THE COSTS OF EMPLOYMENT SEGREGATION:
EVIDENCE FROM THE FEDERAL GOVERNMENT UNDER WILSON

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## ABSTRACT

We link personnel records of the federal civil service to census data for 1907-1921 to study the segregation of the civil service by race under President Woodrow Wilson. Using a difference-in-differences design to compare the black-white wage gap around Wilson's presidential transition, we find that the introduction of employment segregation increased the black wage penalty by 7 percentage points. This gap increases over time and is driven by a reallocation of already-serving black civil servants to lower paid positions. Our results thus document significant costs borne by minorities during a unique episode of state-sanctioned discrimination.

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# 1   Introduction

Discrimination against racial minorities persists across the globe in virtually every domain of social and economic life – including employment, housing, and protection from crime and abuse. Unequal treatment in labor, consumer, and other marketplaces is not only harmful to the minority outgroup, though. Discrimination is also thought to be detrimental to aggregate economic growth and social cohesion, potentially hampering development (Hsieh et al., 2019).

Nations of both the developed and developing world have in turn implemented an array of policies to respond to the persistence of ethnic disparities in socioeconomic status. Countries have expanded constitutional protections of civil rights and strengthened antidiscrimination laws to limit the pernicious effects of disparate treatment (Chilton and Vesteeg, 2016; Donohue and Heckman, 1991; Collins, 2003; Minkler and Prakash, 2017). Many have also gone a step further by enacting group-based entitlements to remedy the persistent, deleterious effects of historical discrimination. For example, quota-based remedies provide set-asides for minorities within schools, political office, employment, and other public institutions. Similarly, affirmative action programs provide for the preferential treatment of minorities within hiring and school enrollment (Miller, 2017).[1] A large body of literature has in turn documented the impacts of policies aimed at reducing inequality and remedying the effect of historical discrimination (Pande, 2003; Chattopadhyay and Duflo, 2004).

Much less is known, though, about how state action *exacerbates* racial and ethnic inequality.[2] The dearth of evidence on the government's role in perpetuating racial disparities is surprising, since the path to equality is often non-linear. The nature of liberal democracy, for example, leaves open the possibility that once in power, an ethnic majority will pursue policies that preserve majority dominance – and minorities may not have the political power to prevent adverse effects. To the extent that such policies - even if implemented temporarily - have lasting effects, documenting the impacts of discriminatory policies is crucial for understanding the roots of economic disparities that persist even today. For example, quantifying the precise effect of state discrimination may help when it comes to designing measures to alleviate or compensate for past minority abuse.

In this study, we assess the impact of one of the modern era's most far-reaching episodes of deliberate racial separation policy – the impact of Woodrow Wilson's decision to segregate the US government on racial earnings inequality. In 1913, US President Wilson issued a policy directive to segregate black and white civil servants across the federal bureaucracy. The order was carried out by Cabinet departments

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[1]India and the United States are perhaps most famous for various race-conscious remedies to economic inequality, although many other countries also continue to pursue policy regimes that promote the advancement of social minorities.

[2]There are a few exceptions. Naidu (2012) studies the impact of Jim Crow disenfranchisement on the distribution of wealth across landowning white and landless black Americans. Huber et al. (2020) study how the removal of Jewish managers in Nazi Germany affected large firms.

– most aggressively by the federal Post Office and the Treasury Department where the vast majority of black civil servants worked. Unlike many policies of the "Jim Crow" era – which were facially race-neutral but discriminatory in effect – the policy of federal segregation was race-conscious and discriminatory on its face. Wilson's segregation directive was designed to limit the access of black civil servants to white-collar positions via both demotions and the failure to hire qualified black candidates. The policy of Jim Crow segregation within the federal government may have had negative effects on black civil servants' economic well-being (Yellin, 2013). Whether the segregation policy was costly for black civil servants – as well as how much and for how long – remains unknown to this day.

To quantify the effect of the segregation policy, we use coarse exact matching to identify for each black civil servant a white counterpart who – at the onset of Wilson's presidency – (i) worked in the same Cabinet department and bureau, (ii) worked at the same level of seniority and (iii) earned the same salary. We then compare these matched pairs of black and white civil servants using a difference-in-differences design. Using this approach, we assess how the black-white earnings gap among comparable civil servants evolved before and after Wilson's 1913 mandate.

Underpinning our study is a large-scale data digitization effort. Overall, we leverage three data sources that – to the best of our knowledge – have to date not been collectively marshalled for prior study. First, we digitize each volume of the United States Official Register series for the time period 1907-1921. Issued every two years during the time period we study, the Official Register ("Register") is an official government publication that provides a detailed list of every person who worked for the federal government. We complement this data with newly digitized annual data from the Record of Appointment of Postmasters and the United States Official Postal Guide to construct a panel of all postmasters and their remuneration over the same time period. This allows us to study a government agency that has been a major source of stable employment for black Americans since Reconstruction (Boustan and Margo, 2009). Since senior postmasters served at the pleasure of the President, the focus on the Post Office also allows us to assess high-level appointments as a mechanism akin to promotions through which Wilson's segregation policy operated.

A major challenge for the study of racial differences in the US federal civil service is the absence of race in the personnel records we digitize. We overcome this barrier by linking our newly digitized personnel records to the complete count Decennial Census of 1910. Given the absence of detailed information (in particular age) to allow for conventional matching procures (Abramitzky et al., 2019), we propose a new probabilistic method that allows us to predict the race of civil servants based on name and birth location alone. We validate this approach by comparing our predictions with a benchmark sample that we obtained by time-intensive hand matching.

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, had the same seniority and earned the same salary prior to the segregation order, blacks earned approximately 7 percentage points (p.p.) less over the duration of Wilson's term. This holds with individual fixed effects, suggesting that the negative effect is driven (at least partially) by differences in career progression. The negative effect is largest for the Post Office, Government Printing Office (GPO), Navy and Treasury – departments known for having stringently implemented the segregation order. By contrast, the penalty faced by black civil servants was smallest within the Agriculture Department, a department known for initially resisting segregation (King, 1996).

In terms of channels, we find that President Wilson harmed 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 government – i.e., promotions. The Registers are an imperfect source for probing this channel because they have little information about the hierarchy of jobs within the Cabinet departments other than salary. Thus, to examine the effect of Wilson's segregation policy on promotions, we use the combined Post Office data described above, which provide information on who occupied high-ranking government positions within a major Cabinet department. We focus on appointments of first, second, and third-class postmasters, as these were the highest-ranking postmasters who were appointed at the discretion of the President. After Wilson's segregation mandate came into effect, we find that black civil servants were 1.2 p.p. less likely to become presidential postmasters. Given that the share of black presidential postmasters was 13.1%, this is a sizeable effect. We also provide evidence that black entrants to the civil service entered at systematically lower salary levels after Wilson takes office – suggesting that the segregation regime had effects on the extensive margin, as well.

