# Online Appendix - Not for Publication

## A Linking the Official Registers to the Census

**Linking algorithm**. We employ the same linking algorithm that we use when linking Customs Service employees to the census in Moreira & Pérez (2021). The algorithm has the following steps:

1. Clean names in the Registers and the Census to remove any non-alphabetic characters and account for common misspellings and nicknames (e.g. so that Ben and Benjamin would be considered the same name).

2. For each individual in the Registers, search for a potential match in the Census. Potential matches are individuals who:

   (a) Report the same place of birth (states for the US born, country for foreigners). We exclude observations in the Registers with no information on birthplace. Among employees in our baseline target sample, there are 3% with missing birthplace information.

   (b) Have a reported age in the census such that they would have been between 18 and 65 years old at the time we observe them in the Register (for instance, when linking the 1881 register to the 1850 census we look for people age 0 to 35 in 1850). This restriction is aimed to capture the fact that the government was unlikely to employ both very young and very old individuals.

   (c) Have a first name and a last name within a Jaro-Winkler distance of $c_1$, where $c_1 \in [0, 1]$. The Jaro-Winkler distance is a string distance measure constructed such that a value of zero corresponds to two identical strings and a value of one corresponds to two strings with no common characters. We allow for non-identical strings to be considered a match to deal with transcription errors in the Census and for OCR errors in our digitization of the Official Registers. Intuitively, the lower the value of $c_1$ the more conservative our linking strategy (and hence the lower the number of cases we will match someone to an incorrect individual).

   (d) There is no other potential link with a first name and a last name within a Jaro-Winkler distance of $c_2$, where $c_2 \in (c_1, 1]$. That is, we impose that, if the closest individual is within a Jaro-Winkler distance of $c_1$, the second closest potential match needs to be at a distance of at least $c_2$ with $c_2 > c_1$. For a given value of $c_1$, a higher value of $c_2$ represents a more conservative choice.

**Choosing $c_1$ and $c_2$**. An advantage of our setting is that, for the Registers collected in 1871 and 1881, we can use the proximity of census years (1870 and 1880) to evaluate the quality of the matches as a function of the choice of $c_1$ and $c_2$. Specifically, we can compare the places of employment of individuals as reported in the Registers, to the places of residence of the individuals we match them to in the Census (of course, we do not use the place of residence as a criteria

for matching). Intuitively, if our links are correct it should be the case that employees' place of employment in the Registers should coincide with their place of residence in the Census.

To perform this analysis, we focus on individuals who were employed in the Executive Departments in DC (our baseline target sample) in 1881 . We consider a match as having a "correct" place of residence if the person lived in the Baltimore-DC metropolitan area. The implicit assumption is that employees who lived outside of this area would have been very unlikely to be working for the federal government in DC. We note that, even in the absence of errors, we should not expect this proportion to be 100% since some individuals working in the Federal Government in 1881 might have just arrived to DC (since the 1880 census took place in June of 1880 and the 1881 register captures the stock of federal employees as of July 1st of 1881). [86]

Panel (a) of Figure A13 computes, out of all the observations that we deem as a match, the fraction of individuals who are living in the "correct" area of residence as a function of the Jaro-Winkler string distance cutoffs that we use. Panel (b) instead computes the fraction of individuals in the correct location, but expressed as a fraction of the total number of observations that we attempt to match.

This figure illustrates the trade-off between type 1 and type 2 errors (or "precision" and "recall") in the case of 1881 register to 1880 census links. Choosing low values of $c_1$ and high values of $c_2$ results in high levels of precision (i.e. low false positive rates), but at the expense of matching relatively few employees (low "recall"). For the baseline analysis, we chose a combination of cutoffs that gives a balanced weight to precision and recall. Specifically, we chose $c_1$ and $c_2$ so as to maximize the harmonic mean of precision and recall (a standard performance measure in the machine learning literature, often referred to as the $F_1$ score).[87] Maximizing this function using the 1881 Register-1880 Census links leads to a choice of $c_1 = 0.7$ and $c_2 = 0.7$. In the analysis, we show the robustness of our results to alternative choices of the linking parameters.

**Matching Rates**. Figure A14 shows the proportion of individuals that we match to at least one census (and to at least two, three and four, respectively) when using our baseline choice of parameters, by register year. In this figure, we focus on matches to censuses conducted before each register year. Panels (a) and (b) show the proportion of male and female employees that we match to at least one census, respectively. Panels (c) and (d) show the proportion of employees that we match to a census in which the individual is below the age of 18, whereas panels (e) and (f) show the analogous figure for those that we match to a census where the individual is more than 18.[88] In all cases, the figures show that we are more likely to match male than female employees.

Because the first population census listing free persons individually took place in 1850, we are not able to find employees in their childhood households (i.e. when they were less than 18 years old) if they would have been more than 18 years old by 1850. For instance, among employees

[86] The census started collecting information on previous place of residence only in 1940, which makes it hard to estimate the proportion of individuals who would have just moved into DC in any given year.

[87] $F_1 = 2\frac{precision * recall}{precision + recall}$.

[88] Note that we cannot match an individual to more than two censuses while the individual is still below the age of 18, as censuses were conducted every 10 years.

in the 1871 register we can only link to their childhood household those who are at most 39 by 1871.[89] The Registers themselves do not include information on employees' age, but we can obtain this information when linking either the 1870 census to the 1871 register or the 1880 census to the 1881 register). By 1871, about 35% of the employees were 40 years old or more. As a consequence, we expect the proportion of individuals with at least one match to their childhood household to be higher for later years, which is indeed what we see in the data.[90] Similarly, we also expect a lower proportion of individuals in later register years to be matched to at least one adult observation (as the last census we include is 1880 and some employees would have been less than 18 years old by 1880, particularly those employed in later years).

