person's occupation. After partialing out average cross-position salary differences, the earnings gap is now much smaller in magnitude and statistically insignificant. The reduction in the earnings gap from 3.4 p.p. to -0.008 p.p. suggests that a large share of the increased earnings gap occurred through the reallocation of black civil servants to job titles and positions that commanded lower salaries. This result is robust to more flexible job title fixed effects, such as allowing job title fixed effects to vary by department and time (column 3).

Entry and exit. While the increase in the black-white earnings gap among already-serving civil servants is primarily driven by the allocation of black workers to relatively lower-paid positions, segregation is likely to

[36] Appendix Figure AVIII shows the corresponding visual evidence. While the D.C. estimate is systematically larger than the non-D.C. estimate, we do not have sufficient power to statistically reject the equality of the pooled coefficients.

[37] In our data, bureau-specific job titles alone explain 68% of the variation in salaries.

also affect the extensive margin. As part of the segregation policy, the federal government, for example, began requiring that photographs be attached to all job applications, making it easier to discriminate against black candidates (Yellin, 2013). To study whether the patterns of entry differ before and after Wilson's arrival, we now focus on the sample of civil service entrants. We define the entry year of a civil servant as the year the person is first observed in the Registers. Given the censoring of our data at 1907 – our earliest year – we restrict the sample to those who entered between 1909 and 1921. Figure IV, Panel (a) reports the probability of a new entrant to be a black civil servant depending on the entry salary decile around Wilson's transition. The magnitudes reported are relative to the highest decile, which is the omitted category. As the figure shows, black civil servants tend to enter at lower-salaried positions throughout our study period. The disproportionate entry of black civil servants at lower salaries, however, increases further under Wilson. While an entrant in the lowest decile is 11 p.p. more likely to be black before Wilson, that relative difference increases to 22 p.p. thereafter. Wilson's term is thus associated with an increased entry of black civil servants at lower-paid positions.[38]

Finally, Figure IV, Panel (b) focuses on the exit margin. The figure shows the differential probability of a black civil servant to exit in a given year by the salary decile, broken down by the pre-Wilson and Wilson periods. Throughout our sample period, black civil servants were more likely to exit the higher their salary is: a black civil servant was less likely than the white counterpart to exit at lower salary deciles, but more likely to exit positions at higher deciles. This pattern, however, increased further under Wilson's presidency.[39] The combined evidence thus suggests a reallocation of black civil servants to lower-salaried positions on both the intensive and extensive margins: already-serving black civil servants were transferred to lower-paid positions; those who served in higher-salaried positions were also more likely to exit; at the same time, new black entrants were more likely to begin their civil service career at the lowest ranks of the earnings distribution.

4.3 Implications for the (mis)allocation of talent

There are two ways to interpret the large increase in earnings inequality between black and white civil servants under Wilson. One interpretation is that the observed reallocation constitutes an improved allocation of talent. If black civil servants were less qualified to serve in their assigned positions, Wilson's policy may have contributed to a more efficient use of the state personnel. As discussed in section 2, part of Wilson's publicly-stated rationale for segregating the bureaucracy was to increase the efficiency of the federal government (Lunardini, 1979). The

[38] These modest exit effects are consistent with the existing literature. Van Riper (1958) estimates that black federal employment fell from nearly 6% of the total civil service in 1910 to 4.9 % in 1918.

[39] These patterns are statistically significant. See Appendix Table AIX for the corresponding regressions. Consistent with Section 4.1.2, we also find suggestive evidence consistent with the heterogeneity that the extensive margin effects are stronger in departments headed by Southern Cabinet secretaries.

alternative, competing interpretation is that the increased discrimination arising from the segregation policy exacerbated the misallocation of talent within the bureaucracy.

To probe the misallocation channel further, we assess whether the reduction in black civil servants' earnings was partly due to lower levels of human capital. In other words, did higher-paying positions go to more qualified people after Wilson assumed office, or is the change in black-white earnings unrelated to differences in qualification? Empirically, we test if Wilson's impact on the racial earnings gap disappears when comparing workers of similar skill levels. The underlying assumption for this test is that a more assortative matching – with more educated workers being paid more – is more likely to reflect an efficient allocation (Hsieh et al., 2019).

A challenge in this setting is that education is not reported in the Registers. We thus rely on external data from the 1940 Decennial Census – the first year in which the Census Bureau collected data on years of schooling – to supplement our primary data.[40] This retrospective approach relies on the assumption that human capital is time-invariant for individuals past schooling age. We link our civil servants observed in 1911 to the 1940 Census using a similar matching strategy that we use to infer worker race – matching exactly on full name and birth state.[41] While this approach allows us to obtain measures of human capital, a drawback is that we are only able to collect these measures for civil servants who are still alive or can be matched nearly 30 years later.[42] Despite these challenges, we match 41% of the individuals from the census-linked sample.

A comparison of black and white schooling levels for our 1940 census-linked sample shows a significant racial schooling gap in 1911. The average years of education for white civil servants working in 1911 were 11 years, whereas the average years of schooling were 8 for black civil servants. Even when comparing the matched subsample of black and white civil servants, black civil servants have on average 1.75 years less schooling (Appendix Table AX). We assess if equalizing levels of education by augmenting our regression to hold constant schooling differences affect our estimates. If segregation indeed *reduced* misallocation, we would expect the inclusion of human capital controls to substantially reduce the observed black-white earnings gap.

Table III, columns 4-5 report the results. Column 4 is the main estimate based on the subsample of civil servants who could be linked to the 1940 census. The estimated earnings gap is comparable to the estimate based on the full sample (Table II, column 3), thereby alleviating concerns over sample selectivity. Column 5 includes the human capital controls by flexibly interacting fixed effects for each year of schooling with time. Even

[40] Prior to 1940, the only measure of education available is literacy. Given the positively selected nature of civil servants in our study period, the focus on literacy does not provide sufficient variation to conduct the analysis.

[41] We do not match on current state in 1910 since individuals might have migrated. To further increase the linkage rate, we also use the 1910-1940 cross-walk for census-linked male civil servants in 1910 to obtain additional matches. Since we both link directly to 1940 (based on name and birth state) and using the Census Linking Project's cross-walk, we obtain schooling measures for both males and females.

[42] Specifically, older civil servants in 1911 or those who changed their names are less likely to be found in 1940. See Appendix Table X.

when comparing black and white civil servants with the same level of education, the gap under Wilson remains significant and large. If anything, accounting for human capital differences increases the point estimate.

A caveat to the interpretation of this result is that the 1940 education variables are mismeasured (Goldin, 1998; Margo, 1986). To the extent that the measurement bias varies across race, black and white workers may still differ in their underlying qualifications even after conditioning on the census measures. To probe further into the allocation of talent under Wilson, Figure V reports the returns to education for all serving civil servants before and after Wilson *separately* by race. The returns are estimated for each level of education relative to no education after partialing out age and year fixed effects. Panel (a) reports the returns to education for black civil servants before and after Wilson assumed office. While more educated black civil servants tend to be allocated to higher-salaried positions inside the federal bureaucracy, this assortative pattern declines under Wilson's administration. Compared to the pre-Wilson period, returns during Wilson's presidency are lower for black civil servants across each level of education, especially at the highest level. In contrast, the returns to education for white civil servants remain constant before and after Wilson (Panel (b)). Table IV corroborates the graphical pattern in regression form. While returns to education decrease for black civil servants under Wilson (column 1), this is not the case for white civil servants (column 2). Overall, the relative returns to education decline significantly for black civil servants during Wilson's presidency. This holds both when only exploiting variation in education among black civil servants in a difference-in-differences (column 1), as well as when making that comparison relative to their white counterparts in a triple difference (column 3).

In Table IV, column 4, we repeat the exercise using another measure of human capital: experience, as measured by the years served in the federal government (measured up to the current year). We measure tenure as the number of years since we first observe a given civil servant. Since tenure is censored at 1907, we restrict the sample to only those who entered 1909 onwards.[43] Consistent with the lower returns to education for black civil servants, we find that the returns to tenure also decline significantly for black civil servants during Wilson's term in office (column 4). Taken together, we find that the increased salary gap cannot be explained by differences in human capital. Instead, the allocation of talent becomes less assortative under Wilson's presidency, consistent with an increased misallocation of talent induced by segregation.

[43] This means that the resulting measure only captures variation in relatively short tenures driven by entrants in 1909 or 1911.

5 Beyond the Wilson Presidency: Medium and Long-run Effects

5.1 Direct effects on home ownership

The large increase in black-white earnings inequality and continued divergence (Figure II) raises the important question of whether the effects of Wilson's segregation measures extended beyond his presidency. Anecdotal evidence suggests that the decision to segregate established a new equilibrium of separation according to the "Color Line" (Sundstrom, 1994). Upon regaining the presidency, the Republican Party distanced itself from the racial liberalism of the Reconstruction period. Newly-elected President Warren Harding stressed in the early days of his administration that "social equality" and "racial amalgamation" posed threats to state efficiency and social harmony (Yellin, 2013). It is thus likely that segregation persisted to some degree beyond 1921.[44]

We thus now turn to consider whether the impact of Wilson's segregation policy also impacted civil servants' long-term wealth accumulation. Large disparities in wealth continue to persist between black and white American families (Charles and Hurst, 2002; Hamilton and Darrity, 2010). Given that wealth can be transferred across generations, differential wealth accumulation in the past could have persistent effects in the longer term. Despite the importance of this channel, there is little research on the extent to which racial wealth differences can be traced to discriminatory policies. We provide evidence that federal segregation was one contributor.

To examine whether this shock in workplace discrimination had downstream effects on racial wealth differences, we use data on home ownership. Home ownership is a suitable outcome for a few reasons. First, there is a strong historical association between home ownership and wealth. As such, the racial wealth gap could derive, at least partially, from the large observed racial differences in housing wealth. Second, home ownership is likely to be closely related to the earned income received over the life cycle (Charles and Hurst, 2002). It is thus reasonable to hypothesize that the effect we identify above may contribute to racial differences in other outcomes. Finally, data on home ownership is consistently available for our time period (Collins and Margo, 2011).

We identify the effect of federal segregation on racial gaps in home ownership by constructing a supplementary longitudinal dataset using census data, which contains owner-occupancy outcomes for our sample of federal civil servants. We use the cross-walk provided by the Census Linking Project to track our census-linked civil servants from the 1911 Register between the years 1900-1940. The cross-walk is constructed based on the linking approach in Abramitzky et al. (2019). A limitation of this approach is that our panel now only includes male civil servants. As before, our empirical analysis is based on the comparison of black and white civil

[44] Unfortunately, the format of the Register data changes significantly after 1921 (including only the senior-most officials in an attempt to economize printing), preventing us from extending our study beyond 1921.

servants who worked in the same department and bureau, joined the civil service in the same year, are of comparable age, and are paid a comparable amount under the same contract type. Since the analysis is conducted in the census panel, we also match on the occupational income score and home ownership in 1910.

Table V presents our estimates of how Wilson's discrimination policy affected racial differences in home ownership. The empirical specification follows the main estimating equation (Equation 1), except that the data is no longer biennial but decadal. All regressions are based on the matched sample of civil servants. In column 1, we report the baseline regression with census year and individual fixed effects. Compared to their white counterparts, black civil servants are less likely to report owning a house after Wilson assumed office.

As before, a concern when tracking individuals over time is that the results may be driven by race-specific differential trends in home ownership patterns over the life cycle. To address this, column 2 thus includes race-specific age bin fixed effects, following our main specification in Section 4. Interestingly, the change in the home ownership gap now increases significantly. The change in the coefficients suggests that the black-white home ownership gap is closing over the life cycle, thus attenuating our Black $\times$ Wilson comparison.

Another empirical concern in this context is the potential threat of unobserved confounders affecting *all* black Americans in the housing market. Housing markets during the course of the 20th century were greatly shaped by racial discrimination and segregation. Black Americans seeking a home faced various public and private sources of discrimination – for example, through racially restrictive covenants in deeds or steering by real estate agents (Fishback et al., 2020). Given these sources of economy-wide racial disparities, the observed effect may not only capture the segregation policy, but part of an overall trend affecting all black families. To assess this possibility, column 4 thus restricts the comparison to only individuals within the same state by including state-specific census year fixed effects. Reassuringly, the results remain comparable.

To further allay concerns over economy-wide changes in the black-white home ownership gap, we again construct a private sector "control group" by tracking a matched sample of non-federal government workers observed in 1910 over the same time period using the same census-linking approach of Abramitzky et al. (2019). To ensure that the "control group" is comparable, we omit the agricultural sector and reweight the sample to match our civil servant sample on the state of residence, race, and occupational income score in 1910.[45] We then estimate the same regression specification. Assuringly, we do not find an opening up in the home ownership gap between black and white non-federal government workers (column 4). This difference is statistically significant in a triple difference (column 5).

[45] Our results hold both with and without reweighting (Appendix Table AXI).