Our study contributes to research at the intersection of two main literatures. First, we contribute to the literature on discrimination in American economic history. In the United States, outcome gaps between black and white civil servants have been a persistent feature of the American labor market since the end of the Civil War. Much of this literature centers on the period of time from mid-century to the present day, spanning the second Great Migration (Boustan, 2009; Hornbeck and Naidu, 2014; Derenoncourt, 2019), massive school desegregation efforts (Card and Krueger, 1992; Johnson, 2011), changes to labor market institutions (Farber et al., 2018; Bailey et al., 2020; Derenoncourt and Montialoux, 2020) and the passage of major antidiscrimination efforts (Smith and Welch, 1989; Donohue and Heckman, 1991; Collins, 2003; Cascio and Washington, 2013; Aneja and Avancios-Leon, 2020).

We understand relatively less, though, about the sources of earnings disparities for the time period between the Civil War and World War II. The dearth of evidence on labor market inequality in the late

19th century and early 20th century is striking, given that this period of American history witnessed the emergence of (often state-sanctioned) racial subjugation in much of the country, particularly the South (Collins and Wanamaker, 2017). Some economic constraints faced by blacks were formal – including residential segregation, bans on labor mobility, and political disenfranchisement (Naidu, 2012). Others were informal, such as norms about racial inferiority (Woodward, 1955). We show that segregationist government personnel policy was a relevant causal determinant of racial inequality. We make progress by providing unique evidence from a specific set of policies - thus documenting the active role of a public organization to implement policies to discriminate among its personnel.

Second, we contribute to the growing literature on 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). While there is a large literature that studies the role of political alignment or social ties between politician and bureaucrats in shaping career progression, there is little work that studies the effect of discriminatory policies within public organizations. Understanding discrimination in the public sector is potentially important, given that public sector organizations today are often a major employer of marginalized groups, such as women and racial minorities (Krislov, 1967).

## 2    Context: The US Federal Government

The United States 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. Nearly three-quarters of federal civil servants today are paid under the federal General Schedule (which sets pay and promotion schedules). Moreover, most are hired through a competitive process.

### 2.1    1912: Woodrow Wilson and the Onset of Federal Segregation

At the beginning of the 20th century, the federal government was relatively unsegregated. It employed black men and women at all levels of the federal bureaucracy, including high-ranking, white-collar positions (Yellin, 2013). Opportunities for blacks in the federal government dried up, though, with the election of Woodrow Wilson as President. During his first year in office, Wilson introduced a policy of segregation into 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: "[s]hould 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." Booker T. Washington in turn declared his support for Wilson, expressing his faith that Wilson would provide "improvement and advancement of my people."[3] 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).

Racial segregation was implemented at the Cabinet department-level. Wilson appointed southern Democrats – who presumably shared his segregationist sympathies – to lead several of these departments, making the task of segregating government workplaces and discriminating against black civil servants feasible. Racial separation was first imposed in the Post Office, where his choice for Postmaster General was the conservative Democratic Congressman, Albert S. Burleson, of Texas.[4] The next department to segregate was the Treasury Department – which employed more black civil servants than any other federal department apart from the Post Office. Like Burleson, Secretary William Gibbs McAdoo was in many ways a southern Segregationist. To McAdoo, segregation by race was no different than any other organizational hierarchy, comparing the racial segregation of Treasury facilities to "the provision of separate toilets for the higher officials of the department."[5] Other departments soon followed suit, segregating in rapid succession.

## 2.2 The Potential Effects of Federal Segregation

The main effect of Wilson's policy vis-a-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, Agriculture, Navy, and many others. Moreover, 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 May 1914 it began requiring that photographs be attached to all job applications, making it easier to discriminate against black candidates. Moreover in some cases, black civil servants were terminated outright (MacLaury, 2014). Given historical evidence that President Wilson's segregation policy affected black civil servants at both the intensive and extensive margins, it is reasonable

[3]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).

[4]Burleson was eager to segregate employees within his department, having complained to President 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).

[5]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. Please arrange accordingly."

to hypothesize that their earnings would suffer. We thus turn to testing this hypothesis now.

# 3 Data and Descriptive Statistics

## 3.1 Data Source: US Federal Registers & Postal Guides

Our main goal is to identify the impact of Wilson's segregation order on black civil servants' earnings, and how they evolve relative to those of whites. Data from the Decennial Censuses are poorly suited to our question because it is available only at the decadal level – further complicated by the unavailability of the 1890 Census records. We thus undertook a large-scale data digitization exercise to construct an individual-level personnel dataset of the entire US federal government covering the first two decades of the 20th century. Our analysis combines newly digitized data from three main sources of US government personnel information: the Official Registers, the Record of Appointment of Postmasters, and the US Postal Guide.

The main data source for our study is the United States Official Register series. The 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 prior to 1921, and a substantially complete enumeration afterward.[6] Issued biennially, the Registers listed every employee and contractor of the US Government. For each civil servant, the Register includes information on a federal employee's place of birth, state from which he or she is appointed, and salary. Also included is a civil servant's assigned department, the bureau within that department, and his or her job title. The cut-off date for inclusion in a given year's volume is July 1.[7] Appendix Figure A1 shows a sample of the Register records. The time period for our analysis is 1907-1921, comprising the entire period from several years prior to Woodrow Wilson's election through the early 1920s, when Wilson left office.

One limitation of the Register data is that it does not contain the complete records of the Postal Office due to page restrictions.[8] The Postal Office was and remains the largest department, with 292,049 civil servants employed in 1913 – making up 62% of the total federal employment. At the same time, the US Postal Office has long been a unique occupational "niche" for black Americans (Boustan and Margo, 2009). To ensure we also cover this important department, we further construct a comparable panel of federal Post Office employees by digitizing and combining two sources. The first source is the federal

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[6]In 1923, the Register was not published due to federal pressure to reduce costs. The Register resumed in annual form in 1925, but in a much more reduced form, owing to the size of government and the cost of describing the entire federal government.

[7]Temporary employees who have served for less than six months are not included.

[8]Complete Post Office listings were contained until 1911. However, because the Postal Service was by far the largest government agency by the turn of the century, its length finally overwhelmed the production of the Register, leading the federal government to exclude lower-level postal civil servants. In 1913, Congress passed the Urgent Deficiency Act, which authorized the elimination of many nonessential government publications for budget reasons. As part of that legislation, all information relating to the Postal Service (with exception of the senior-level administration in DC) was removed.