**Representativeness of Linked Data and Potential Biases from Linking**. In our main analysis, we assess how the socioeconomic backgrounds of bureaucrats changed with the introduction of exams. Our sample in this analysis *only* includes employees of the US federal government who were successfully linked to at least one observation in the census. Specifically, we compare the characteristics of bureaucrats in positions subject to exams to the characteristics of those in exempted positions, before and after the reform. Hence, for our analysis to be biased by selection it would need to be the case that selection into linkage changed *differentially* for individuals in positions subject to exams after the reforms. This is unlikely because our linking procedure is exactly the same throughout all sample years and across all positions within government.

To further alleviate this concern, we estimate our main difference-in-differences specification using as outcome variables: (1) the total number of censuses to which we link an employee, or (2) and indicator that takes a value of one if the employee is linked to at least one census. Table A1 shows that there is little correlation between the likelihood of finding an individual in the census and whether or not this individual was appointed through an exam.

Next, Table A2 shows that our result on the share of foreign-born workers (which *does not* require the linked data since we can observe birthplaces directly from the Registers) is very similar regardless of whether we estimate it using the smaller linked sample or the full non-linked sample. Finally, our main results are also similar when we reweight the data to account for selection into the linked sample on the basis of employees' characteristics (Table A3).

[89] 18+(1871-1850).

[90] Individuals in later register years are easier to find as a child in at least one census. For instance, someone who is 35 years old in 1871 could be observed only once (as a 15 year old in 1850), whereas someone who is 35 years old in 1881 could be observed twice (either as a 5 years old in 1850 or as a 15 years old in 1860).

**TABLE A1: EXAMS AND THE LIKELIHOOD OF MATCHING AND EMPLOYEE TO THE CENSUS**

| | At least one match | | Number of matches | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exam X After | -0.0324 | -0.0335 | -0.00692 | -0.00903 |
| | (0.0332) | (0.0332) | (0.0186) | (0.0186) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes |
| Observations | 25442 | 25442 | 25442 | 25442 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in columns 1 and 2 is an indicator that takes a value of one if a an employee is successfully matched to at least one observation in the census. The dependent variable in columns 3 and 4 is instead the total number of censuses to which an employee is matched to. All columns include hiring year and position fixed effects. The even columns further include "state whence appointed" fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

**TABLE A2: EFFECTS OF THE REFORM ON THE SHARE OF FOREIGN-BORN EMPLOYEES, DIFFERENCE-IN-DIFFERENCES ESTIMATES**

| | Full Sample | | Linked Sample | | Linked Sample, Reweighted | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Exam X After | -0.0517*** | -0.0464*** | -0.0473** | -0.0419** | -0.0586** | -0.0510** |
| | (0.0163) | (0.0145) | (0.0190) | (0.0176) | (0.0230) | (0.0208) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes | Yes | Yes |
| Observations | 24375 | 24375 | 9238 | 9238 | 9238 | 9238 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable is an indicator that takes a value of one if an employee is foreign born. The sample in columns 1 and 2 includes all employees in our target baseline sample. The sample in columns 3 to 6 includes only those employees that we successfully link to an observation in the census. In columns 5 and 6, we reweight the data to account for differences in the matching likelihood across individuals. All columns include hiring year and position fixed effects. The even columns further include employees' home state fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

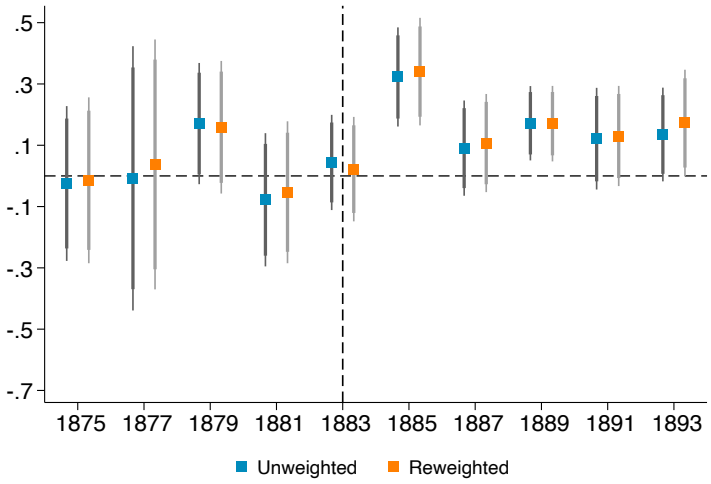
**TABLE A3: EFFECTS OF THE REFORM ON SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: ROBUSTNESS TO REWEIGHTING**

**(A)**

| | Unweighted | | Weighted | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exam X After | 0.180*** | 0.169*** | 0.193*** | 0.182*** |
| | (0.0451) | (0.0468) | (0.0460) | (0.0471) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes |
| Observations | 2944 | 2944 | 2944 | 2944 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable is a summary index of employees' socioeconomic background. The index is computed using the approach in Kling *et al.* (2007), and it combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. The table shows the sensitivity of the difference-in-differences estimates to reweighting the data to account for differences in the matching likelihood across individuals. Columns 1 and 2 present results using the unweighted data, whereas columns 3 and 4 use the reweighted data. All columns include hiring year and position fixed effects. The even columns further include employees' home state fixed effects. The figure in panel (b) shows the sensitivity of the event-study estimates. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