Figure VI shows the flexible event study for both the census-linked civil servants (solid line) and the non-government control panel (dashed line), corresponding to the specification of Table V, Columns 3-4 except that we now allow the Black $\times$ Wilson interaction to vary by each census round. In contrast to the decline in the black-white home ownership gap observed in the public sector, the gap in the non-government sector remains relatively flat over the same time period. To the extent that black and white individuals in the matched non-government control group are subject to the same economy-wide shocks, the results are consistent with capturing the negative effects of Wilson's segregation policy and not aggregate factors that affected black-white home ownership patterns. These results thus provide evidence that the economic effects of Wilson's discriminatory mandate – even if temporary – persisted beyond his term in office.

5.2 Intergenerational effects on education, earnings, and mobility

We now consider how Wilson's policy of state-sanctioned discrimination affected black families' welfare across generations. Measuring intergenerational effects is necessary to understand the full impact of federal policy changes, which may accrue across several decades and generations of families. There are also strong reasons to believe that discrimination against black government employees may have had not only immediate effects on affected workers but also downstream effects on their families. By reducing workers' earnings, workplace discrimination may have also reduced the opportunities for black government workers to accumulate wealth and invest in their children. Limiting the ability of black workers to invest in children's education may have in turn reduced the future earnings potential of young black children. Indeed, research points to early childhood periods as being critical for human development and future economic success (Bailey et al., 2020a; Almond and Currie, 2011). We will thus assess whether discrimination against black workers affected the children's later-life outcomes – including educational attainment and income.

To test if federal segregation contributed to the inter-generational persistence of black-white economic disparities, we must first identify the children of the impacted civil servants. We propose a two-step procedure. First, we identify the children of each civil servant in the 1911 Official Register using the 1900 and 1910 census rounds.[46] We define a person to be a child if the person shares the same last name as the civil servant, is at least 18 years younger, and was living in the same household. In the second step, we link the children of civil servants *forward* to the 1940 Decennial Census.[47] To implement the linking of children across census rounds,

[46] Using the 1900 census in addition to 1910 ensures that we are also able to identify older children who have already left the civil servants' household by the time Wilson assumed office.

[47] This is the earliest round for which we have education and earnings data in the Decennial Census.

we once again implement the method of Abramitzky et al. (2019).[48] This approach is a fully automated way of linking historical datasets by first name, last name, and age. Since the last name will be a key linking variable between the 1910 and 1940 census rounds, the sample is restricted to male offspring of civil servants due to the prevailing norm of female name changes following marriage during our study period.

To identify the intergenerational effects of Wilson's segregation policy, we exploit variation in the age of the civil servants' children in 1913. When Wilson assumed office in that year, some children were still young, of schooling age, and co-habiting with their civil servant parents; other children were already old, completed schooling, and working. In the presence of credit frictions and imperfect insurance through family networks, it is likely that young children will be more exposed to the adverse shock from the segregation policy than older children who no longer live with their parents. This allows us to implement a difference-in-differences design, comparing the black-white earnings gap across young and old children in 1940. For the cross-sectional outcome y_i of child i, we estimate the following regression:

$$y_i = \alpha \times Black_i + \beta \times Young_i \times Black_i + \tau_{K(i)} + \theta_{S(i)} + \varepsilon_i \quad (2)$$

where $Black_i$ is a dummy that is 1 if the child's parent is a black civil servant, and 0 otherwise. $Young_i$ is a dummy that is 1 if the child was sufficiently young in 1913 (and living with their parents, thus *directly exposed* to Wilson's segregation order) and 0 if the child was already old (and no longer living with their parents, thus *not exposed*). We define an individual to be young if the person is below 18 in the 1910 census. The key parameter of interest is β, capturing a differential change in the black-white earnings gap among children who were young when Wilson assumed office (and thus exposed to the segregation measure) and those who were already older (and thus not exposed). $\tau_{K(i)}$ are age fixed effects and $\theta_{S(i)}$ are county fixed effects. We cluster the standard errors at the civil servant parent-level.

Once again, a key empirical challenge is disentangling cohort-specific trends in the black-white earnings gap from economy-wide trends. The first half of the 20th century was a period in which segregation was rampant in many domains, such as schooling, transit, and public accommodations (and particularly so in the South). Discrimination in education and health access thus likely affected all black children. To net out these economy-wide effects that differentially affect black children, we once again complement the main specification of Equation 2 with a triple-differences using the change in the black-white outcome gap among young vs. old in the *non*-government sector as a control group. The construction of the control group follows the same approach as for

[48] We use the cross-walks made available by the Census Linking Project (https://censuslinkingproject.org/).

the civil servant sample, linking children of non-agricultural, non-government sector parents in 1910 forward to 1940. As before, we reweight the sample to match our civil servant sample on the state of residence, race, and occupational income score in 1910.[49] A disproportionate negative effect on the young, exposed black children in the public sector would bolster an interpretation consistent with intergenerational effects.

Table VI reports the results. In column 1, we first report the change in the black-white educational attainment for children of civil servants who were young vs. old in the year Wilson assumed office. When comparing among those who were already old in 1913, children of black civil servants have on average comparable years of education than their white counterparts. The gap, however, increases when comparing children who were still young in 1913, consistent with the segregation measure negatively impacting the children of black civil servants who were of schooling age. In column 2, we produce the same black-white education gap for the control group of non-government individuals of comparable age and socioeconomic background. The black-white education gap is larger for older children (reflecting the positively selected nature of black civil servants in the public sector), with black individuals reporting 1.2 fewer years of education. Importantly, and in contrast to the federal government sample, that gap remains comparable for the young cohorts. While the economy-wide outcome gap between black and white individuals in the non-government sector has been constant across cohorts, the same gap in the federal government has further opened up among younger children of black civil servants. To the extent that this differential effect across the federal and non-government sector is attributable to Wilson's segregation policy, the result would suggest a significant negative intergenerational effect on educational attainment. Pooling the federal and non-government sample (column 3), the triple difference estimate suggests a relative decline by 2.3 years – a sizeable and economically meaningful effect.[50] Given the negative intergenerational effects on human capital accumulation, we also test whether there exist differences in labor market outcomes. Restricting the sample to wage-earning individuals, we find a negative relative decline in the earnings in the triple difference (column 4). While the black-white earnings gap remained constant across cohorts in the non-government sector, the same gap in the federal sector saw a relative decline by 25 p.p. This effect is large, corresponding to a decline in the overall earnings distribution by 9.2 percentiles (column 5).

Like the home ownership results, there is a similar potential concern that secular changes in the black-white gap across cohorts may be explaining part of the relative decline in socioeconomic outcomes. For example, the deterioration of schooling quality over time (Margo, 1990) could have differentially affected black vs. white children. Since our empirical strategy relies on comparing the relative decline in the black-white education gap

[49] Our results hold both with and without reweighting (Appendix Table AXII).

[50] Appendix Figure AIX summarizes the triple difference visually by plotting the residual means for each of the 8 cells (black $\times$ young $\times$ federal govt) after partialing out county fixed effects.

across children of federal civil servants and their private sector counterparts, however, such race-specific declines across cohorts will only affect our results if it differentially affects black children of federal government workers.[51] To probe further, Appendix Table AXIII, Panel A explicitly includes parental state of residence in 1910 $\times$ Black $\times$ Young FEs. These tight fixed effects restrict the identifying variation to only comparisons between civil servant children and their private-sector counterparts within the same state, race and cohort, partialing out cross-state differences in race-specific secular trends across cohorts. Finally, Appendix Table AXIII, Panel B also shows that the results are robust to the inclusion of parental characteristics such as sex, age and the overall household size in 1910. Taken together, the results thus provide suggestive evidence for large negative intergenerational effects of Wilson's policy on the earnings of children of black civil servants. The decline is accompanied by a similar drop in educational outcomes, consistent with lower human capital investments as a channel through which exposure to the adverse economic shock under Wilson had scarring effects.

6 Conclusion

Outcome gaps by race remain a persistent feature across the globe and in the United States. A growing literature documents the role of such inequalities in shaping the political economy of public good provision and economic performance (Alesina et al., 1999; Alesina and La Ferrara, 2005; Hsieh et al., 2019). While many countries have enacted a wide range of policies aimed at ameliorating existing inequalities, much controversy remains over how far such policies should go. Some argue that racial discrimination is no longer a relevant driver of racial economic gaps in income and wealth, and that the path to "leveling the playing field" lies in addressing margins such as racial differences in skill (Fryer, 2011). Other research suggests that more aggressive policies, such as affirmative action programs, are appropriate (Bleemer, 2020). Such findings provide support for policies that acknowledge differences in starting conditions. While the theoretical case for corrective policy hinges in part on the extent to which past discrimination affects outcomes across generations, empirical evidence for such persistence remains relatively scarce.

In this paper, we make progress by documenting both the short and long-run effects of a unique episode of state-sanctioned discrimination: the segregation of the *entire* federal civil service under President Woodrow Wilson. This historical context is particularly suitable for the study of the persistence of inequality: at the beginning of the 20th century, public sector employment was a major engine of social mobility for black civil servants.

[51] While federal government workers are highly selected and thus indeed likely to be different from their private sector counterparts, note that our refined private sector control group is reweighted to be comparable to the federal government parents in terms of race, occupational income score, and state of residence in 1910.

Federal segregation induced a sharp increase in racial discrimination that allows us to trace out the effects for a particularly important subset of black individuals – the emerging black middle class.

Underpinning our study is a large-scale digitization effort of historical personnel records. Tapping into the rich Official Registers allows us to overcome existing data limitations, enabling us to construct careful counterfactuals. We implement a matched difference-in-differences, comparing the outcome gaps for black and white civil servants around Wilson's presidential transition. The availability of rich and high-frequency personnel data also allows us to shed light on the mechanisms and trace out the dynamic impact of the segregation policy. By linking the personnel records to census data, we can even go beyond and shed light on long-term outcomes not only for the affected civil servants but also their offspring.

Our results provide evidence for substantial costs of President Wilson's segregation policy. Documenting these impacts systematically is not only important for guiding theory, but also speaks to the historical debate on employment segregation (Higgs, 1977; Sundstrom, 1994). Wilson argued that by separating groups by race, he was helping black Americans, "rendering them more safe in their possession of office and less likely to be discriminated against."[52] Our results are inconsistent with this interpretation, and document a policy of "separate but *un*equal." Black civil servants experienced substantial declines in their earnings by 3.4-6.9 p.p., driven largely by transfers to lower-paying positions. The policy also affected the extensive margin, with black Americans less likely to enter and remain in higher-paying, senior-level positions. Strikingly, we find that the reallocation patterns cannot be explained by an improved matching of talent to positions, instead documenting evidence consistent with an increase in talent misallocation within the American bureaucracy.

Importantly, we document long-term scarring effects of episodes of severe discrimination. While Wilson left office in 1921, black civil servants exposed to the segregation policy are less likely to accumulate housing wealth decades later. We also find suggestive evidence for negative intergenerational effects. While racial outcome gaps have been converging between old vs. young children in the private sector, the same gap has stagnated and – if anything – increased for children of federal civil servants exposed to the segregation policy: children of exposed black civil servants have lower earnings than comparable children in the private sector in 1940; we also find that they have lower levels of education, thus highlighting schooling as a mechanism of intergenerational persistence. As such, our combined results speak directly to theories of intergenerational mobility and discrimination. In our particular context, the results on persistence suggest that eliminating contemporaneous discrimination alone may be insufficient to fully close the persistent outcome gap between black and white Americans.

[52] Correspondence to the NAACP, July 23-September 8, 1913. See Israel and McInerney (2013), p. 191.