Record of Appointment of Postmasters, which provides information for the terms of postmasters by post office. We combine this personnel data with data from the United States Postal Guides, which provides salary information for post offices of first, second, and third-class. We digitize this data for all years between 1907 and 1922. These sources of information allow us to study a primary mechanism underpinning the effects on the salary gap: political appointments.

Our final dataset provides a few unique advantages over data used in previous analyses of racial inequality in the pre-1940 period, which typically rely on Decennial Census data. 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. This is an important advantage, given the potential for racial discrimination within occupation. Second, the Registers and Post Office data are available at a greater frequency – issued on biennial and annual bases, respectively. This higher-frequency data allows us to more carefully consider time-varying confounders than does data on a decadal level. Finally, the data that we construct spans a large subset of federal government employees. As such, they provide an unprecedented opportunity to examine discrimination over the scale of the full federal government.

## 3.2 Measuring black civil servants

To measure earnings inequality, we need to know the race of each civil servant in our dataset. A data challenge in our context, though, is that the Register and Post Office data do not 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, which *does* record each respondent's race.

We do so in the following way. Because we do not observe biographical information other than name and place of birth (in particular age), we compute the likelihood that a person is black based on the share of all black Decennial Census respondents who share the same *full* name and birth state. For each first name $\times$ last name $\times$ birth state combination, we compute:

$$\text{Black}_i \quad = \quad \mathbf{1}[\Pr(\text{Black}|\text{First name, Last name, Birth state}) > c] \tag{1}$$

where an individual $i$ is predicted to be black if the conditional probability based on the name and birth state combination is larger than a threshold value $c \in [0, 1]$.

To implement our approach for inferring civil servant race, we first match name $\times$ birth state to the census. We match *exact* based on first name (including initial), last name and birth state. This yields a match rate of 29%. We then relax the match criterion by matching only *exact* on first name (excluding initial), last name and birth state. This increases our overall match rate to 41%. Figure A2 shows the share of civil servants who can be matched in each year. Since civil servants who cannot be matched

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often appear only in a single year (e.g. due to typos), the weighted share of matched civil servants is higher. Reassuringly, the match rate remains relatively stable over time.

To transform the probabilistic measure into a dummy, we impose a cut-off value of $c = 0.5$, which provides a simple interpretation. An individual is thus predicted to be black if individuals sharing the same name and from the same state are more likely to be black than not.[9] With this cut-off, the share of black civil servants is 11.5% between 1907-1921, consistent with estimates from the literature. Figure 1 shows the share of black civil servants based on our measure over time.

To assess the validity of our estimates, we drew a random sample of 1,000 civil servants from the Treasury – the largest department in the Register data – in 1911 and hand-matched them to the census. The results are shown in Table A1. To start with, out of the 1,000 we were able to match 626 individuals. As expected, the match rate is slightly higher than using our automated approach. Importantly, our measure of black civil servants strongly predicts the measure obtained through time-intensive hand-coding. A civil servant whose name and birth state matches with 100% of black individuals in the census is 69% points more likely to also be identified as black in the hand-coded measure (column 1). The magnitude remains large when using the transformed dummy measure (column 2). We thus conclude that our measure to predict black civil servants has sufficient predictive power.[10]

## 3.3   Sample: Descriptive Statistics and Matching

For our period of analysis 1907-1921, we have a total of 321,470 unique federal civil servants – 40,020 blacks and 281,450 are white. Overall, we cover 692,877 individual-years. In columns (1) - (2) of Table 1, we provide raw summary statistics for our full sample of government civil servants. Column (3) tells us how black civil servants in the full sample compared to white civil servants in terms of pay and tenure of service. Blacks earn significantly less and tend to have joined the service later (i.e. they are of lower seniority). They are less likely to hold per annum or per month contracts. In the context of our data, this means that they are more likely to be employed as part-time civil servants. In short, black civil servants held on average worse jobs than whites during our study period.

[Table 1 about here]

It is readily apparent that black civil servants held very different positions from white civil servants. This observation is not surprising, given that black Americans were only a generation from the Civil War, and still trailed white Americans in access to schooling and other key dimensions of human capital (Collins and Wanamaker, 2017). We must therefore first identify a suitable control group of

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[9]We use the IPUMS definition of "black", which also includes mulattos.

[10]Our measure also correlates with distinctively black names as computed by Cook et al. (2016).

white civil servants within our sample who hold similar jobs to measure the impact of segregation. We do this by finding counterfactual white civil servants who – prior to the Wilson administration – worked in the same bureau, entered at the same time (i.e., have similar levels of experience), and hold the same type of payment contract with the same compensation level. We do this using the coarsened exact matching method proposed by Iacus et al. (2012), and implemented in papers such as Sarsons (2020) or Azoulay et al. (2019). We match civil servants in 1911 based on salary (exact),[11] entry year (exact) and bureau (exact), and the mode of pay[12] (exact).

Column (4) of Table 1 shows the mean differences for our final (matched) sample. Blacks and non-blacks are now more comparable in their tenure and type of employment. The remaining difference is the salary gap in the full sample, which we will demonstrate is entirely driven by the post-1913 sample and capturing the impact of Wilson's segregation measure.

### 3.3.1 Example: John A Davis and Willard A Pollard

To provide intuition for the matching strategy, consider the following example. John A Davis was born in 1863 in DC to a white Washington 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 continued to work for the next decades.[13] From his biography, we know that John worked as a laborer, then progressed to clerical and finally mid-level management positions. His relative wealth was reflected in the fact that he owned a farm in Virginia in addition to a home in DC. Our data matches this narrative well.[14] We find that John A Davis was serving as a clerk in the GPO from the beginning of our sample in 1907. Our probabilistic estimate for race puts him as 40% black when computed using full name and birth state, and 66% when computed using full name (excluding the initial) and birth state. In 1911, the last round of our data before Wilson's term, John was making $1400 per annum – a good salary that puts him at the 75% 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 $1300, 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 annual salary.[15] 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

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

[12]These different categories are: per annum, per month, per day, per hour.

[13]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.

[14]See Appendix Figure A1 for the actual data entry in 1913.

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

remain at that salary until 1921, our last round of data. From his biographical record we know that he was forced to auction off the family farm in 1914 and died in 1928 aged 65.

Using our matching criteria, we find an exact match for John A Davis. Willard A Pollard was also born in DC at around the same time – two years after John. In 1911, the year in which we perform our matching, Willard likewise worked in the GPO, held the same job title (clerk) and earned the exact same salary $1400, suggesting that both must have been colleagues of equal rank. Unlike John, Willard's career continued to progress after Wilson assumed office. Willard received a raise in 1917, earning $1600 – more than three times as much as his former colleague John. In 1921, the last data point, we see Willard receiving another raise, earning $1800. This puts Willard at the 75% percentile of the full-time salary distribution in 1921. John, in contrast, fell to the 10% percentile. Willard dies in 1950, aged 85. Figure 2 summarizes the comparison of both colleagues.