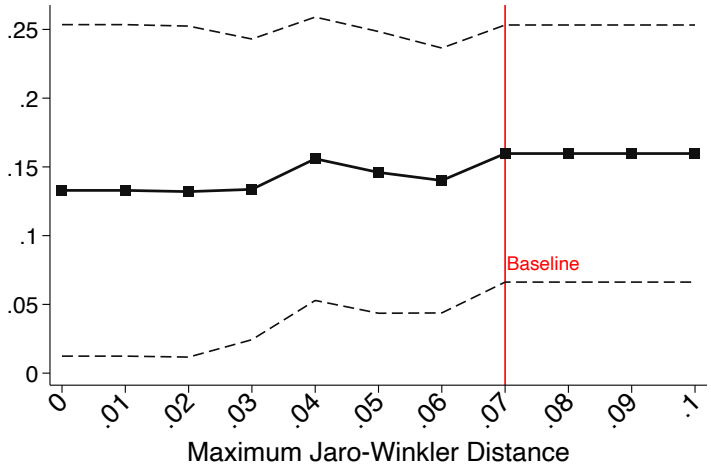
**FIGURE A1: EFFECTS OF THE REFORM ON SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, EVENT STUDY: ROBUSTNESS TO REWEIGHTING**



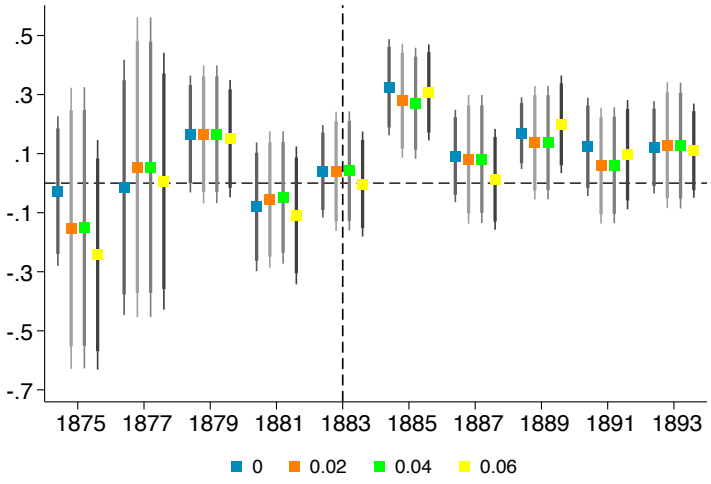

Notes: The dependent variable is a summary index of employees' socioeconomic background. The index is computed using the approach in Kling *et al.* (2007), and it combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. The figure shows the sensitivity of the event-study estimates to reweighting the data to account for differences in the matching likelihood across individuals. The sample is restricted to newly hired employees in the Executive Departments in DC.