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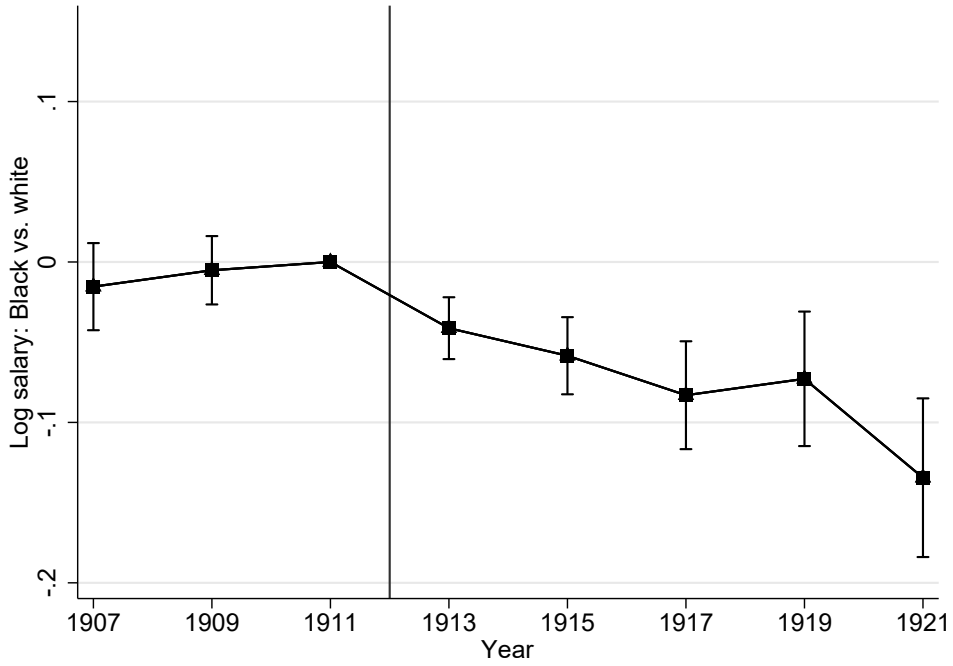
Figures and Tables

Figure I: Earnings distribution in the Federal Government by race in 1911

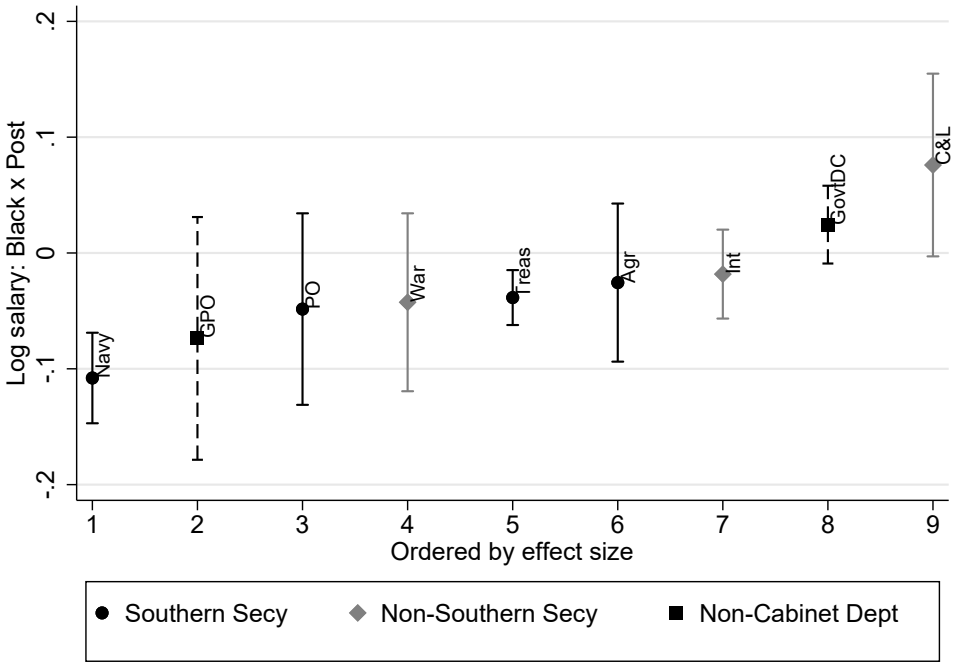
Notes: The figure shows the distribution of salaries (in USD) for white and black civil servants in 1911. The data is from the Official Registers and all salaries are annualized.

Figure II: Racial earnings gap around Woodrow Wilson's Presidency



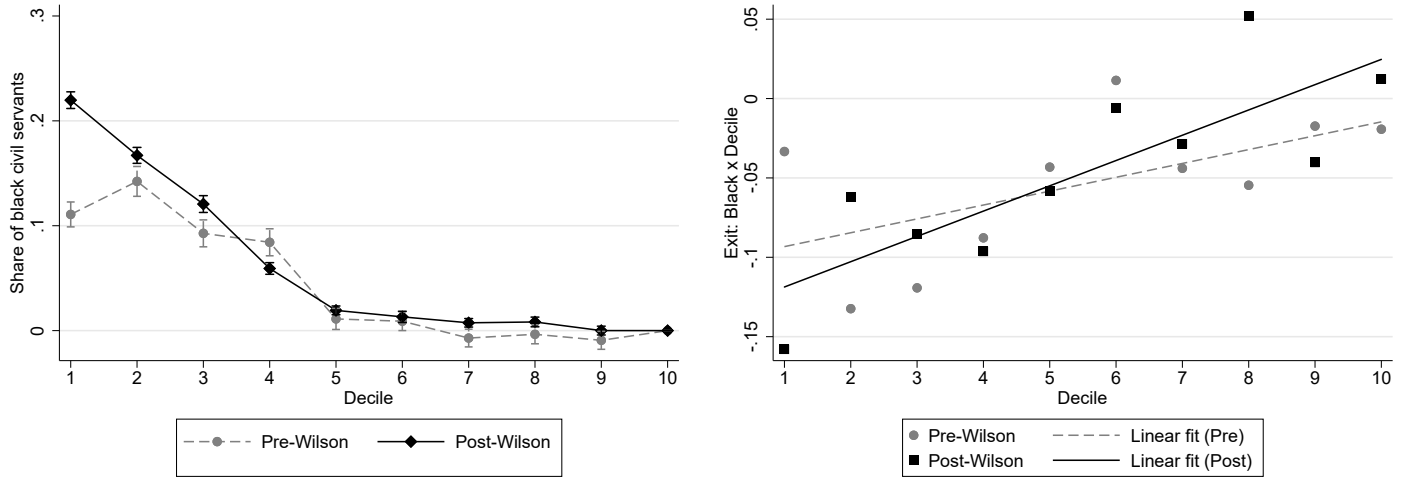
Notes: The figure shows the black vs. white (log) earnings gap for matched black civil servants around Woodrow Wilson's inauguration ($t = 1913$), covering the sample period 1907–1921 (solid black line). Black and white civil servants are matched based on sex, department, bureau, age, salary, and whether the position is paid per annum or not in 1911. The specification corresponds to the regression of Table II, column 3, except that we allow the Black $\times$ Wilson coefficient to vary by each time period. The solid vertical black line delineates the pre-transition from the post-transition period. The 95% confidence intervals reported are based on standard errors clustered at the individual-level.

Figure III: Racial earnings gap around Wilson's Presidency by department and agency



Notes: The figure reports the segregation effect (captured by Black × Wilson) separately for each department. All estimates are based on the regression specification of Table II, column 3 which is estimated separately for each department. To ensure we have sufficient variation to estimate the black-white earnings gap, we exclude departments with less than 50 black civil servants in any given year, as well as departments not observed throughout the entire sample period of 1907–1921. The estimates shown in black font are for departments with Cabinet secretaries from southern states, while those in gray font are for departments headed by Cabinet secretaries from northern states. The GPO and DC Government (both dashed gray, in square) do not have a Department status and thus no Cabinet secretary. The 95% confidence intervals are based on standard errors clustered at the individual-level.

Figure IV: Entry and exit of black civil servants by earnings decile around Woodrow Wilson's Presidency

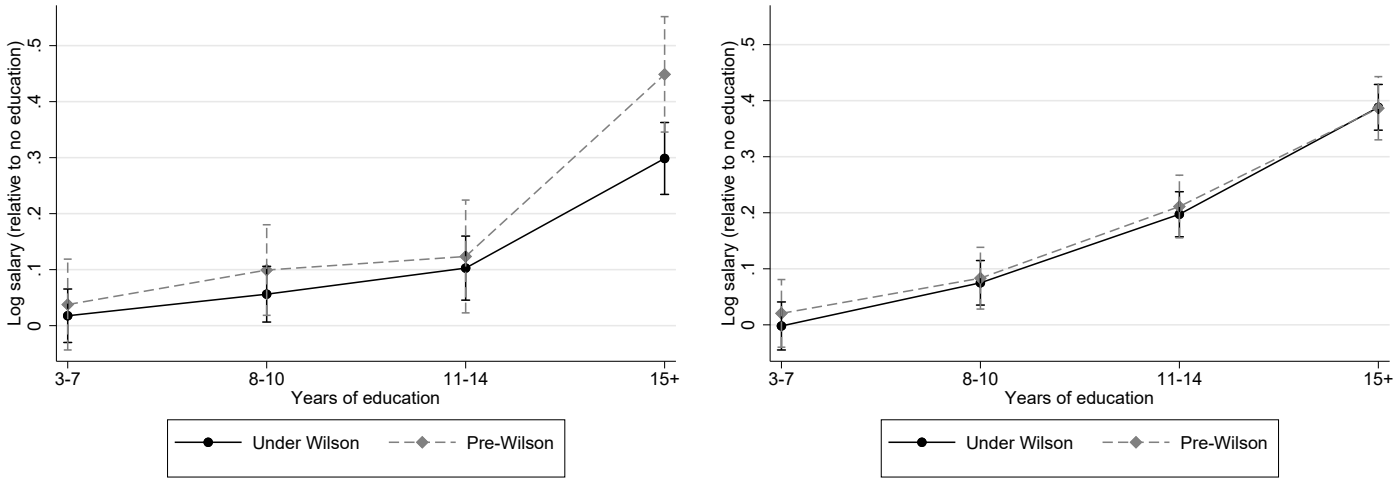


(a) Entry margin

(b) Exit margin

Notes: Left panel (a): The figure shows the share of black civil servants among entrants by salary deciles in the year of entry, broken down by entry prior to Wilson's Presidency (1907-1911) and entry after Wilson's Presidency (1913-1921). The year of entry is defined by the first year a civil servant is observed in the Official Registers. The estimates are based on the full sample of entrants, excluding the first year of 1907 to avoid censoring in the construction of the entry measure. The omitted baseline category is the highest earnings decile. The 95% confidence intervals are based on standard errors clustered at the individual-level. Right panel (b): The figure reports the differential likelihood of black vs. white civil servants to exit by salary decile in a given year, broken down by exit prior to Wilson (1907-1911) and exit after Wilson (1913-1921). The year of exit is defined as the last year a civil servant is observed in the Official Registers. The estimates are based on the full sample of serving officers, excluding the last year of 1921 to avoid censoring in the construction of the exit measure. The omitted baseline category is the highest earnings decile. The regression versions are reported in Appendix Table AIX.

Figure V: Returns to education by race before and after Woodrow Wilson's Presidency

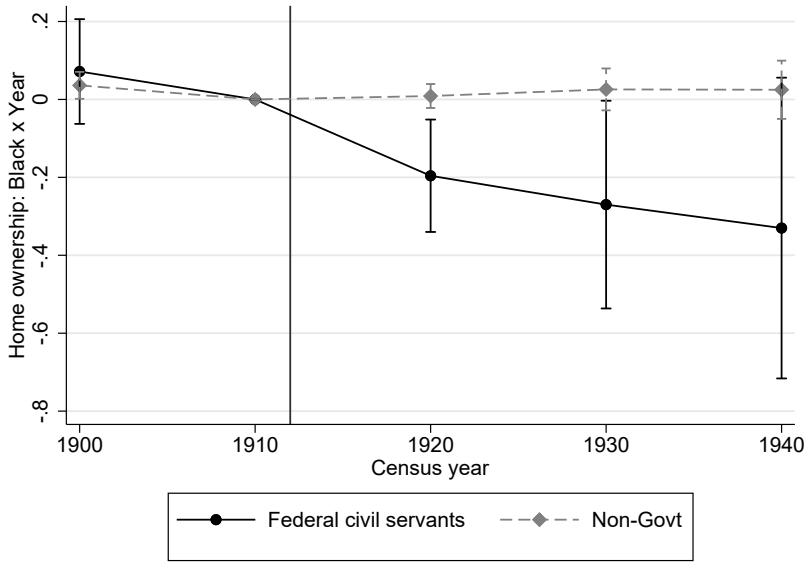


(a) Black civil servants

(b) White civil servants

Notes: The figure shows the returns to education for 3-7 years of schooling, 8-10 years, 11-14 years and $\geq$ 15 by race, before and after Woodrow Wilson's inauguration and implementation of the segregation order. The sample is restricted to civil servants working between 1907-1921 who could be linked forward to the 1940 census. The estimates are based on a regression of the (log) earnings on levels of education, age and year fixed effects, estimated separately for each subsample (black/white - Pre-Wilson 1907-1911/Post-Wilson 1913-1921). For interpretational ease, the binning is chosen to reflect modern-day education levels (elementary, middle school, high school, college). The omitted category is no completed education (0-2 years). Left panel (a): black civil servants. Right panel (b): white civil servants. The 95% confidence intervals are based on standard errors clustered at the individual-level.

Figure VI: Home ownership gap by race, before and after Woodrow Wilson's Presidency



Notes: The figure shows the home ownership gap between black and white civil servants around Woodrow Wilson's inauguration and implementation of the segregation order (solid black line). The sample is based on those civil servants listed in the 1911 Official Registers who could be linked to the 1910 census and then followed throughout the time period 1900-1940. These black and white civil servants are then matched based on sex, department and bureau, age, salary and whether the position is per annum or not in 1911, as well as the census occscore and home ownerships status in 1910. The specification corresponds to Table V, column 5, except that we allow the Black $\times$ Wilson coefficient to vary by each decade. For comparison, the gray dashed line shows the same gap for the non-governmental and non-agricultural panel. The panel is constructed by reweighting the control individuals to be representative of the civil servants in 1910 based on the occscore, state of residence and race and then following the individuals over time for 1900-1940. The vertical black solid line marks Wilson's inauguration. The 95% confidence intervals are based on standard errors clustered at the individual-level.