# 4    Results

Figure 3 motivates our empirical hypothesis with descriptive evidence. The figure presents the average salaries of black and white civil servants over time. Prior to Wilson taking office, black and white civil servants earn comparable incomes in our matched sample. After Wilson assumes office and issued the segregation order in 1913, however, we observe an immediate divergence in average salary by race. White civil servants quickly receive systematically higher salaries than their black counterparts.

## 4.1    Empirical Specification

We now turn to a more rigorous analysis of 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 standard difference-in-differences (DD) framework. For individual $i$ and year $t$, we relate wages to this policy by estimating:

$$log(w_{it}) \quad = \quad \alpha \times Black_i + \beta \times Black_i \times Wilson_t + \tau_t + \varepsilon_{it} \tag{2}$$

Here, $w_{it}$ 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 (see subsection 3.2). $Wilson_t$ is a dummy variable indicating exposure to the segregated federal government. This variable equals 1 beginning in 1913 onwards, when Woodrow Wilson was inaugurated as President.[16] $\tau_t$ are time fixed effects (and thus absorb the first-order *Wilson*

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[16]Wilson was inaugurated March 4, 1913. Our data for 1913 are based on the cut-off July 1st, 1913 and thus capture the post-transition period.

term). Standard errors are clustered at the individual level, since treatment varies by an individual civil servant's race (black vs. non-black).

There are a few potential threats to identifying the effect of President Wilson's segregation policy on the within-government racial earnings gap. One concern is that the racial earnings gap was already increasing prior to Wilson's official policy of segregated government. While the absence of pre-trends in the raw Figure 3 already helps assuage these concerns, we further rule out this possibility by estimating flexible versions of our main specification, allowing the wage gap to vary by each time period. We can then statistically test whether there exists a pre-existing trend in earnings inequality.

Further evidence in favor of the exogeneity of civil service segregation is the unexpected nature of Wilson's order. While black voters had historically supported the Republican party in prior decades, Wilson's base of electoral support included a substantial number of black voters – including WEB Dubois and Monroe Trotter. As discussed in subsection 2.1, the implementation of the segregation measures struck many by surprise, and it is this unexpected nature of the policy that helps to further allay concerns over the endogeneity of the timing.

In the main specification above, we do not include individual fixed effects as we are also interested in the selection margin. Historical research suggests that segregation may have had large impacts on the entry or exit of black civil servants from government work. Many blacks may have left due to the disappearance of promotion opportunities, and segregation likewise may have discouraged the entry of new black civil servants. We do introduce the individual FEs when we seek to understand drivers of the changing wage gap.

## 4.2 Main effects: Effect of employment segregation on earnings

Moving beyond the raw data, we now turn to our main findings, presented in Table 2. Regressions are based on our matched sample of black and white civil servants. We are thus comparing the earnings gap of black vs. white civil servants who were working in the same department and bureau, entered in the same year, and earn the exact same salary pre-segregation (1911), before and after the Wilson transition. In column (1) we observe that as expected, black civil servants on average earn 5 percent less than white civil servants within the same Cabinet department. Salaries increased under Wilson, although this could simply reflect increasing pay over time, as indicated by the coefficient estimate for $Wilson_t$ presented in column (2).

In column (3) of Table 2, we show our main finding by estimating the baseline DD specification from Equation 3. The coefficient of interest, $\beta$ on $Black_i \times Wilson_t$, suggests that Wilson's policy of racial segregation increased the earnings gap by around 7.3 p.p. Reassuringly, the point estimate and preci-

sion is almost identical when including year fixed effects, as seen in column (4). The Wilson adminis-tration thus seems to have had a demonstrably negative impact on the earnings of black civil servants who were equivalently situated prior to his presidency. To put our estimate in more context, the raw black-white civil servant salary gap in 1911 was around 37%. Roughly speaking, this means that the segregation policy increased the wage gap by around 20% – a sizeable effect.

As we noted above, our estimate of Wilson's impact would be potentially confounded by preexisting trends in the earnings gap between black and white civil servants. We thus present our main find-ings using an event study design in Figure 4, where we look at leads and lags of the black earnings penalty within the federal bureaucracy. Reassuringly, there appear to be no statistically significant level or trend differences between black and white civil servants' salaries prior to Wilson's segrega-tion order, but an immediate drop in black relative earnings afterward. The gap continues to grow during Wilson's second term.

Finally, in our most demanding specification, we control for individual-level fixed effects, thus only comparing salary changes within the same civil servant before and after the Wilson transition. Even when controlling for unobservable differences across individual civil servants, we still observe a 5.2 p.p. increase in the black earnings penalty within the bureaucracy (significant at the 1% level). Since this specification partials out any unobserved heterogeneity across individual civil servants, we are implicitly controlling for any differences in human capital. Moreover, this regression suggests that Wilson's policy of racial discrimination is likely operating at both the extensive and intensive margin. That the effect remains detectable even when looking "within civil servant" suggests that a substantial part of the effect is coming from discrimination against existing civil servants.

To understand the drivers of the salary decrease, we now examine how the salary distribution for black civil servants changed during Wilson's presidency. To that end, we estimate the propensity of being black for each decile, broken down by pre- and post-Wilson transition. In Figure 5, Panel A, we do this for the matched sample of comparable black and white civil servants in 1911. As Panel A shows, while black civil servants are almost equally likely to be found across the entire salary distribution before 1913, this is no longer the case after the segregation order. Post-1913, we observe a reallocation of black civil servants to lower paid positions. Black civil servants are now significantly more likely to be found in the lower salary deciles, and less likely to be found in the higher ones.

The analysis in Figure 5, Panel A is based on the reshuffling of civil servants already serving in the gov-ernment prior to Wilson's arrival. To shed light on the extensive margin, Panel B repeats the exercise for the subsample of new entrants into the civil service. Prior to Wilson's presidency, black entrants were already more likely to enter in the lower parts of the salary distribution. After 1913, however, the

likelihood increased further, indicating that the overall effect of Wilson's segregation order impacted both the intensive and extensive margin: segregation both led to demotions of already serving civil servants *and* a disproportionate entry of black civil servants in lower paid positions.[17].