**FIGURE A2: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, ROBUSTNESS TO ALTERNATIVE LINKING CUTOFFS**

**(A) DIFFERENCE-IN-DIFFERENCES ESTIMATES**

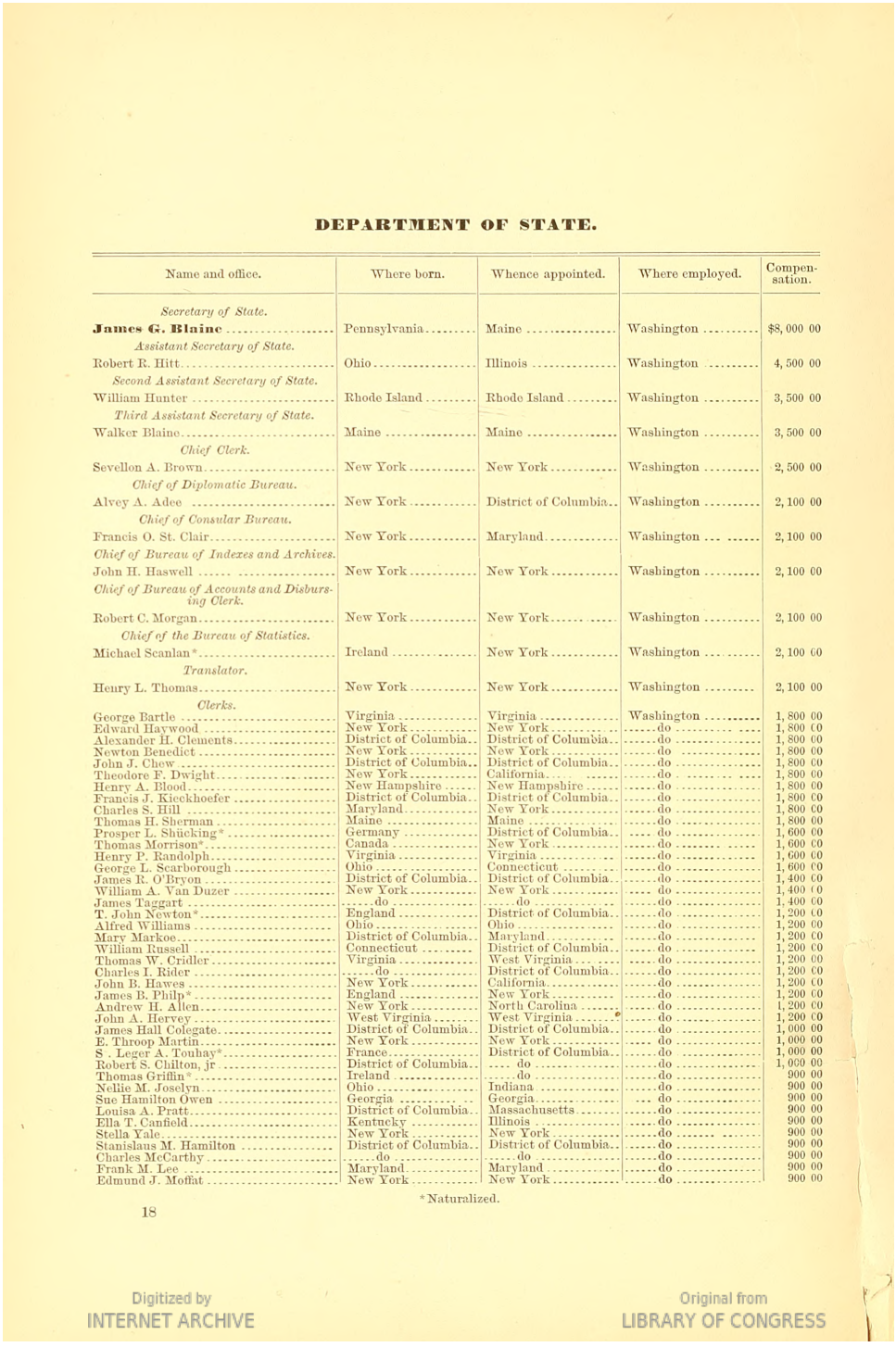



**(B) EVENT STUDY ESTIMATES**




Notes: The outcome variable in both panels is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. Panel (a) shows the estimated effects of the reform on the index (y-axis), as a function of the minimum Jaro-Winkler string distance above which an observation would no longer be considered a match (x-axis). Lower values of the Jaro-Winkler distance represent more conservative matches: A Jaro-Winkler distance of zero corresponds to two identical strings (an exact match), whereas a distance of one corresponds to two strings with no common characters (see section A for further details on linking). The red vertical bar in panel (a) corresponds to the cutoff used in the baseline approach. Panel (b) shows the corresponding event-study estimates when using alternative Jaro-Winkler cutoffs (as indicated by the figure's legend). The sample in both panels is restricted to newly hired employees in the Executive Departments in DC.

## FIGURE A3: EXAMPLE PAGE, OFFICIAL REGISTER OF THE UNITED STATES (1881)



DEPARTMENT OF STATE.

| Name and office. | Where born. | Whence appointed. | Where employed. | Compensation. |
|---|---|---|---|---|
| *Secretary of State.* | | | | |
| **James G. Blaine** | Pennsylvania | Maine | Washington | $8,000 00 |
| *Assistant Secretary of State.* | | | | |
| Robert R. Hitt | Ohio | Illinois | Washington | 4,500 00 |
| *Second Assistant Secretary of State.* | | | | |
| William Hunter | Rhode Island | Rhode Island | Washington | 3,500 00 |
| *Third Assistant Secretary of State.* | | | | |
| Walker Blaine | Maine | Maine | Washington | 3,500 00 |
| *Chief Clerk.* | | | | |
| Sevellon A. Brown | New York | New York | Washington | 2,500 00 |
| *Chief of Diplomatic Bureau.* | | | | |
| Alvey A. Adee | New York | District of Columbia | Washington | 2,100 00 |
| *Chief of Consular Bureau.* | | | | |
| Francis O. St. Clair | New York | Maryland | Washington | 2,100 00 |
| *Chief of Bureau of Indexes and Archives.* | | | | |
| John H. Haswell | New York | New York | Washington | 2,100 00 |
| *Chief of Bureau of Accounts and Disbursing Clerk.* | | | | |
| Robert C. Morgan | New York | New York | Washington | 2,100 00 |
| *Chief of the Bureau of Statistics.* | | | | |
| Michael Scanlan* | Ireland | New York | Washington | 2,100 00 |
| *Translator.* | | | | |
| Henry L. Thomas | New York | New York | Washington | 2,100 00 |
| *Clerks.* | | | | |
| George Bartle | Virginia | Virginia | Washington | 1,800 00 |
| Edward Haywood | New York | New York | do | 1,800 00 |
| Alexander H. Clements | District of Columbia | District of Columbia | do | 1,800 00 |
| Newton Benedict | New York | New York | do | 1,800 00 |
| John J. Chew | District of Columbia | District of Columbia | do | 1,800 00 |
| Theodore F. Dwight | New York | California | do | 1,800 00 |
| Henry A. Blood | New Hampshire | New Hampshire | do | 1,800 00 |
| Francis J. Kieckhoefer | District of Columbia | District of Columbia | do | 1,800 00 |
| Charles S. Hill | Maryland | New York | do | 1,800 00 |
| Thomas H. Sherman | Maine | Maine | do | 1,800 00 |
| Prosper L. Shücking* | Germany | District of Columbia | do | 1,600 00 |
| Thomas Morrison* | Canada | New York | do | 1,600 00 |
| Henry P. Randolph | Virginia | Virginia | do | 1,600 00 |
| George L. Scarborough | Ohio | Connecticut | do | 1,600 00 |
| James R. O'Bryon | District of Columbia | District of Columbia | do | 1,400 00 |
| William A. Van Duzer | New York | New York | do | 1,400 00 |
| James Taggart | do | do | do | 1,400 00 |
| T. John Newton* | England | District of Columbia | do | 1,200 00 |
| Alfred Williams | Ohio | Ohio | do | 1,200 00 |
| Mary Markoe | District of Columbia | Maryland | do | 1,200 00 |
| William Russell | Connecticut | District of Columbia | do | 1,200 00 |
| Thomas W. Cridler | Virginia | West Virginia | do | 1,200 00 |
| Charles I. Rider | do | District of Columbia | do | 1,200 00 |
| John B. Hawes | New York | California | do | 1,200 00 |
| James B. Philp* | England | New York | do | 1,200 00 |
| Andrew H. Allen | New York | North Carolina | do | 1,200 00 |
| John A. Hervey | West Virginia | West Virginia | do | 1,200 00 |
| James Hall Colegate | District of Columbia | District of Columbia | do | 1,000 00 |
| E. Throop Martin | New York | New York | do | 1,000 00 |
| S. Leger A. Touhay* | France | District of Columbia | do | 1,000 00 |
| Robert S. Chilton, jr | District of Columbia | do | do | 1,000 00 |
| Thomas Griffin* | Ireland | do | do | 900 00 |
| Nellie M. Joselyn | Ohio | Indiana | do | 900 00 |
| Sue Hamilton Owen | Georgia | Georgia | do | 900 00 |
| Louisa A. Pratt | District of Columbia | Massachusetts | do | 900 00 |
| Ella T. Canfield | Kentucky | Illinois | do | 900 00 |
| Stella Yale | New York | New York | do | 900 00 |
| Stanislaus M. Hamilton | District of Columbia | District of Columbia | do | 900 00 |
| Charles McCarthy | do | do | do | 900 00 |
| Frank M. Lee | Maryland | Maryland | do | 900 00 |
| Edmund J. Moffat | New York | New York | do | 900 00 |