Table I: Descriptive statistics of census-linked and matched civil servants in 1911

	(1) Population mean	(2) Census-linked mean	(3) Black-white difference	(4) Matched sample mean	(5) Black-white difference
Log(salary)	6.610	6.734	-0.438***	6.375	-0.016
			(0.011)		(0.017)
Paid per annum	0.494	0.574	-0.009	0.532	0.000
			(0.005)		(0.013)
Paid per month	0.119	0.128	-0.044***	0.088	-0.002
			(0.006)		(0.006)
Paid per day	0.348	0.252	0.030***	0.304	0.002
			(0.008)		(0.012)
Log(job title rank)	7.643	7.634	0.072***	7.677	-0.009
			(0.019)		(0.025)
DC	0.264	0.370	0.220***	0.501	0.048***
			(0.009)		(0.013)
Female	-	0.139	0.066***	0.184	0.000
			(0.007)		(0.010)
Age in 1910	-	37.52	-0.435*	36.80	0.132
			(0.228)		(0.307)
Observations 1911	134,731	39,914		22,315	
- of which black	-	2,932		2,545	
Total obs. 1907-1921	1,364,056	353,925		96,099	

Notes: The table compares the census-linked and coarsened exact matched civil servants in 1911. Column 1 reports the mean characteristics of the full population based on the digitized Official Registers, as well as the total number of observations and the number of observations corresponding to 1911. Column 2 reports the mean characteristics for the subset of the Official Register individuals serving in 1911 that could be matched to the 1910 census based on the full name, current state of residence, and state of birth. Column 3 reports the mean difference within the census-linked sample between black and white civil servants. In Column 4, we report the mean characteristics of the matched sample where black civil servants are matched to white counterparts based on sex, department, bureau, age, salary, and whether the position is paid per annum or not in 1911. Column 5 reports the mean difference in the coarsely exact matched sample. Log(salary) is the (log) annualized earnings of the civil servant; paid per annum/month/day are dummies that indicate whether the contract is per annum (full-time), per month or per day. Log(job title rank) is computed by ordering the job titles by their associated median salary between 1907-1921, with higher ranks indicating lower paid job titles. DC is a dummy that is 1 if the individual is employed in Washington, D.C. Robust standard errors are computed for columns 3 and 5. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table II: Impact of Woodrow Wilson's segregation regime

	(1)	(2)	(3)	(4)	(5)
	Log annual salary			Full-time	Salary pctile
Mean of dep. var	6.765	6.765	6.765	0.552	49.04
Black	-0.036**				
	(0.016)				
Black × Wilson	-0.079***	-0.069***	-0.034***	-0.020**	-2.089***
	(0.012)	(0.009)	(0.010)	(0.008)	(0.443)
Year FEs	Y	Y	Y	Y	Y
Individual FEs		Y	Y	Y	Y
Black × Age bin FEs			Y	Y	Y
Observations	92,687	92,687	92,687	92,687	92,687

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the federal government. The unit of observation is the individual-year. The dependent variable is the (log) annual salary. The sample includes all civil servants that could be linked to the census and were serving in 1911, covering their careers between 1907–1921. Black is a dummy that is 1 if the civil servant's recorded race in the 1910 census is black, and 0 otherwise. Wilson is a dummy that is 1 for 1913 and after, and 0 otherwise. In this matched difference-in-differences, black and white civil servants are matched exactly based on sex, department, bureau, comparable age, salary and whether the position was paid per annum or not in 1911. Age bin fixed effects are constructed by dividing age into 10 equally sized bins (i.e. deciles). Column 4 is a dummy that is 1 if the position is paid per annum, and 0 otherwise. In column 5, the dependent variable is the percentile corresponding to the earnings of the civil servant in the Register data. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table III: Decomposition – Drivers of the increasing racial earnings gap

	(1)	(2)	(3)	(4)	(5)
	Log annual salary				
Mean of dep. var	6.765	6.763	6.760	6.774	6.774
Black × Wilson	-0.034***	-0.008	-0.004	-0.046***	-0.051***
	(0.010)	(0.008)	(0.008)	(0.017)	(0.017)
Year FEs	Y	Y	Y	Y	Y
Individual FEs	Y	Y	Y	Y	Y
Age bin FEs × Black	Y	Y	Y	Y	Y
Job title		Y			
Job title × Year FEs × Dept FEs			Y		
Education × Year FEs					Y
Sample	Full sample			HC sample	
Observations	92,687	89,805	86,965	38,271	38,271

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the federal government. The unit of observation is the individual-year. In columns 1-3, the sample includes all civil servants that could be linked to the census and were serving in 1911, covering their careers between 1907–1921. Black is a dummy that is 1 if the civil servant's recorded race in the 1910 census is black, and 0 otherwise. Wilson is a dummy that is 1 for 1913 and after, and 0 otherwise. In columns 4-5, the sample is restricted to those who could also be linked to the 1940 census to obtain human capital (HC) measures. Education × Year FEs are time-interacted fixed effects for each year of education. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table IV: Returns to education by race, around Woodrow Wilson's Presidency

	(1)	(2)	(3)	(4)
	Log annual salary			
Mean of dep. var	6.494	6.931	6.898	6.770
HC measure	0.031***	0.037***	0.037***	0.081***
	(0.004)	(0.001)	(0.001)	(0.004)
HC measure × Wilson	-0.007*	0.002*	0.002*	-0.023***
	(0.003)	(0.001)	(0.001)	(0.006)
Black × Wilson			0.076**	0.019
			(0.037)	(0.024)
HC measure × Black			-0.006	-0.016
			(0.004)	(0.015)
HC measure × Black × Wilson			-0.008**	-0.041**
			(0.004)	(0.018)
HC measure	Years of education			Tenure
Year FEs	Y	Y	Y	Y
Age bin FEs × Black	Y	Y	Y	Y
HC measure + HC measure × Black			0.030***	0.064***
			(0.003)	(0.014)
Sample	Black	White	Full sample	
Observations	11,048	132,110	143,158	54,000

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the federal government, broken down by measures of human capital. The unit of observation is the individual-year. Black is a dummy that is 1 if the civil servant is black according to the 1910 census. Wilson is a dummy that is 1 for 1913 and after. The sample includes all civil servants for whom human capital measures are available and serving in 1911, covering their careers between 1907-1921. In columns 1-3, the human capital measure is the years of education. In column 4, the human capital measure is the years of tenure, as measured by the years since the civil servant is first observed in the data. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table V: Home ownership gap by race, around Woodrow Wilson's Presidency

	(1)	(2)	(3)	(4)	(5)
	Home ownership				
Mean of dep. var	0.476	0.476	0.476	0.506	0.506
Black × Wilson	-0.050*	-0.141***	-0.143***	0.019	0.019
	(0.028)	(0.048)	(0.051)	(0.013)	(0.013)
Black × Wilson × Federal govt					-0.162***
					(0.049)
Census year FEs	Y	Y	Y	Y	Y
Individual FEs	Y	Y	Y	Y	Y
Black × Age bin FEs		Y	Y	Y	Y
State × Census year FEs			Y	Y	Y
Lower order interactions					Y
Sample	Federal government			Non-govt	Pooled
Observations	10,288	10,288	10,285	17,118,673	17,128,958

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap in home ownership. The unit of observation is the individual-year. The sample is based on those civil servants listed in the 1911 Official Registers who could be linked to the 1910 census and then followed throughout the time period 1900-1940. These black and white civil servants are then matched based on sex, department, bureau, age, salary, whether the position is per annum or not in 1911, the census occscore, and home ownership status in 1910. Black is a dummy that is 1 if the civil servant's recorded race in the 1910 census is black, and 0 otherwise. Wilson is adummy that is 1 for 1913 and after, and 0 otherwise. Federal govt is a dummy that is 1 if the individual is a civil servant from the Register sample, and 0 if the individual is a comparable non-government worker. Individuals in the non-government sample are reweighted to be comparable to their federal government counterparts based on state of residence, race, and occupational income score in 1910. Lower order interactions comprise: Federal govt × Census year FEs, Federal govt × Black × Age bin FEs and Federal govt × State × Census year FEs, so that the resulting triple differences in column 5 reflects the difference between the estimate in column 3 and column 4. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table VI: Intergenerational effects on years of completed education and earnings

	(1)	(2)	(3)	(4)	(5)
	Years of education			Log salary	Percentile
Mean of dep. var	13.08	11.64	11.64	7.109	69.80
Black	1.037	-1.255***			
	(0.718)	(0.238)			
Young × Black	-2.737***	-0.388	-0.388	0.009	-1.307
	(0.820)	(0.266)	(0.266)	(0.034)	(1.066)
Young × Black × Federal govt			-2.349***	-0.256**	-9.241**
			(0.787)	(0.118)	(3.886)
Age FEs	Y	Y	Y	Y	Y
County FEs	Y	Y	Y	Y	Y
Lower order interactions			Y	Y	Y
Sample	Govt	Non-Govt	Pooled sample		
Observations	4,425	2,208,416	2,212,841	2,212,841	2,212,841

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap for the children of black and white civil servants in 1940. The unit of observation is the individual. Black is a dummy that is 1 if the parent was black according to the 1910 census. Wilson is a dummy that is 1 for 1913 and after. Federal govt is a dummy that is 1 if the parent was a federal government worker and 0 if the parent was employed in the (private) non-government sector. The non-government sample is reweighted so that the parental characteristics are comparable to those of the federal government counterpart based on the state of residence, race, and occupational income score in 1910. In columns 1-3, the dependent variable is the years of education; in column 4, the dependent variable is the log annual salary; column 5 reports the percentile corresponding to the earned annual earnings. Lower order interactions are: Federal govt × County FEs, Federal govt × Age FEs, and Federal govt × Black, so that the triple difference in column 3 reflects the difference between Young × Black in column 1 and column 2. The standard errors are clustered at the parent-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Appendix

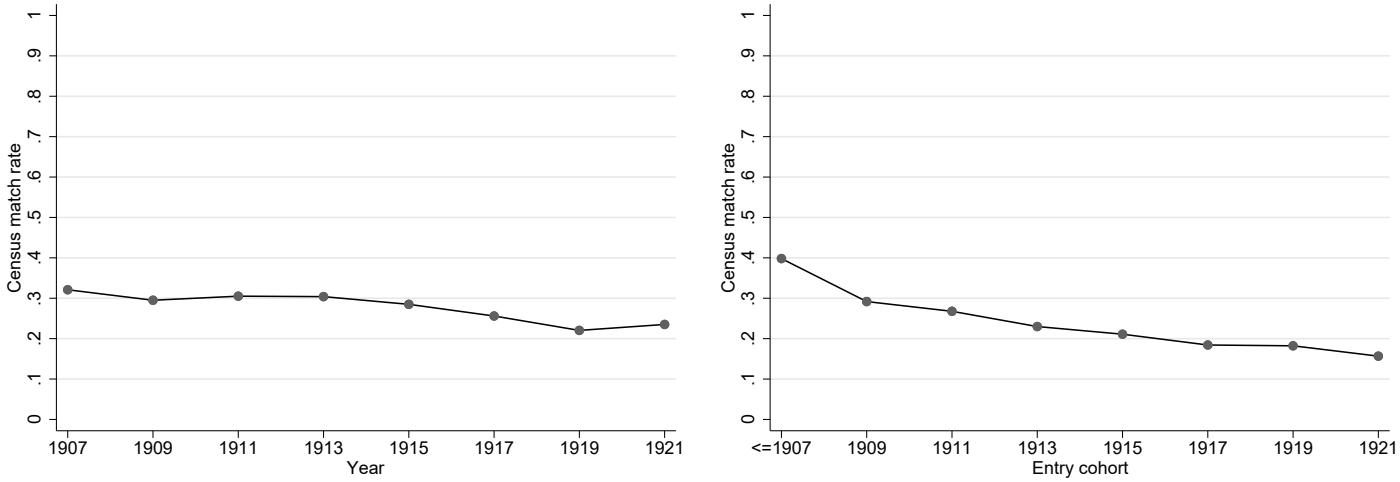
Figure AI: Distribution of occupational earnings score in 1910 by race and sector

Notes: The figure shows the distribution of the (log) occupational income scores from the 1910 full-count census. The vertical lines show the mean income scores for black and white individuals by sector. The public sector is defined as the Federal Government comprising the Postal Service (`ind1950` code 906) and Federal Public Administration (916). The private (non-federal government) sector comprises the complement. The dashed lines show the private sector means, and the solid lines show the public sector means.