## 4.3 Department-level heterogeneity

Figure 6 summarizes department-specific estimates of the segregation effect. We focus on departments that are 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 any year). Figure 6 documents substantial heterogeneity: the increase in the wage gap between black and white civil servants was largest in the Post Office Department, followed by the Government Printing Office, the Navy and the Treasury. In contrast, the increase in the wage gap was much smaller and even statistically indistinguishable from zero in departments such as Agriculture, Commerce and the Labor department.[18]

The observed heterogeneity is consistent with the historical literature (subsection 2.1): the Post Office, Navy and Treasury were the first departments to implement segregation (Sosna, 1970). In contrast, historical evidence suggests that the Department of Agriculture was initially resisting segregation King (1996). As the figure also shows, the largest increases in the salary gap are evident in departments headed by Cabinet secretaries hailing from the South. This observation is consistent with effects being strongest in those departments where top bureaucrats were most likely to share Wilson's segregationist preferences – also consistent with the historical literature.

## 4.4 Mechanisms: Understanding the Role of Promotions

As we previewed in section 2, one of the main ways through which the segregation of the federal bureaucracy likely reduced the earnings of black civil servants was by shutting down opportunities for career advancement. While we provide evidence for this channel using salaries, the Registers are an imperfect source for probing this channel because they do not tell us about the hierarchy of jobs within the various Cabinet departments. To examine the effect of Wilson's segregation policy on the stunting of black civil servants' career advancement, we now turn to Post Office data as a novel source of information on promotions. As we described in section 3, this untapped source of government employment information tells us who occupied the high-ranking positions within the US Postal Service – the first, second, and third-class Postmasters. We can thus test whether Wilson's segregation order decreased the likelihood that black civil servants would occupy these positions.

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[17]The slight level increase in the share of blacks reflects the secular trends as shown in Figure 1.

[18]The Department of Commerce and Labor splits in 1913. To ensure comparability over time, we keep the department combined throughout. Since our matching occurs within bureaus, however, this does not affect the main results.

Focusing on the Post Office to understand promotions makes sense for a few key reasons. First, the Post Office Department was the largest federal employer of black Americans at the time Wilson became president. Moreover, as shown in previous section (Figure 6), it experienced one of the starkest increase in wage inequality between black and white civil servants. Second, the top appointments – first, second and third-class postmasters – were positions directly subject to presidential appointment (and thus were called the "Presidential Postmasters"). To estimate the impact of Wilson's segregation regime on racial differences in Presidential Postmaster appointment, we estimate:

$$Senior\,Appt_{it} \quad = \quad \alpha \times Pr(Black_i) + \beta \times Pr(Black_i) \times Wilson_t + \tau_t + \varepsilon_{it} \tag{3}$$

where $Senior\,Appt_{it}$ is an indicator variable that is 1 if the postmaster position was a senior position, defined as a first to third class postmaster position. The resulting estimate $\beta$ thus tells us how Wilson's policy of federal segregation affected the probability that black civil servants would be appointed to high-level Post Office positions, relative to white postal civil servants. As before $\tau_t$ are year fixed effects. The error term is clustered at the position level $i$, coinciding with the unit of assignment.

One limitation of this setting is that information about the postmasters is limited. While we were able to use name and birth location for matching in the Register, we now only have the full name of the postmaster and the location of the appointment. This makes it even more difficult to match the postmasters to the census data in order to identify black postmasters. We thus follow a probabilistic approach by constructing $Pr(Black_i)$ as the share of Black respondents in the 1910 census sharing the same full name and residing in the same state.[19]

The regression results are presented in Table 3. On average, blacks are 2.1% points less likely to be appointed to a first to third class postmaster position (Column 1). The presidential appointment gap opened significantly, though, after Woodrow Wilson assumed office (Column 3). The results remain robust when we include year fixed effects (Column 4).

Figure 7 shows a flexible version of the regression where the racial appointment gap varies by year. Reassuringly for our ability to infer the effect of federal segregation, we observe no trend in the postmaster appointment gap prior to 1913. We observe an immediate slope change, however, once Wilson takes office – an effect that persists and grows over Wilson's presidency. By the end of Wilson's term of office, black postal employees are nearly 3.3.p.p. less likely to hold a first, second or third class postmaster appointment. The results presented in Table 3 and Figure 7 thus demonstrate that Wilson's segregation order had a causal impact on the appointment process within the branch of the federal

[19]In contrast to the main analysis, we no longer discretize the measure as the mean share of black civil servants using only a name match is very low. We also have no benchmark estimate of the number of black postmasters, thus making it hard to define a specific cut-off for discretization.

government where black civil servants were most populous. The fact that the black-white appointment gap opens up for the senior-most positions at the pleasure of the President is particularly compelling: it strongly suggests that a key channel through which segregation increased racial earnings inequality was by limiting the ability of black civil servants to be promoted to better jobs.

# 5   Conclusion

According to Madison's Federalist No. 10, a key goal of the state in any liberal democracy should be to protect minorities from majority tyranny and abuse. What happens, though, when the state plays a central role in *perpetuating* discrimination against marginalized groups?