*Naturalized.

18



Notes: This figure shows an example page corresponding to the 1881 edition of the "Official Registers of the United States" (Department of the Interior, 1871-1893). The page lists employees of the State Department in Washington, DC.

## FIGURE A4: EXAMPLE EXAM QUESTIONS

### (A) ORTHOGRAPHY

*The Examiner pronounces each word and gives its definition as printed below. The competitor is required to write* ONLY THE WORD *and* NOT *its definition.*

1. *Speech.* An address; an oration.
2. *Impeach.* To accuse; to bring into question.
3. *Conceited.* Vain; opinionated.
4. *Seated.* Placed on a seat; fixed; settled.
5. *Dyeing.* The act of staining or coloring cloth.
6. *Dying.* Losing life; expiring.
7. *Mutable.* Changeable; capable of change.
8. *Diffidence.* The state of being diffident.
9. *Felicitate.* To make happy; to delight.
10. *Hesitate.* To pause; to delay.
11. *Commissary.* One delegated to some trust; an officer.
12. *Comical.* Droll; odd; ridiculous.
13. *Memorize.* To commit to memory.
14. *Disguise.* To mask; to muffle; to conceal the appearance of.
15. *Agreed.* Settled by consent.
16. *Impede.* To hinder; to delay; to retard.
17. *Perseverance.* Persistence in an undertaking; constancy.
18. *Interference.* A clashing; interposition; opposition.
19. *Consciously.* Knowingly.
20. *Guidance.* The act of guiding; direction.

### (B) PENMANSHIP

[N. B.—The mark on penmanship is determined by legibility, neatness, and general appearance, and by correctness and uniformity in the formation of words, letters, and punctuation marks in the 2nd Exercise of the Third Subject—Writing from plain copy—and in the Exercise of the Fourth Subject—Letter-writing.]

### (C) COPYING

One of the Examiners dictates an exercise of not less than ten lines so distinctly that all the persons being examined can hear him. The passage is first read for information, and then dictated in phrases of five or six words, at the rate of from fifteen to twenty-five words per minute. If from any cause the competitor misses a word, he is cautioned not to pause, but to leave a blank space and go on with the next words he hears. Three minutes are allowed after the dictation for punctuation and correction.

### (D) ARITHMETIC

Question 1. Add the following, placing the sum at the bottom:

79, 654, 321, 908. 35
47, 776, 013, 703. 30
92, 773, 331, 673. 25
7, 774, 910, 336. 15
44, 297, 794, 329. 37
6, 105, 733, 266. 59
232, 173. 63
8, 859, 367, 397. 45
42, 223, 001, 764. 86
63, 337, 476, 074. 03
2, 335, 602, 047. 90
293, 827, 764, 501. 77