Figure AII: Sample of the Official Registers 1913

Notes: The figure shows a sample of the Official Registers for the year 1913. Record highlighted in red is the example described in subsection 3.3.

Figure AIII: Match rates by Official Register year and civil servant entry cohort

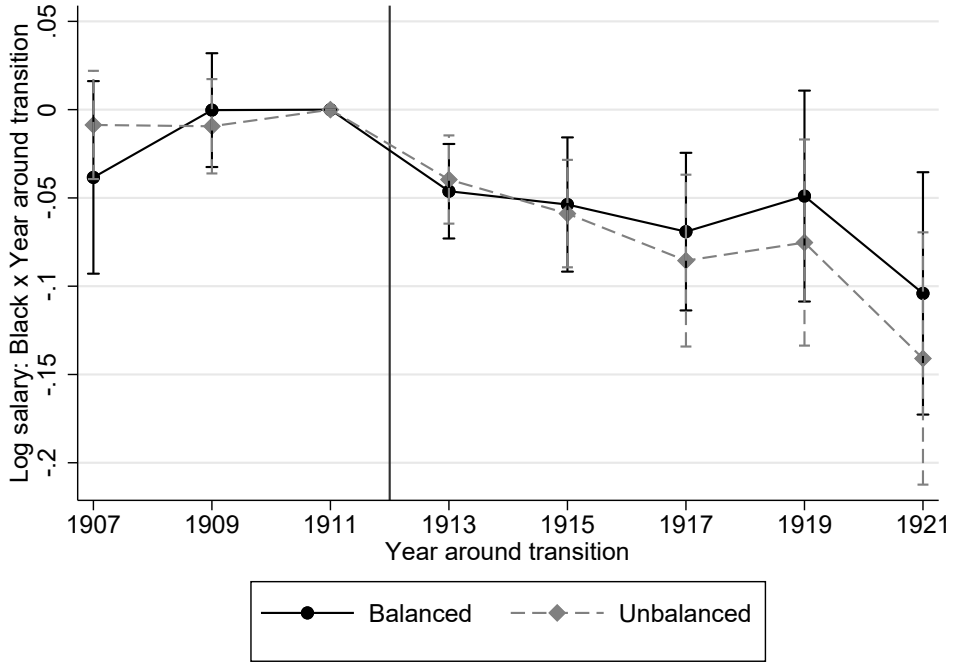


(a) By year

(b) By entry cohort

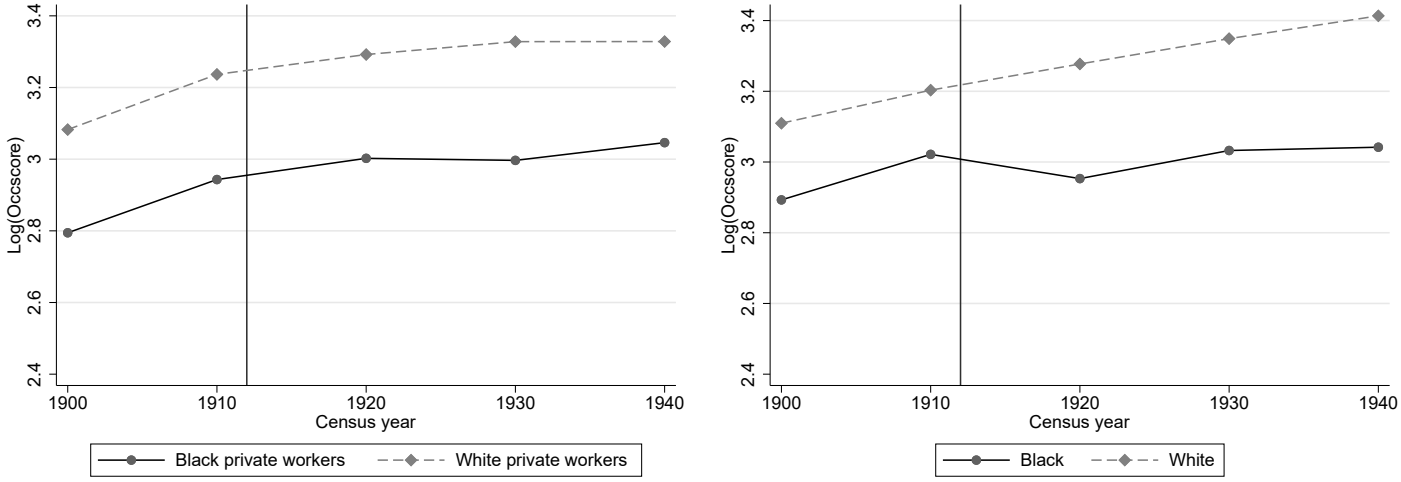
Notes: Figure shows the share of civil servants from the Official Register dataset who could be linked to the 1910 census. In the left panel (a), the match rate is shown broken down by each year (i.e., each Official Register volume). In the right panel (b), the match rate is shown broken down by the cohort of entry. The cohort of entry is defined as the earliest year a civil servant is observed in the Official Register dataset (with censoring occuring in 1907 at the beginning of the sample period).

Figure AIV: Heterogeneity by balanced vs. unbalanced sample



Notes: The figure shows the black vs. white (log) earnings gap for matched black civil servants around Woodrow Wilson's inauguration ($t = 1913$), broken down by whether the civil servant is observed throughout 1911-1921 (balanced) or not (unbalanced). Black and white civil servants are matched exactly based on sex, department, bureau, comparable age, salary and whether the position is paid per annum or not in 1911. The specification corresponds to the regression of Table II, column 3, except that we allow the Black $\times$ Wilson coefficient to vary by each time period. The solid vertical black line delineates the pre-transition from the post-transition period. The 95% confidence intervals reported are based on standard errors clustered at the individual-level.

Figure AV: (Log) occupational income score gap between black and white workers over time

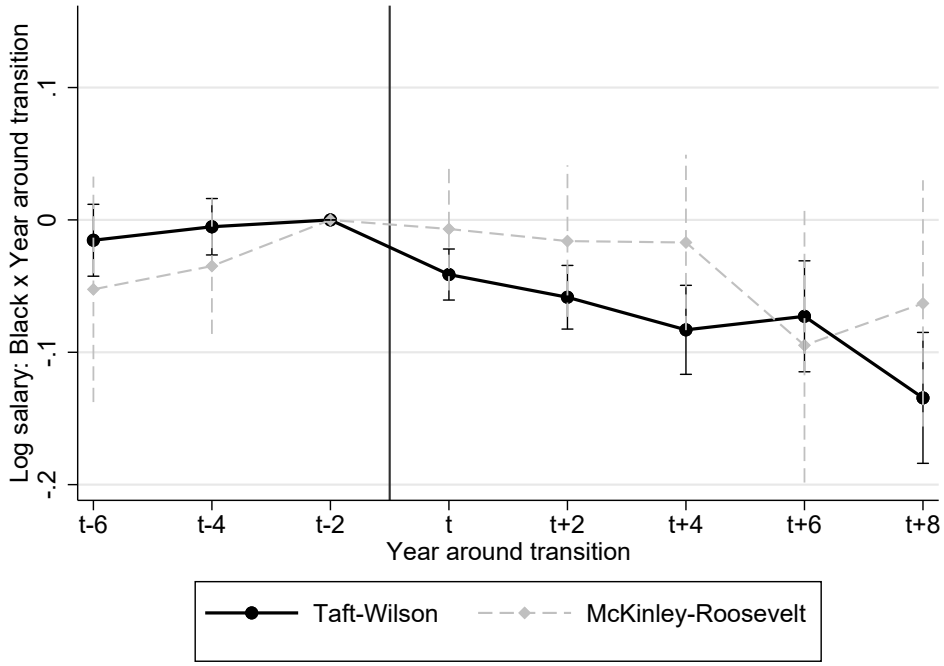


(a) Non-federal government

(b) Federal government

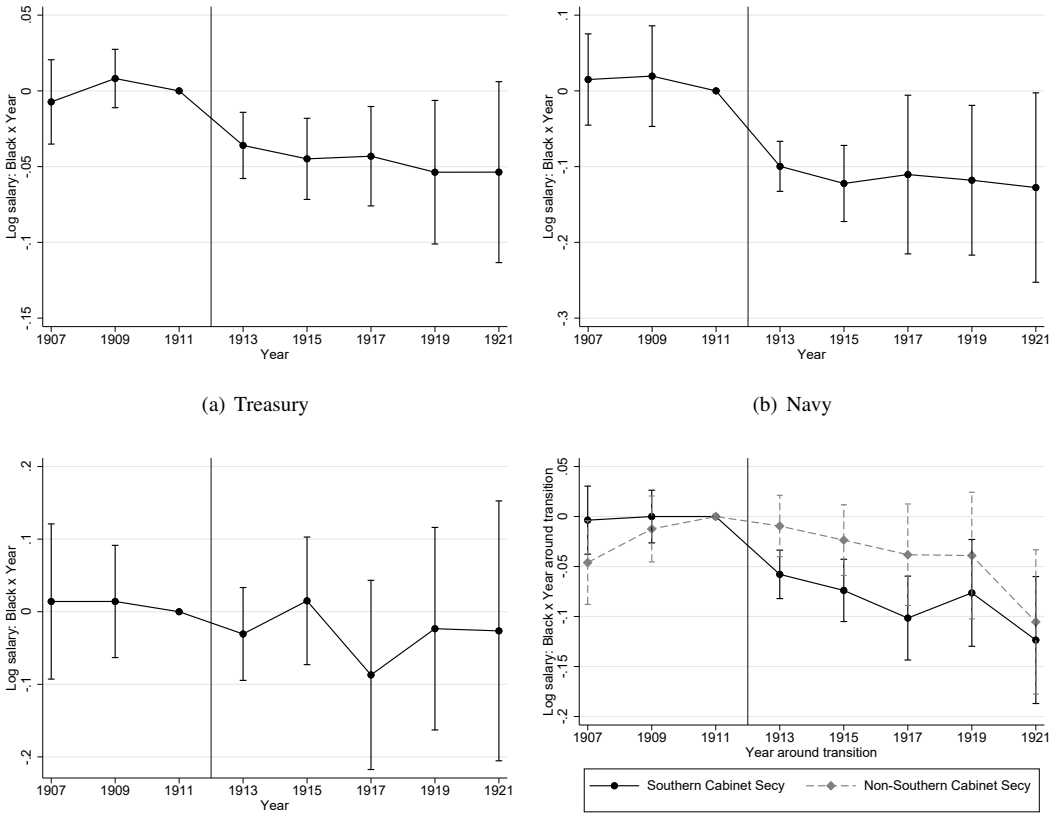
Notes: The figure shows the (log) occupational income score for a longitudinal sample of matched private sector workers (panel a) and census-linked civil servants (panel b) over time. Individuals are linked to the census years 1900-1940 using the cross-walk from the Census Linking Project (and thus only includes males). For the non-federal government sample, we restrict the sample to non-agricultural employment and reweight the sample to be representative of the civil servant sample based on state of residence, race, and the occupational income score in 1910. Solid line marks the inauguration of Woodrow Wilson.

Figure AVI: Racial earnings gap around transition to Wilson vs. Roosevelt



Notes: The figure shows the black vs. white (log) earnings gap for matched black and white civil servants around Woodrow Wilson's inauguration ($t = 1913$), covering the sample period 1907–1921 (solid black line). Black and white civil servants are matched exactly based on sex, department, bureau, age, salary, and whether the position is paid per annum or not in 1911. The specification corresponds to the regression of Table II, column 3, except that we allow the Black $\times$ Wilson coefficient to vary by each time period. As a comparison, the figure also shows the black vs. white (log) earnings gap around Theodore Roosevelt's transition ($t = 1903$) (dashed gray line). The specification used is the same as before, except that we now use the sample period 1897–1911 and match black and white civil servants exactly based on sex, department, bureau, age, salary, and whether the position is paid per annum or not in 1901. The solid vertical black line delineates the pre-transition from the post-transition period. Note that although Roosevelt was inaugurated in September 1901, the Official Registers record civil servants as of July. For Roosevelt, 1901 is thus the pre-period and 1903 the post-transition period. The 95% confidence intervals reported are based on standard errors clustered at the individual-level.