In this paper, we document a unique episode of state-sanctioned discrimination: President Woodrow Wilson's segregation of the federal civil service by race. Using a difference-in-differences design to compare the earnings gap between black and white civil servants before and after Wilson assuming office, we uncover significant costs of employment segregation. Comparing among black and white colleagues working in the same department, bureau, with the same seniority and salary prior to Wilson's presidency, we find that white civil servants outearn their black counterpart by 7 p.p. during Wilson's term. The earning gap increases over the course of Wilson's time in office, indicating divergence in the career trajectories that likely persisted beyond his presidency.
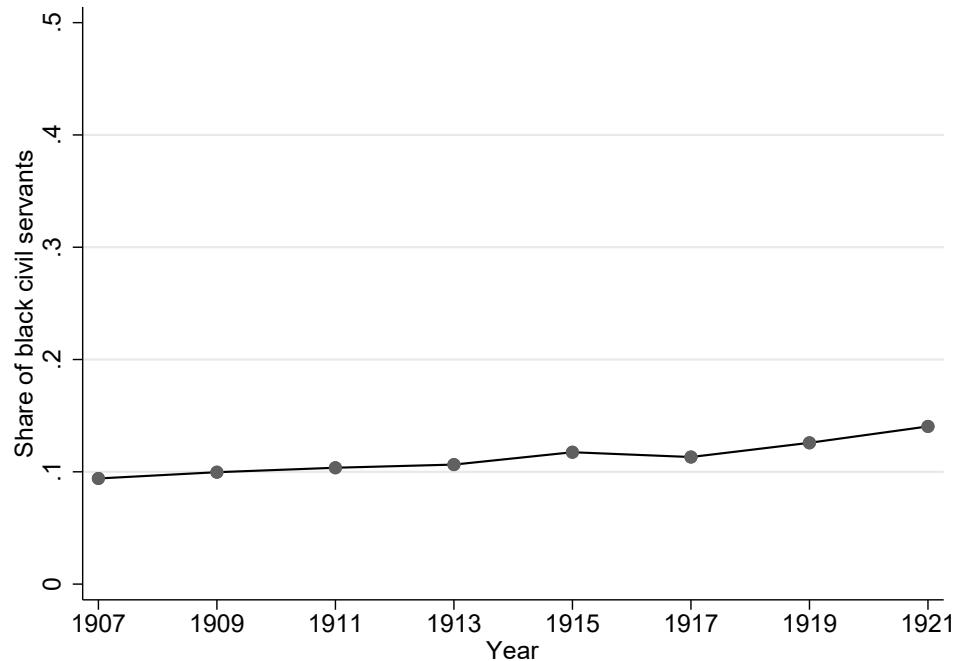
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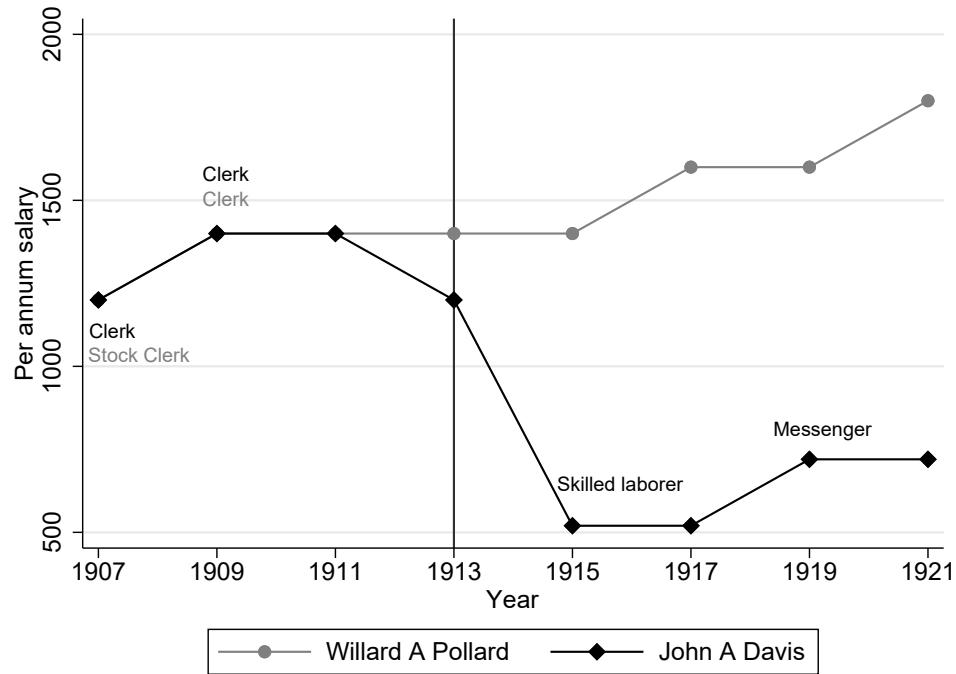
# Figures and Tables

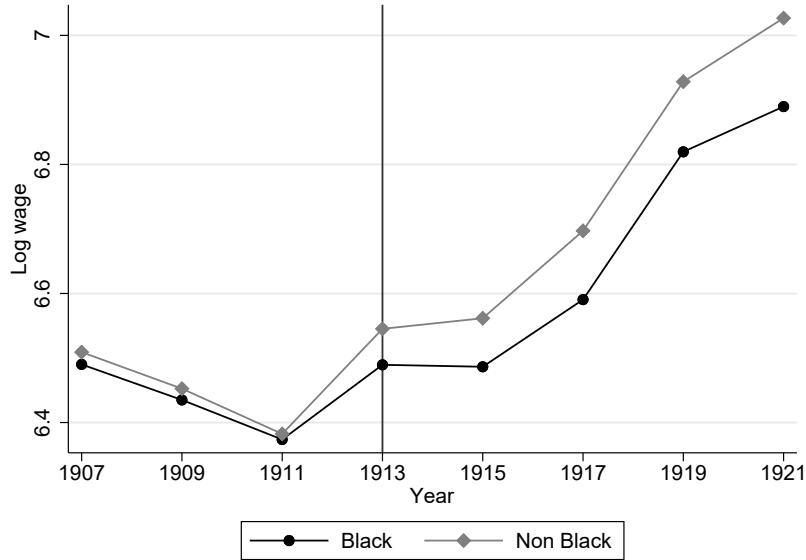Figure 1: Share of Black civil servants over time



*Notes:* Figure shows the share of black civil servants over time across all departments included in the federal Register. Black civil servants are measured as described in subsection 3.2.

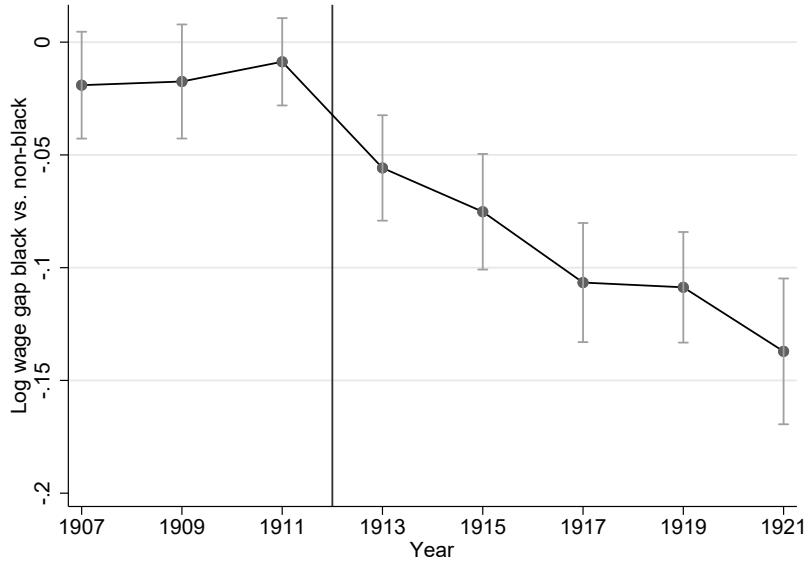Figure 2: Example of matching strategy – John A Davis vs. Willard A Pollard



*Notes:* Figure illustrates the matching strategy for the case of John A Davis (black civil servant) and Willard**jy** A Pollard (white civil servant). The career progression shown for both civil servants is based on actual data on salary and occupational position from the federal Register. The solid line marks the year of Wilson's inauguration and implementation of the segregation order.