### (E) METEOROLOGICAL CLERK

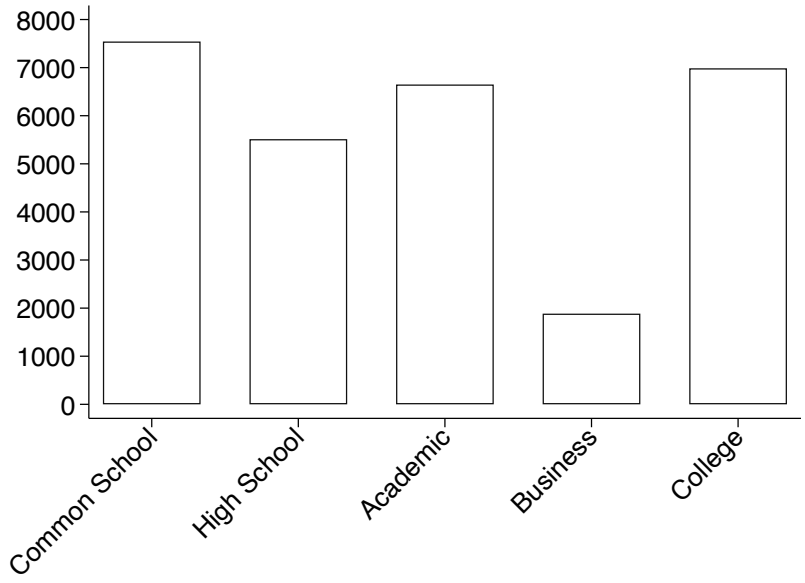
SIXTH SUBJECT.—*Meteorology.*

Question 1. What use is made of barometers by the Signal Service?
Question 2. Define an isothermal line.
Question 3. How does the sun heat the atmosphere?
Question 4. What instrument is used to measure the velocity of the wind?
Question 5. From what directions are the prevailing surface winds within the equatorial system?
Question 6. Give Loomis's explanation of the formation of dew.
Question 7. State the conditions that favor the formation of hoar frost.
Question 8. State the accepted classification of clouds.
Question 9. Define a storm.
Question 10. In what respect do cyclones or hurricanes differ from tornadoes?

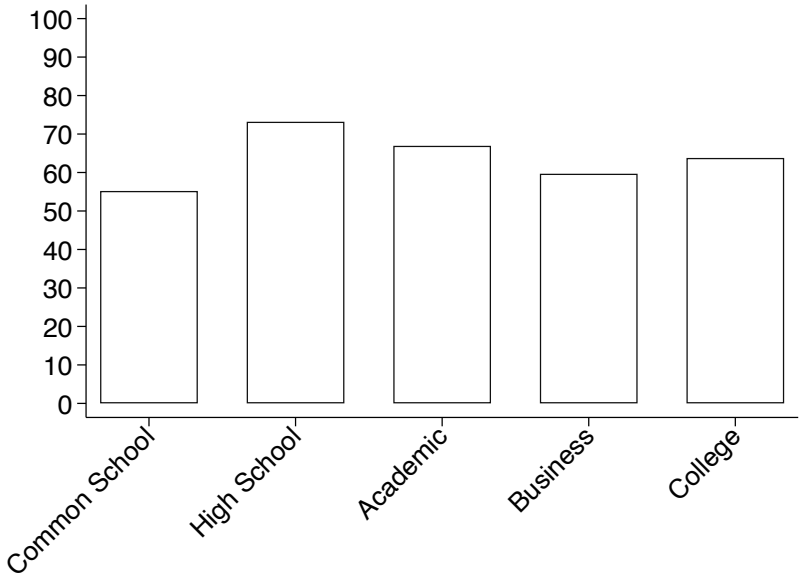
Notes: This figure shows example questions of the civil service exam. Panel (a) shows an example question of the orthography exam. This exam was required for all applicants taking either the "general" (for clerks) or "limited" (for copyists) examinations. Panels (b), (c) and (d) show example questions of the penmanship, copying and arithmetic exams, respectively. These exams were also required for applicants taking the general or the limited examinations. The figure in panel (e) shows an example question of the special exam for "meteorological clerks" in the Department of Agriculture. The figures are from the reports of the Civil Service Commission (Civil Service Commission, 1883-1893).

**FIGURE A5: TOTAL NUMBER OF APPLICANTS AND EXAM PASSING RATES, BY EDUCATIONAL BACKGROUND 1886-1893**

**(A) NUMBER OF APPLICANTS**




**(B) PASSING RATE**

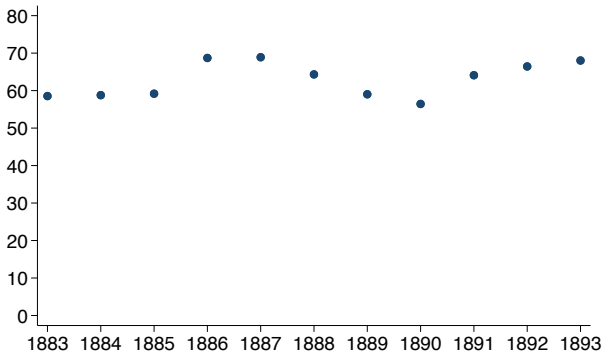



Notes: Panel (a) shows the number of applicants to the "Classified Departmental Service" in DC, by applicants' educational background. Panel (b) shows the fraction of such applicants who obtained a passing grade. These figures correspond to applicants who completed exams from 1886 to 1893, and are based on data from the "Annual Reports of the Civil Service Commission" (Civil Service Commission, 1883-1893).