Figure AVII: Black-white earnings gap around Wilson's transition, by department



(a) Treasury

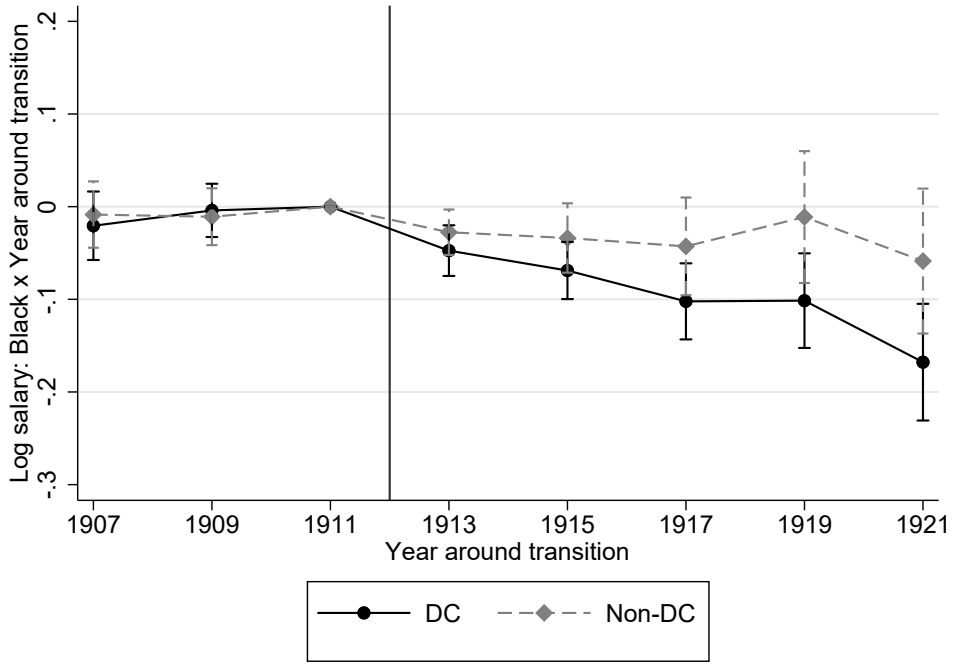
(b) Navy

(c) Agriculture

(d) South vs. Non-Southern Cabinet Secy

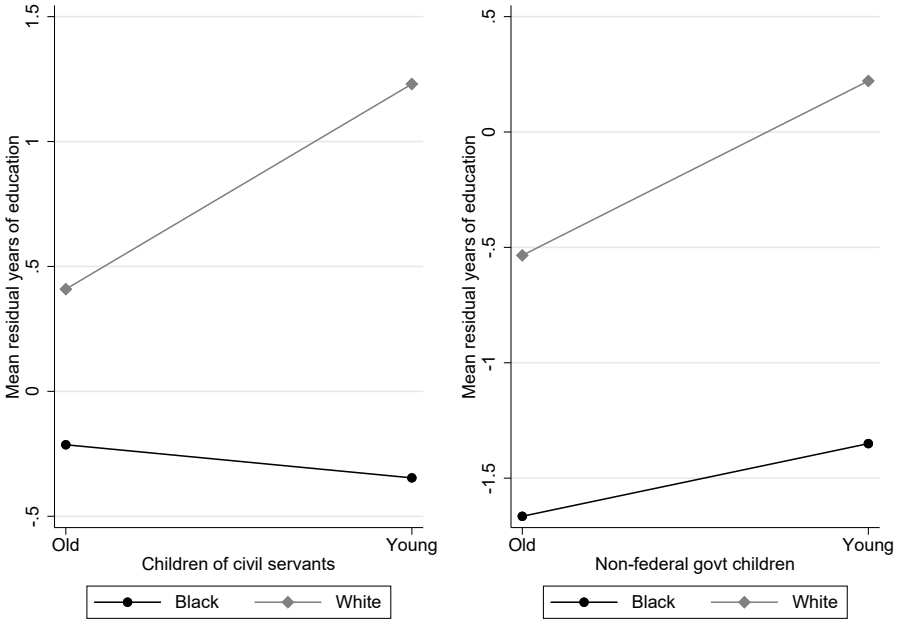
Notes: The figure shows the black vs. white (log) earnings gap for matched black civil servants around Woodrow Wilson's inauguration ($t = 1913$), broken down by Treasury (panel a), Navy (panel b), Agriculture (panel c) and whether the department is led by a Southern cabinet secretary or not (panel d). Black and white civil servants are matched exactly based on sex, department, bureau, age, salary, and whether the position is paid per annum or not in 1911. The solid vertical black line delineates the pre-transition from the post-transition period. The 95% confidence intervals reported are based on standard errors clustered at the individual-level.

Figure AVIII: Heterogeneity by DC vs. non-DC work location

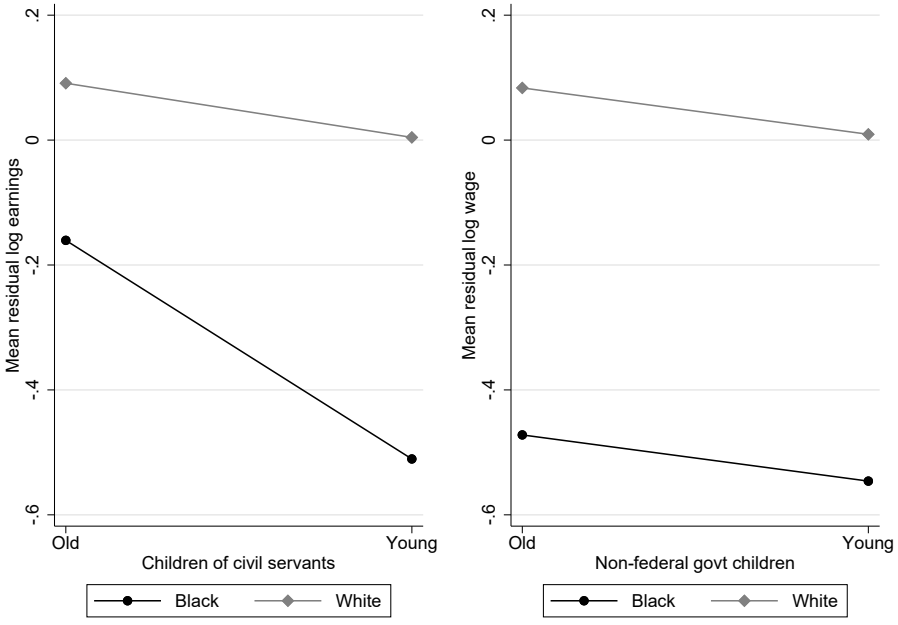


Notes: The figure shows the black vs. white (log) earnings gap for matched black civil servants around Woodrow Wilson's inauguration ($t = 1913$), broken down by whether the civil servant is employed in DC or not. Black and white civil servants are matched exactly based on sex, department, bureau, comparable age, salary, and whether the position is paid per annum or not in 1911. The specification corresponds to the regression of Table II, column 3, except that we allow the Black $\times$ Wilson coefficient to vary by each time period. The solid vertical black line delineates the pre-transition from the post-transition period. The 95% confidence intervals reported are based on standard errors clustered at the individual-level.

Figure AIX: Intergenerational effects – Residual means by race, age and sector



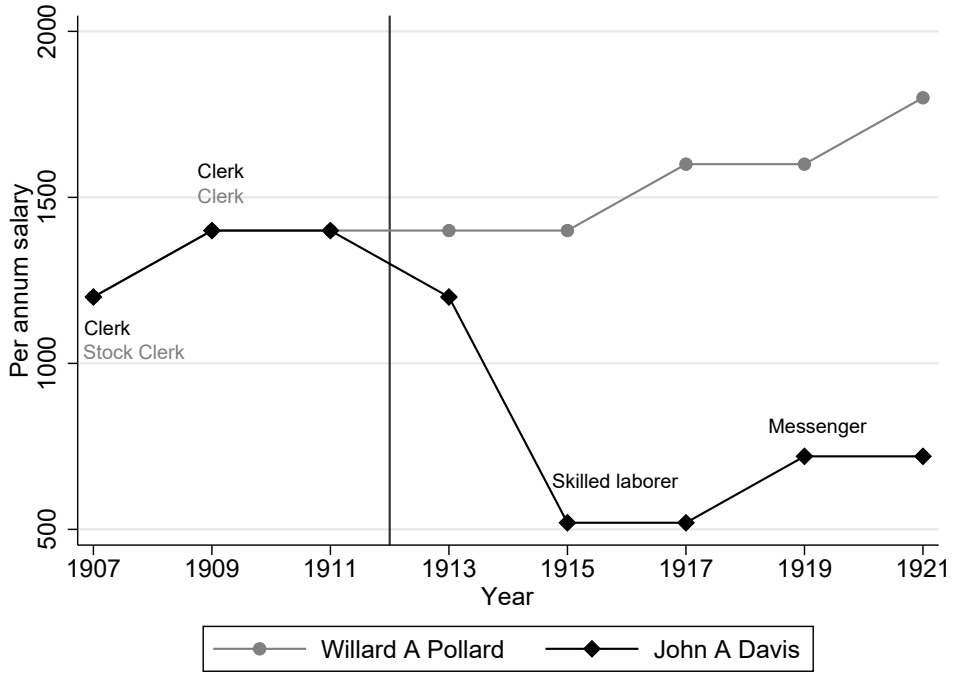
(a) Years of education



(b) Log(earnings) in 1940

Notes: The figure shows the (residualized) mean outcomes (schooling and earnings in 1940) of children of black and white civil servants vs. the mean outcomes for children of non-government sector parents that are comparable in terms of state of residence, race, and occupational income score in 1910. The residualized means are computed by partialing out county fixed effects. Old children are those who are above 18 in the 1910 census; young children are those who are below or equals to 18 in 1910.

Figure AX: Example of matching strategy – John A. Davis vs. Willard A. Pollard



Notes: The figure illustrates the matching strategy for the case of John A. Davis (black civil servant) and Willard A. Pollard (white civil servant). The career progression shown for both civil servants is based on actual data on salaries and job titles from the Official Registers. The solid line marks the year of Wilson's election and implementation of the segregation order.

Table AI: Descriptive statistics of civil servants vs. census population in 1910

	(1)	(2)	(3)	(4)	(5)
	Mean	Matched civil servants vs. unmatched			Total
	non-govt	All	White	Black	obs.
Log(occscore)	2.807	0.349***	0.291***	0.603***	30,943,099
		(0.003)	(0.003)	(0.011)	
Home ownership	0.466	-0.029***	-0.045***	0.078***	56,521,680
		(0.002)	(0.002)	(0.008)	
Female	0.480	-0.350***	-0.353***	-0.303***	58,874,889
		(0.002)	(0.001)	(0.007)	
Age in 1910	33.843	3.812***	3.655***	5.003***	58,874,889
		(0.060)	(0.062)	(0.219)	

Notes: Comparing mean characteristics of the census-linked civil servants to the average U.S. population aged 15-65 in 1910. The unit of observation is an individual. Column 1 reports the mean characteristics for the U.S. census population of 1910 (excluding the census-linked individuals). Column 2 shows the mean difference between the census-linked civil servants and the remainder of U.S. population. Columns 3-4 break down the mean difference for black and white individuals. Column 5 reports the total number of observations. Robust standard errors reported in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AII: Robustness check: Main result – Matching exactly on current state and job title

	(1)	(2)	(3)	(4)
		Log annual salary		
Mean of dep. var	6.765	6.731	6.737	6.721
Black × Wilson	-0.034***	-0.030***	-0.037***	-0.031**
	(0.010)	(0.011)	(0.011)	(0.014)
CEM	Baseline	+ Current state 1910	+ Job title 1911	+ Current state + Job title
Individual FEs	Y	Y	Y	Y
Year FEs	Y	Y	Y	Y
Age FEs × Black	Y	Y	Y	Y
Observations	92,687	47,070	59,275	31,887

Notes: This table shows the robustness of our main result to matching on the civil servants' state of residence in 1910 (from US census) and the job title in 1911 (from the Official Registers). Column 1 shows the baseline estimate which matches on sex, department, bureau, contract type (full-time or not), salary, and age. In column 2, we further match exactly on the state of residence in 1910. In column 3, we repeat the exercise by matching on the exact job title in 1911. In column 4, we match *both* exactly on the current state and the job title. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AIII: Robustness check: Main result – World War I and Great migration

	(1)	(2)	(3)	(4)	(5)	(6)
			Log annual salary			
Mean of dep. var	6.872	6.673	6.793	6.765	6.787	6.766
Black × Wilson	-0.036**	-0.048***	-0.021**	-0.033***	-0.035***	-0.033***
	(0.015)	(0.009)	(0.010)	(0.010)	(0.012)	(0.010)
County-level military × Wilson				0.003		
				(0.002)		
Δlog black pop change						0.127
						(0.082)
Sample	Balanced 1911-1921	Pre 1916	Drop navy & war dept	Full	Non-south	Full
Individual FEs	Y	Y	Y	Y	Y	Y
Year FEs	Y	Y	Y	Y	Y	Y
Age FEs × black	Y	Y	Y	Y	Y	Y
Observations	29,871	65,894	66,980	89,752	77,588	89,400

Notes: The table presents regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the federal government. In column 1, the sample is restricted to those civil servants that are continuously employed between 1911-1921. Column 2 restricts the sample to 1907-1915. In column 3, we exclude the Department of the Navy and Department of War. Column 4 controls for the county-level military employment (`ind1950=595`) in 1910 (per 100). Column 5 excludes the U.S. Southern States from the sample. Column 6 controls for the county-level (log) difference in the black population between 1920 and 1910. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AIV: The black-white earnings gap around Wilson's vs. Roosevelt's transition