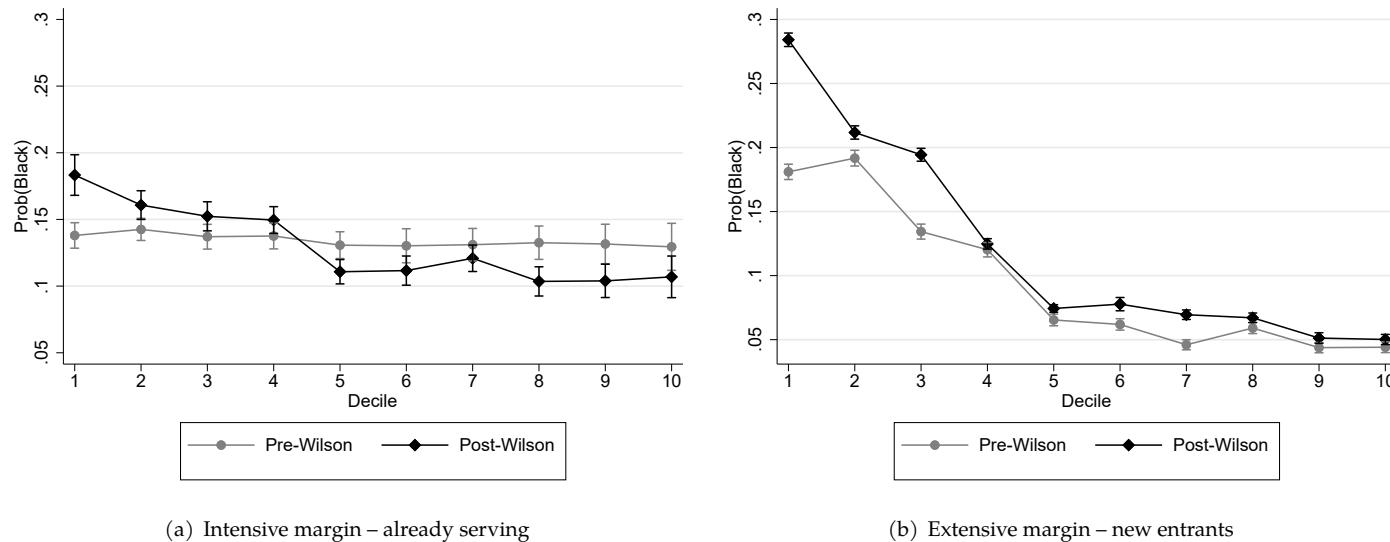Figure 3: Raw mean wages by Black vs. Non-Black civil servant



*Notes:* Figure shows the black vs. non-black earnings gap for the matched sample of civil servants from the federal Register (matching based on 1911 department, bureau, seniority, and salary). The solid line marks the year of Wilson's inauguration and implementation of the segregation order.

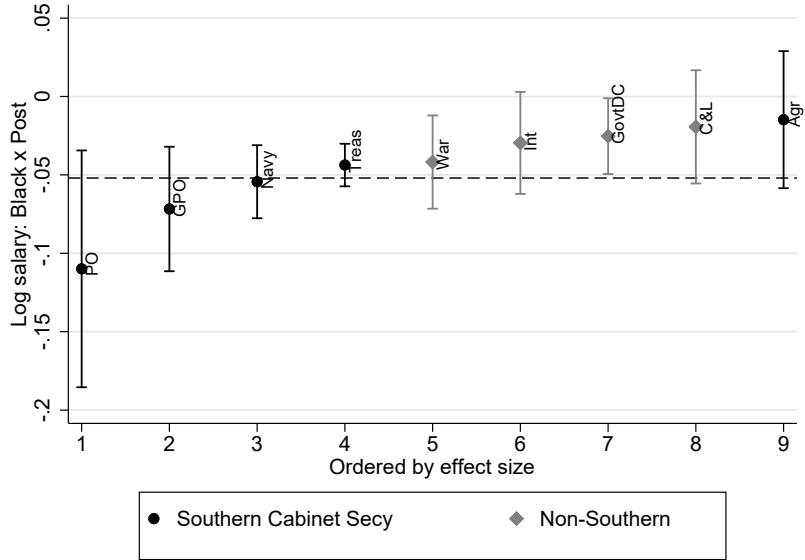Figure 4: Racial earnings gap around Woodrow Wilson election



*Notes:* Figure shows the estimated black vs. white wage gap for the matched sample of civil servants from the federal Register (matching based on 1911 department, bureau, seniority, and salary), conditional on year FEs (Table 2, column 3). Solid line marks the year of Wilson's inauguration and implementation of the segregation order. Showing 95% confidence intervals based on standard errors clustered at the individual-level.

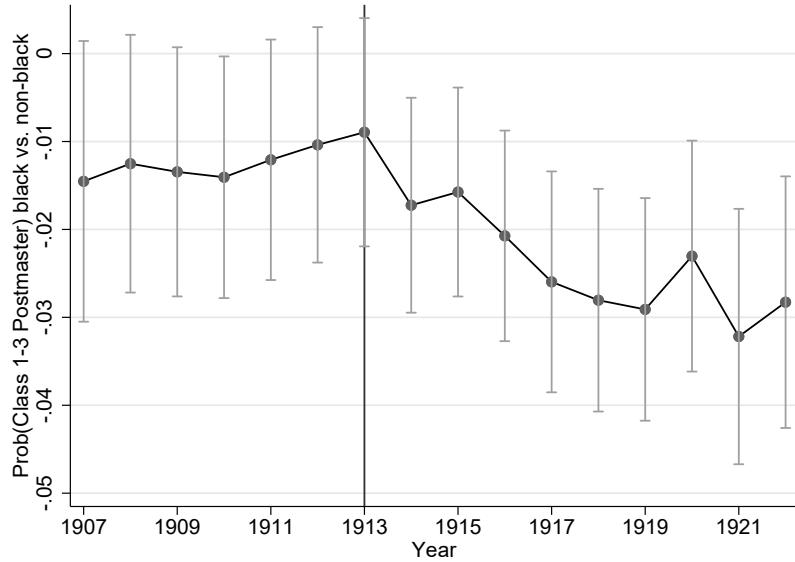Figure 5: Distribution of black civil servants by wage decile before and after Woodrow Wilson election



(a) Intensive margin – already serving

(b) Extensive margin – new entrants

*Notes:* Left panel: Share of black civil servants by each salary decile, before and after Wilson's inauguration in 1913. Estimates are based on regressing a dummy for a black civil servant on each salary decile, separately for pre-1913 and post-1913 for the matched sample of civil servants already serving in 1911. Right panel: Estimates are based on the full sample of entrants (as defined by a civil servant first time observed in the data). The solid line marks the year of Wilson's inauguration and implementation of the segregation order. Showing 95% confidence intervals based on standard errors clustered at the individual-level.