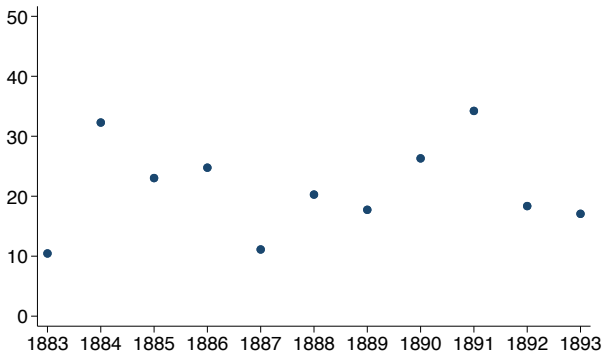
**FIGURE A6: NUMBER OF APPLICANTS, EXAM PASSING RATE AND APPOINTMENT RATE, BY YEAR**

**(A) NUMBER OF APPLICANTS**


**(B) PASSING RATE (%)**

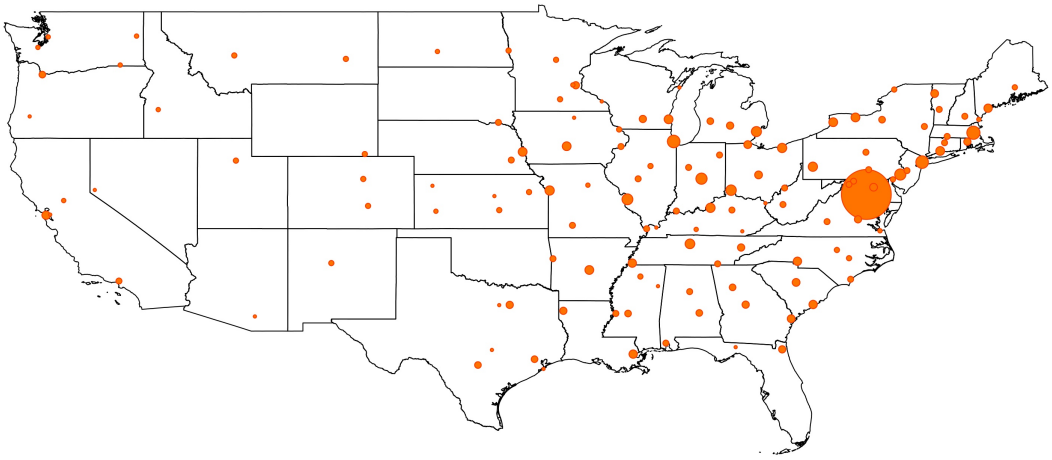



**(C) APPOINTMENT RATE (%)**




Notes: This figure shows the total number of applicants (Panel (a)), the share of applicants who obtained the minimum qualifying score (Panel (b)), and the share of appointed employees (out of those who obtained the minimum qualifying score) (Panel (c)). The data are limited to applicants to the classified departmental service in DC and are based on the Civil Service Commission reports (Civil Service Commission, 1883-1893).

## FIGURE A7: LOCATION OF CIVIL SERVICE EXAMS, 1886-1893



Notes: This map shows the location of all civil service exams that took place from 1886 to 1893. The circles are drawn in proportion to the number of exams that took place in each location. The largest circle corresponds to Washington, DC, which hosted more than 300 exams in the period. Data are from the reports of the Civil Service Commission (Civil Service Commission, 1883-1893).

## FIGURE A8: CALENDAR OF CLASSIFIED DEPARTMENTAL SERVICE EXAMINATIONS, 1886-1887

TABLE 1.—*Showing places and dates of examinations for the classified departmental service, January* 16, 1886, *to June* 30, 1887, *both inclusive.*

ALABAMA.
Montgomery, May 8, 1886.
Montgomery, December 20, 1886.
Mobile, December 10, 1886.

ARKANSAS.
Little Rock, May 4, 1886.
Little Rock, February 12, 1887.
Fort Smith, February 15, 1887.

CALIFORNIA.
San Francisco, April 20, 1886.
San Francisco, September 18, 1886.

COLORADO.
Denver, April 26, 1887.
Pueblo, May 11, 1887.

CONNECTICUT.
New Haven, August 5, 1886.
New Haven, May 5, 1887.
Hartford, May 19, 1887.

DISTRICT OF COLUMBIA.
January 25, 30, 1886.
February 8, 13, 18, 20, 24, 25, 27, 1886.
March 2, 6, 13, 17, 27, 1886.
April 2, 10, 13, 17, 19, 24, 1886.
May 8, 15, 19, 22, 29, 1886.
June 5, 8, 12, 19, 23, 26, 28, 1886.
July 2, 3, 8, 10, 12, 13, 14, 17, 19, 20, 22, 24, 26, 30, 31, 1886.
August 5, 6, 7, 11, 14, 19, 21, 28, 30, 31, 1886.
September 4, 9, 11, 18, 25, 1886.
October 9, 16, 23, 30, 1886.
November 6, 9, 13, 20, 27, 1886.
December 4, 8, 11, 16, 17, 18, 21, 23, 27, 1886.
January 3, 8, 13, 15, 22, 26, 29, 31, 1887.
February 5, 12, 19, 25, 26, 1887.
March 1, 4, 5, 6, 12, 17, 19, 26, 31, 1887.
April 2, 9, 16, 30, 1887.
May 7, 9, 14, 19, 21, 28, 1887.
June 4, 7, 9, 11, 22, 25, 1887.

FLORIDA.
Jacksonville, December 6, 1886.
Tallahassee, December 8, 1886.

GEORGIA.
Atlanta, May 11, 1886.
Atlanta, December 22, 1886.
Savannah, March 25, 1886.
Savannah, December 4, 1886.

IDAHO.
Boisé City, May 3, 1887.

ILLINOIS.
Bloomington, April 13, 1887.
Cairo, February 22, 1886.
Chicago, February 6, 1886.
Chicago, April 6, 16, 1886.
Chicago, August 5, 1886.
Chicago, September 29, 1886.