	(1)	(2)	(3)
	Log annual salary		
Mean of dep. var	6.765	6.616	6.738
Black × New President	-0.034***	0.005	0.005
	(0.010)	(0.022)	(0.022)
Black × New President × Wilson			-0.040*
			(0.024)
Sample	1907-1921	1897-1921	Stacked
Transition	Taft to Wilson	McKinley to Roosevelt	event study
Individual FEs	Y	Y	Y
Year FEs	Y	Y	Y
Age bin FEs × black	Y	Y	Y
Lower order interactions			Y
Observations	92,687	20,162	112,849

Notes: The table compares the impact of Wilson's transition ($t = 1913$) on the racial earnings gap to the same impact by Roosevelt. In column 1, we report the main result capturing the impact of Wilson's segregation policy corresponding to Table II, Column 3. As a comparison, column 2 shows the black vs. white (log) earnings gap around Theodore Roosevelt's transition ($t = 1903$) (dashed gray line). The specification used is the same as before, except that we now use the sample period 1897–1911 and match black and white civil servants exactly based on sex, department, age, salary, and whether the position is paid per annum or not in 1901. Note that while Theodore Roosevelt was inaugurated in September 1901, the Official Registers record civil servants as of July. For Roosevelt, 1901 is thus the pre-period and 1903 the post-transition period. Lower order interactions are: Transition FEs (i.e., whether sample covers Taft to Wilson, column 1 or McKinley to Roosevelt, column 2) × Individual FEs, Transition FEs × Year FEs and Transition FEs × black × Age bin FEs, so that the triple difference in column 3 reflects the difference between in column 1 and column 2. The 95% confidence intervals reported are based on standard errors clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AV: Black-white occscore gap around Wilson's Presidency for civil servants and the private sector

	(1)	(2)	(3)	(4)	(5)
	Log occupational income score				
Mean of dep. var	3.115	3.113	3.113	3.223	3.223
Black	-0.027**				
	(0.013)				
Black × Wilson	-0.109***	-0.082**	-0.184***	0.002	0.002
	(0.026)	(0.033)	(0.056)	(0.015)	(0.015)
Black × Wilson × Federal govt					-0.186***
					(0.053)
Year FEs	Y	Y	Y	Y	Y
Individual FEs		Y	Y	Y	Y
Age bin FEs × Black			Y	Y	Y
Lower order interactions					Y
Sample	Federal government			Non-govt	Pooled
Observations	5,643	4,446	4,446	13,368,822	13,373,268

Notes: The table presents regression estimates of the impact of Wilson's segregation policy on the racial earnings gap, as measured by the (log) occupational income score, within the federal government. The unit of observation is the individual-census year. The sample includes all civil servants that were matched and serving in 1911, covering their careers between 1900-1940. Individuals are linked across census rounds using the cross-walk provided by the Census Linking Project. Black is a dummy that is 1 if the civil servant is black according to the 1910 census. Wilson is a dummy that is 1 for the census year 1920 and after. The private sector control group is reweighted to be comparable to the census-linked civil servants based on their state of residence, race, and occupational income score in 1910, and likewise linked across census rounds using the Census Linking Project's crosswalk. Lower order interactions are: Federal govt × Black, Federal govt × Year FEs, Federal govt × Age bin FEs × Black, so that the triple differences in column 5 reflects the difference between column 3 and column 4. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AVI: Descriptive statistics of census-linked and matched civil servants in 1901

	(1) Population mean	(2) Census-linked mean	(3) Black-White difference	(4) Matched sample mean	(5) Black-White difference
Log(salary)	6.434	6.544	-0.367***	6.456	-0.008
			(0.023)		(0.031)
Paid per annum	0.504	0.591	-0.006	0.442	0.000
			(0.017)		(0.023)
Paid per month	0.142	0.117	-0.028***	0.089	0.004
			(0.010)		(0.011)
Paid per day	0.323	0.258	0.029*	0.421	-0.004
			(0.016)		(0.021)
Female	-	0.166	0.093***	0.178	0.000
			(0.015)		(0.021)
Age in 1900	-	38.04	-2.048***	35.87	0.284
			(0.447)		(0.605)
Observations 1901	96,042	18,811		6,428	
- of which black	-	996		687	
Total obs. 1897-1911	543,451	97,483		21,864	

Notes: The table compares the census-linked and coarsened exact matched civil servants in 1901. The unit of observation is an individual-year, and the time period is 1897-1911. Column 1 reports the mean characteristics of the full population based on the digitized Official Registers, as well as the total number of observations and the number of observations corresponding to 1901. Column 2 reports the mean characteristics for the subset of the Official Register individuals serving in 1901 that could be matched to the 1900 census based on the full name, current state of residence, and state of birth. Column 3 reports the mean difference within the census-linked sample between black and white civil servants. In Column 4, we report the mean characteristics of the matched sample where black civil servants are matched to white counterparts based on sex, department, age, salary, and whether the position is paid per annum or not in 1901. Column 5 reports the mean difference in the coarsely exact matched sample. Robust standard errors are computed for Columns 3 and 5. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AVII: Impact of Woodrow Wilson's segregation regime - By alignment at entry

	(1)	(2)	(3)
	Log annual salary		
Mean of dep. var	6.790	6.790	6.799
Black × Wilson	-0.028**	-0.027**	-0.036***
	(0.011)	(0.011)	(0.011)
Democratic cong. district at appt × Wilson		-0.002	0.011
		(0.013)	(0.015)
Year FEs	Y	Y	Y
Individual FEs	Y	Y	Y
State × Year FEs			Y
Observations	69,716	69,716	62,658

Notes: The table presents regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the federal government. The unit of observation is the individual-year. The sample includes all civil servants that were matched and serving in 1911, covering their careers between 1907-1921. Democratic cong. district at appointment is a dummy that is 1 if the congress member of the civil servant's district of appointment was a Democrat in the year the civil servant entered the federal government, and 0 otherwise. The sample is restricted to those individuals for which we have non-missing data on the congressional district of appointment. All salaries are annualized. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AVIII: Heterogeneity by Southern vs. non-Southern led cabinet and geography

	(1)	(2)	(3)	(4)
	Log annual salary			
Mean of dep. var	6.765	6.750	6.765	6.765
Black × Wilson	-0.034***	-0.005	-0.025*	-0.035***
	(0.020)	(0.016)	(0.013)	(0.012)
Black × Wilson × Southern Secy		-0.048**		
		(0.023)		
Black × Wilson × DC			-0.011	
			(0.019)	
Black × Wilson × US South				-0.002
				(0.020)
Year FEs	Y	Y	Y	Y
Individual FEs	Y	Y	Y	Y
black × Age FEs	Y	Y	Y	Y
Lower order interactions		Y	Y	Y
Observations	92,360	76,717	91,875	92,349

Notes: The table tests whether the effect of the segregation policy (as captured by Black × Wilson) varies significantly across departments and geography. Column 1 reports the baseline estimate, corresponding to Table II, column 3. In column 2, we use a triple difference to test whether the segregation effect is stronger in departments headed by a Southern cabinet secretary. In column 3, we test whether the effect varies significantly by whether the civil servant is employed in Washington, D.C. or not. In Column 4, we test whether the effect varies significantly by whether the civil servant is employed in the southern states or not. In columns 2-4, we include lower order interactions (e.g. Black × Southern Secy, Wilson × Southern Secy etc.) but do not report the estimates for brevity. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AIX: Reallocation, entry and exit, by Southern vs. Non-Southern Cabinet Secretary

Panel A: Entry margin	(1)	(2)	(3)	(4)
		Black civil service entrant		
Mean of dep. var	0.0818	0.0868	0.0691	0.0792
Log(salary)	-0.052***	-0.053***	-0.055***	
	(0.002)	(0.002)	(0.003)	
Log(salary) × Wilson	-0.037***	-0.047***	-0.030***	
	(0.003)	(0.004)	(0.004)	
Log(salary) × Wilson × Southern Secy				-0.019***
				(0.006)
Year FEs	Y	Y	Y	Y
Lower order interactions				Y
Sample	Full	Southern	Non-southern	Full
Observations	153,743	79,501	58,791	138,292
Panel B: Exit margin	(1)	(2)	(3)	(4)
		Exit from the civil service		
Mean of dep. var	0.329	0.307	0.380	0.336
Black	0.849***	0.408***	1.079***	
	(0.060)	(0.089)	(0.101)	
Black × Wilson	-1.226***	-1.261***	-1.322***	
	(0.077)	(0.114)	(0.131)	
Log(salary) × Black	-0.136***	-0.066***	-0.166***	
	(0.009)	(0.014)	(0.016)	
Log(salary) × Wilson	-0.118***	-0.114***	-0.136***	
	(0.002)	(0.003)	(0.004)	
Log(salary) × Wilson × Black	0.184***	0.191***	0.197***	
	(0.012)	(0.018)	(0.020)	
Log(salary) × Wilson × Black × Southern Secy				0.001
				(0.002)
Year FEs	Y	Y	Y	Y
Lower order interactions				Y
Sample	Full	Southern	Non-southern	Full
Observations	296,452	157,355	107,030	264,385

Notes: The unit of observation is the individual-year. Panel A tests whether black civil servants are more or less likely to enter at higher payscales after Wilson assumed office. The dependent variable is a dummy that is 1 if the civil servant is black according to the 1910 census. The sample is restricted to entrants between 1909-1921. The regression in column 1 corresponds to Figure IV, Panel (a). In columns 2-3, we split the sample by whether the entrant is employed in a department headed by a Southern Cabinet secretary or not. Column 4 provides the triple difference to test whether the effect varies significantly across Southern vs. Non-Southern Cabinet secretary departments. Panel B tests whether black civil servants are more or less likely to exit at higher payscales after Wilson assumed office. The dependent variable is a dummy that is 1 if the civil servant exited the civil service. The sample is restricted to entrants between 1907-1919. The regression in column 2 corresponds to Figure IV, Panel (b). Once again, columns 2-3 split the sample by whether the individual is employed in a department headed by a Southern Cabinet secretary or not. Column 4 shows the corresponding triple difference. Lower order interactions comprise all lower order Southern Secy-interactions so that the triple (quadruple) differences in column 4 reflects the difference between the double (triple) difference between column and column 3. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AX: Descriptive statistics – Measures of human capital by race

	(1)	(2)	(3)	(4)
	Non-black		Diff Black - Non-black	
	Mean	SD	Raw	CEM
Years of education	10.924	4.168	-2.971***	-1.753***
			(0.144)	(0.208)
College	0.171	0.376	-0.100***	-0.023
			(0.010)	(0.017)
High school	0.419	0.429	-0.112***	-0.060***
			(0.010)	(0.015)
Elementary	0.142	0.349	0.238***	0.190***
			(0.013)	(0.018)
Observations	39,219		15,943	9,004

Notes: The table provides descriptive statistics for civil servants from the Official Registers, comparing the mean education levels across black and white civil servants. The sample is restricted to those civil servants working in 1911 who could be linked to the 1940 census to obtain the schooling measure. The matched sample (column 3) is based on matching on sex, department, bureau, salary, age, and whether the pay is per annum or not in 1911. In column 4, civil servants are also exactly matched on the years of education. The variable elementary is defined as 3-7 years of schooling; the variable high school is defined as 11-14 years and college is defined as 15 or more years of schooling. Robust standard errors. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AXI: Home ownership effects with and without reweighting

	(1)	(2)
	Probability of home ownership	
Mean of dep. var	0.506	0.506
Black × Wilson	0.045***	0.019
	(0.002)	(0.013)
Black × Wilson × Federal govt	-0.189***	-0.162***
	(0.045)	(0.049)
State FEs × Census year FEs	Y	Y
Individual FEs	Y	Y
Black × Age bin FEs	Y	Y
Lower order interactions	Y	Y
Reweighted		Y
Sample	Federal + Non-govt sample	
Observations	17,128,958	17,128,958

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap in home ownership, both with and without reweighting. Individuals in the non-government sample are reweighted to be comparable to their federal government counterparts based on state of residence, race, and occupational income score in 1910. Lower order interactions comprise: Federal govt × Black, Federal govt × State FEs × Census year FEs, and Federal govt × Black × Age bin FEs. The standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AXII: Intergenerational effects with and without reweighting

	(1)	(2)	(3)	(4)	(5)	(6)
	Education		Log salary		Pctile	
Mean of dep. var	11.64	11.64	7.109	7.109	69.80	69.80
Black × Young	-0.112***	-0.388	0.021**	0.009	-0.312	-1.307
	(0.041)	(0.266)	(0.009)	(0.034)	(0.269)	(1.066)
Black × Young × Federal govt	-2.400***	-2.349***	-0.198*	-0.256**	-7.989**	-9.241**
	(0.725)	(0.787)	(0.114)	(0.118)	(3.738)	(3.886)
Age FEs	Y	Y	Y	Y	Y	Y
County FEs	Y	Y	Y	Y	Y	Y
Lower order interactions	Y	Y	Y	Y	Y	Y
Reweighted		Y		Y		Y
Observations	2,212,841	2,212,841	2,212,841	2,212,841	2,212,841	2,212,841