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Figure 6: Heterogeneity in effect of segregation on earnings gap, by department



*Notes:* Figure illustrates the heterogeneity of $Black_i \times Post_t$ (Table 2, column 5), by department. We exclude departments with less than 50 black civil servants in any given year, as well as those not observed throughout the entire sample period (1907-1921). Estimates illustrated 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. Horizontal dashed line indicates the aggregate (pooled) effect size.

Figure 7: Impact of Wilson's segregation regime on racial gap in presidential Postmaster appointment



*Notes:* Figure shows the estimated black vs. non-black gap in the probability of a first, second or third class postmaster appointment (Table 3, column 4). First, second and third class are the highest-ranking postmaster positions and are appointed at the discretion of the President. The solid line marks the year of Wilson's inauguration and the implementation of the segregation order. Showing 95% confidence intervals based on standard errors clustered at the post office-level.

Table 1: Descriptive Statistics - full sample vs. matched sample

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | Non-black | | Diff Non-black - Black | |
| | Mean | SD | Raw | Matched |
| Log(salary) | 6.887 | 0.611 | -0.331*** | -0.050*** |
| | | | (0.003) | (0.008) |
| Earliest year | 1911.82 | 5.077 | 0.927*** | 0.023 |
| | | | (0.035) | (0.028) |
| Paid per annum | 0.533 | 0.498 | -0.057*** | -0.007 |
| | | | (0.003) | (0.008) |
| Paid per month | 0.103 | 0.304 | -0.005*** | -0.004 |
| | | | (0.001) | (0.003) |
| Observations | 612,436 | | 692,879 | 212,710 |

*Notes:* Table provides descriptive statistics for the Register civil servant sample. The unit of observation is an individual-year, and the time period is 1907-1921. The matched sample (column 4) is based on matching on department, bureau, salary, seniority (earliest year of service) and type of pay (e.g. per annum, per month etc.) in in 1911. When computing black-white differences, standard errors are clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 2: Impact of Wilson's segregation regime on racial earnings gap - Register sample

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | | | Log annual wage | | |
| Mean of dep. var | 6.785 | 6.785 | 6.785 | 6.785 | 6.800 |
| Black | -0.050*** | -0.052*** | -0.013 | -0.013 | |
| | (0.009) | (0.009) | (0.009) | (0.009) | |
| Wilson | | 0.277*** | 0.287*** | | |
| | | (0.005) | (0.006) | | |
| Black × Wilson | | | -0.073*** | -0.078*** | -0.052*** |
| | | | (0.008) | (0.008) | (0.005) |
| Year FEs | | | | Y | Y |
| Individual FEs | | | | | Y |
| Observations | 212,710 | 212,710 | 212,710 | 212,710 | 204,565 |

*Notes:* Table presents OLS regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the federal government. Regressions are based on the full Register dataset. The unit of observation is the individual-year. Sample covers all matched civil servants between 1907-1921. Black is a dummy that is 1 if the civil servant is predicted to be black. Wilson is a dummy that is 1 for 1913 and after. All wages are annualized. Standard errors clustered at the individual-level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3: Impact of Wilson's segregation regime on racial earnings gap – Postmaster sample

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
|  | Appointed Class 1-3 Postmaster | | | |
| Mean of dep. var | 0.131 | 0.131 | 0.131 | 0.131 |
| Pr(Black) | -0.021*** | -0.021*** | -0.013** | -0.013** |
|  | (0.004) | (0.004) | (0.006) | (0.006) |
| Wilson |  | 0.023*** | 0.024*** |  |
|  |  | (0.001) | (0.002) |  |
| Pr(Black) × Wilson |  |  | -0.012* | -0.012* |
|  |  |  | (0.007) | (0.007) |
| County × State FEs | Y | Y | Y | Y |
| Year FEs |  |  |  | Y |
| Sample | All postmasters | | | |
| Observations | 917,622 | 917,622 | 917,622 | 917,622 |

*Notes:* Table presents OLS regression estimates of the impact of Wilson's segregation policy on the racial earnings gap within the Post Office. Regressions are based on the postmaster dataset. The unit of observation is the individual-year. Sample covers all post offices between 1907-1921. Pr(Black) is the share of census respondents sharing the same name who report being black. Wilson is a dummy that is 1 for 1913 and after. The dependent variable is a dummy that is 1 if the post office is headed by a first, second or third class postmaster. Standard errors clustered at the post-office level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.
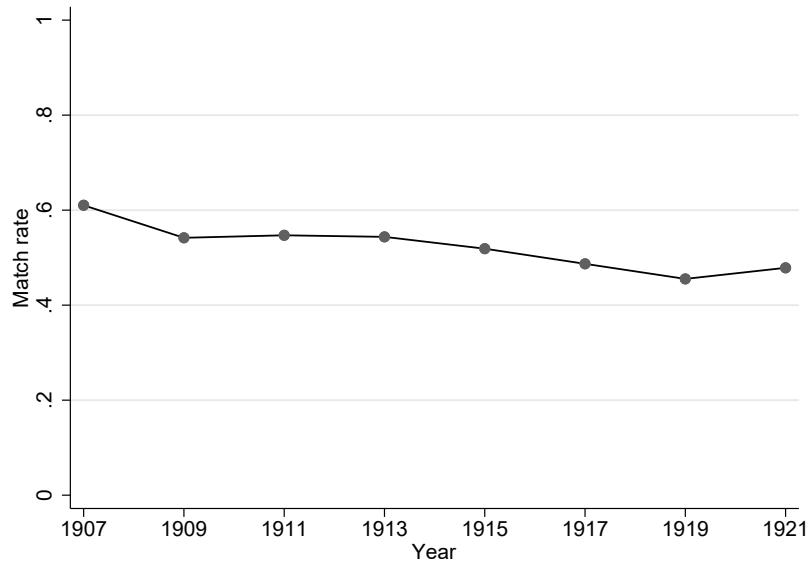
# Appendix

Figure A1: Sample of the Federal Registers 1913



*Notes:* Sample of the federal Register for the year 1913. Record highlighted in red is the example described in

Figure A2: Match rate of civil servants over time

*Notes:* Match rate of civil servants from the sample of the federal Register over time.

Table A1: Validating black measure

|  | (1) | (2) |
|---|---|---|
|  | Black (hand coded) | |
| Mean of dep. var | 0.0623 | 0.0623 |
| Pr(Black \| Full name, Birth state) | 0.685*** | |
|  | (0.072) | |
| $\mathbf{1}\left[\,\text{Pr(Black \| Full name, Birth state)} > 1/2\,\right]$ | | 0.580*** |
|  | | (0.067) |
| Observations | 626 | 626 |

*Notes:* Random sample of 1,000 civil servants drawn from the Treasury. Hand match rate is 62%. Dependent variable is a dummy for a black civil servant. Pr(Black | Full name, Birth state) is the share of census respondents who report being black and share the same full name and birth state.