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap for the children of black and white civil servants in 1940, with and without reweighting. The non-government sample is reweighted so that the parental characteristics are comparable to those of the federal government counterpart based on the state of residence, race, and occupational income score in 1910. Lower order interactions are: Federal govt × County FEs, Federal govt × Age FEs, and Federal govt × Black The standard errors are clustered at the parent-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table AXIII: Intergenerational results – within state and parental household controls

Panel A: Within state	(1)	(2)	(3)	(4)	(5)	(6)
	Education		Log salary		Pctile	
Mean of dep. var	11.64	11.64	7.109	7.109	69.80	69.81
Black × Young	-0.388		0.009		-1.307	
	(0.266)		(0.034)		(1.066)	
Black × Young × Federal govt	-2.349***	-2.180***	-0.256**	-0.257**	-9.241**	-9.222**
	(0.787)	(0.799)	(0.118)	(0.119)	(3.886)	(3.937)
Age FEs	Y	Y	Y	Y	Y	Y
County FEs	Y	Y	Y	Y	Y	Y
Lower order interactions	Y	Y	Y	Y	Y	Y
State FEs × Young × black		Y		Y		Y
Observations	2,212,841	2,212,840	2,212,841	2,212,840	2,212,841	2,212,840
Panel B: Parental controls	(1)	(2)	(3)	(4)	(5)	(6)
	Education		Log salary		Income percentile	
Mean of dep. var	11.64	11.64	7.109	7.109	69.81	69.81
Black × Young	-0.388	-0.358	0.009	0.012	-1.307	-1.240
	(0.267)	(0.261)	(0.034)	(0.034)	(1.070)	(1.067)
Black × Young × Federal govt	-2.349***	-2.248***	-0.256**	-0.246**	-9.242**	-9.139**
	(0.787)	(0.802)	(0.118)	(0.118)	(3.887)	(3.915)
Age FEs	Y	Y	Y	Y	Y	Y
County FEs	Y	Y	Y	Y	Y	Y
Lower order interactions	Y	Y	Y	Y	Y	Y
Parental household controls		Y		Y		Y
Observations	2,212,810	2,212,810	2,212,810	2,212,810	2,212,810	2,212,810

Notes: The table shows regression estimates of the impact of Wilson's segregation policy on the racial earnings gap for the children of black and white civil servants in 1940. The unit of observation is the individual. Panel A includes State × young × Black FEs to restrict the comparison to only children from the same state. Panel B reports the results with parental controls (sex and age of parent, and parental household size in 1910). Lower order interactions are: Federal govt × County FEs, Federal govt × Age FEs, and Federal govt × black. The standard errors are clustered at the parent-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

A Historical Appendix

A.1 Historical Backdrop: Black Americans in the Federal Government

In the years after the Civil War ended and before Woodrow Wilson took office, black Americans' presence within federal government employment increased substantially. One potential reason for black Americans' improved prospects within government may have been the Pendleton Civil Service Act of 1883, which gradually removed the practice of patronage in the appointment process and made many jobs subject to competitive civil service exams. Indeed the Civil Service Commission (CSC), which administered the Pendleton Act, sought to ensure that qualified black applicants were given proper consideration (MacLaury, 2014). The CSC also promoted fair treatment after hiring, leading several black civil servants to achieve managerial and professional positions within the government. The relative absence of discriminatory treatment toward black Americans was documented in the Commission's 1891 annual report, which included a section "Benefit to the Colored Race." In this sub-report, the Commission proclaimed the "elimination not only of the questions of politics and religion but the question of race," and that a fair proportion of the men appointed from these States has been colored." Notably absent from the Commission's report was any mention that black American employees should be assigned to special tasks or segregated physically.

By 1912, when Wilson was elected, the federal government was the largest employer of black Americans in the nation. In short, the (relatively) color-blind civil service test offered black civil servants a way to demonstrate their merit and compete on an even playing field with white applicants for jobs (Keane, 2013). Soon after Wilson was elected, however, he sanctioned a policy of segregation throughout the federal government. At an early cabinet meeting, cabinet members such as Albert Burleson (Postmaster General), William McAdoo (Secretary of the Treasury), and Josephus Daniels (Secretary of the Navy) advocated for segregated workplaces to address the alleged friction between black and white federal employees. Despite his campaign promises for racial fairness, Wilson ultimately favored segregation. Historical correspondence suggests that he shared the belief, widespread among white Americans at the time, that black Americans were racially distinct from and inferior to white people. Furthermore, Wilson also needed the support of Southern Democrats, who were uninterested in pursuing a goal of racial justice.[53]

[53] Yellin (2013) perceptively reveals the compatibility of progressive reform with racial prejudice, and explains how white Democrats, such as Wilson, his cabinet, and his lower-level appointees, turned the language of progressivism and good government against black Americans.

A.2 What Segregation Entailed in Practice

The Wilson Administration allowed white supremacists in the Democratic Party to institutionalize segregation and relegate black Americans to low-paying, low-prestige jobs. Related historical literature indicates that segregation was carried out in a decentralized manner (Wolgemuth, 1959; Hyatt, 1978). Wilson empowered his high-ranking appointees to Cabinet departments to carry out a broad program of racial discrimination that included the physical separation of black and white workers, and by extension, the demotions/dismissals of black workers. Secretary of the Treasury William Gibbs McAdoo (Wilson's son-in-law) and Postmaster General Albert S. Burleson were particularly strong proponents of segregation, likely reflecting their backgrounds as southern segregatationists with hostilities toward black Americans. With regard to the spatial aspects of this discriminatory regime, there are numerous such examples of physical separations that took place within government offices. The Treasury Department, for example, set up physical partitions in offices so that white and black employees would not be able to interact with one another (MacLaury, 2014). Assistant secretary James Skelton Williams (at the behest of (Secretary William McAdoo) instructed supervisors to erect signs banning integrated lunchrooms and restrooms (Yellin, 2007).

Federal segregation was not merely the creation of "separate by equal" workplace facilities, though. Rather, high-ranking administrators within government discriminated against black Americans with President Wilson's endorsement, using demotions of black Americans to carry out the separation of black and white workers into different work spaces. Within the Treasury Department William McAdoo ordered that all black clerks be reassigned to one office (the Registry Division), and were excluded from employment in other bureaus (Yellin, 2007). McAdoo reportedly dismissed all black political appointees in the South, and gave southern supervisors the authority to fire or downgrade any black civil servants. The consequences for black appointees were severe: within the Treasury, for example, 31 federal patronage positions were held by blacks at the beginning of the Wilson administration, but only 6 remained by 1916, according (Dennis, 2002).[54]

During the segregation era, the Wilson administration also implemented explicit policies that worked to diminish the standing of black Americans within the federal workforce. While there was no official change in the merit-based hiring policy of the federal service, beginning in May 1914 the Civil Service Commission required that photographs be attached to all job applications (MacLaury, 2014). Such a policy made it easier to discriminate against black candidates, and may contribute to the worsening of black Americans' position within the

[54]Historians have provided many other anecdotal examples of black civil servants suffering downgrades to lower-paying jobs as well as and outright termination. (Yellin, 2013), for example, writes about how the recorder of deeds – a clerk making $1,200 a year – was suddenly reduced to a position as a laborer earning $500 a year (Keene, 2013).

government at the point of entry, as we observe in Figure IV, Panel A. In short, the administration's sanctioning and promotion of the segregation effort is best seen as a system of spatial segregation that left black federal employees with "few chances for pay raises or promotions, and in many cases experienced pay reductions and demotions" (Yellin, 2007).

As an example of how segregation was carried out, and how it worked to create lasting economic damage, we discuss the case of a black federal employee at the time that Wilson came to office, John A. Davis. Davis was born in 1863 in Washington, D.C. to a white lawyer and black housekeeper. He graduated top of his class from Washington's M Street High School and passed the civil service exam aged 19 to join the Government Printing Office (GPO), where he worked for several decades.[55] John Davis started as a laborer in D.C., and progressed to clerical and finally mid-level management positions. His relative wealth within the black community was reflected in the fact that he owned a farm in Virginia in addition to a home in D.C.

As we can observe, our Registers data matches this narrative well.[56] We find that John A. Davis was serving as a clerk in the GPO from the beginning of our sample in 1907. In 1911, the last round of our data before Wilson's term, John was making $1,400 per year – a good salary that puts him at the 75th percentile of the full-time annual salaries paid in the 1911 federal civil service.

His fortunes changed with segregation. After Wilson assumed office in March 1913, the July 1913 round of the Register data records John's salary at $1,300, reflecting a demotion. In 1915, John was further demoted to the position of a "skilled laborer," now earning a part-time salary of 25 cents per hour, or $520 per annum when converted to an annual salary.[57] In 1919, we find him in the War department working as a messenger for $720 – half of what he earned *a decade earlier*. He would remain at that salary until 1921, our last round of data. He was forced to auction off the family farm in 1914 and died in 1928 aged 65.

By way of example, we can use our matching criteria to identify an exact match for John A. Davis in the Registers-based personnel records. Willard A. Pollard was also born in Washington, D.C., only two years after Davis. In 1911, the year in which we perform our matching, Pollard likewise worked in the GPO, held the same job title (clerk), and earned the exact same salary $1,400, suggesting that both must have been colleagues of equal rank. Importantly, as Figure AX shows, both Davis and Pollard progressed in lock-step, earning the same salaries in 1907-1909. Using 1911 characteristics, we thus obtained balance not only on covariates unobserved in the Register data (age) but also their "pre-trend," as captured by their salary progression prior to 1911.

[55] This account is drawn from the NY Times op-ed "What Woodrow Wilson Cost My Grandfather", by Gordon J. Davis, Nov. 24, 2015, from https://www.nytimes.com/2015/11/24/opinion/what-woodrow-wilson-cost-my-grandfather.html.

[56] See Appendix Figure AII for the actual data entry in 1913.

[57] As discussed in subsection 3.3, this assumes an 8-hour workday, 5 days per week and 12 months in a year.

As we see, however, the careers of John and Willard, however, diverged during Wilson's administration. Unlike Davis, Pollard's career continued to progress after Wilson assumed office. Pollard received a raise in 1917, earning $1,600 – more than three times as much as his former colleague Davis. In 1921, the last data point, we see Pollard receiving another raise, earning $1,800. This puts Pollard at the 75th percentile of the full-time salary distribution in 1921. Davis, in contrast, fell to the 10th percentile. Pollard dies in 1950, aged 85. As the example demonstrates, Wilson's policy spatial segregation had clear economic consequences by imposing a ceiling on black mobility within the federal government.

Overall, there was little formal recourse of black Americans adversely affected by demotions under Wilson's segregation. To the extent that black American could seek to reverse the consequences, they relied on internal complaint procedures. Yellin (2013) writes of demoted black civil servants who appealed such decisions to their superiors (bureau heads), but were typically rebuffed or ignored. One reason that segregation may have persisted was that the Supreme Court had legally sanctioned "separate-but-equal" policies at the end of the 19th century with the famous case *Plessy v. Ferguson*. The lack of responsiveness within the federal government to allegations of discrimination led black civil servants to seek recourse through political channels. In a famous meeting between Wilson and journalist/civil rights activist William Monroe Trotter, the editor of the Boston Guardian (a Boston newspaper dedicated to the fight against racial discrimination), Trotter directly challenged the President for permitting the segregation of black and white government clerks. He also dismissed President Wilson's effiency-based defense of segregation as the best approach to avoid "racial friction" (reportedly leading Wilson to lose his temper). Newspapers nationwide – including *The New York Times*, carried on their front pages stories of Wilson's defensiveness, and noted Trotter's ejection from the White House. Some papers, such as *The New Republic* criticized Wilson for his "inaction in a moral crisis." *The Nation* called segregation "a sad blot upon the Wilson Administration." Trotter and the National Independent Political League (NIPL) in 1913 led a signature campaign to protest and overturn segregation within the government. Ultimately 20,000 people from 36 states signed the petition which demanded that Wilson "reverse, prevent, and forbid any such movement by your bureau chiefs, in accord with your promise of fair, friendly, just, and Christian treatment of your [Black] fellow citizens" (Patler, 2004). Similarly, the D.C. branch of the NAACP lobbied aggressively for the hire of Black federal employees in the government (and who had been dismissed from service), as well as for the improved treatement of those who had already been demoted.[58] These efforts were largely unsuccessful.

[58]The branch president Archibald Grimke, though, recognized that Black Americans had little recourse to ameliorate their conditions within the federal government Patler (2004).