ILLINOIS—continued.
Chicago, April 12, 1887.
Springfield, May 3, 1886.

INDIANA.
Evansville, February 24, 1887.
Fort Wayne, March 18, 1887.
Indianapolis, April 6, 1886.
Indianapolis, May 5, 1886.
Indianapolis, August 7, 19, 1886.
Indianapolis, April 9, 1887.
La Fayette, April 11, 1887.

IOWA.
Davenport, April 15, 1887.
Des Moines, April 24, 1886.
Des Moines, April 18, 1887.
Mason City, April 19, 1887.

KANSAS.
Newton, May 14, 1887.
Topeka, May 17, 1887.

KENTUCKY.
Lexington, February 3, 1887.
Louisville, April 6, 1886.
Louisville, June 29, 1886.
Louisville, February 5, 1887.

LOUISIANA.
New Orleans, July 16, 1886.
New Orleans, December 13, 1886.

MAINE.
Portland, May 24, 1886.
Portland, November 18, 1886.
Portland, May 12, 1887.

MARYLAND.
Baltimore, January 22, 1887.
Hagerstown, May 12, 1887.

MASSACHUSETTS.
Boston, February 16, 1887.
Boston, April 6, 1886.
Boston, July 22, 1886.
Boston, August 4, 1886.
Boston, May 9, 1887.
Springfield, May 18, 1887.

MICHIGAN.
Detroit, April 6, 24, 1886.
Detroit, August 3, 1886.
Detroit, March 11, 1887.
Grand Rapids, March 16, 1887.
Lansing, March 14, 1887.

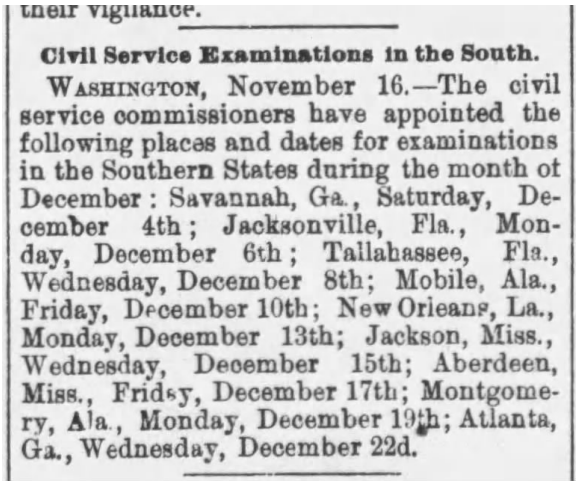
MINNESOTA.
Mankato, April 21, 1887.
Minneapolis, April 6, 22, 1886.
Saint Paul, April 23, 1886.

MISSISSIPPI.
Aberdeen, December 17, 1886.
Jackson, May 6, 1886.
Jackson, December 15, 1886.

Notes: This figure shows an example calendar of examinations to join the classified departmental service. The calendar corresponds to the 1887 fiscal year. The calendar is from the 1886 report of the Civil Service Commission (Civil Service Commission, 1886).

**FIGURE A9: EXAMPLE NEWSPAPER ARTICLES ADVERTISING THE EXAMS**

**(A) THE MACON TELEGRAPH, 11/17/1886**

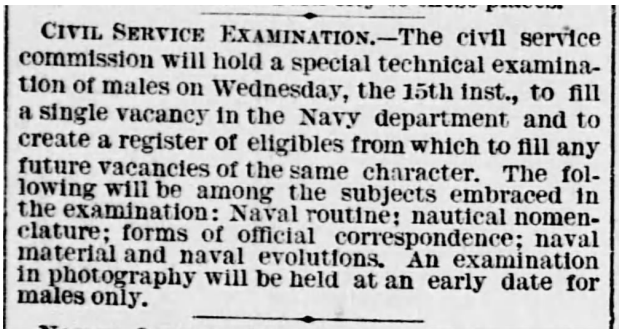


their vigilance.

**Civil Service Examinations in the South.**

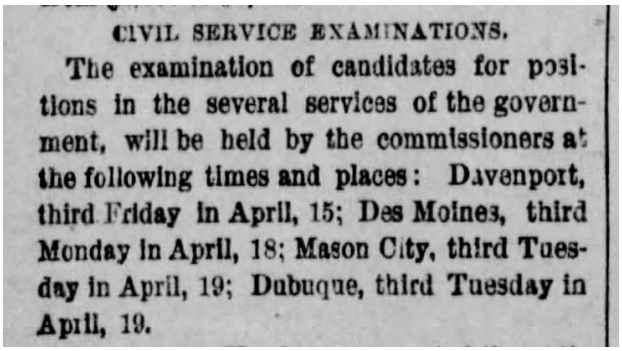
WASHINGTON, November 16.—The civil service commissioners have appointed the following places and dates for examinations in the Southern States during the month of December: Savannah, Ga., Saturday, December 4th; Jacksonville, Fla., Monday, December 6th; Tallahassee, Fla., Wednesday, December 8th; Mobile, Ala., Friday, December 10th; New Orleans, La., Monday, December 13th; Jackson, Miss., Wednesday, December 15th; Aberdeen, Miss., Friday, December 17th; Montgomery, Ala., Monday, December 19th; Atlanta, Ga., Wednesday, December 22d.

**(B) THE EVENING STAR, 12/10/1886**



CIVIL SERVICE EXAMINATION.—The civil service commission will hold a special technical examination of males on Wednesday, the 15th inst., to fill a single vacancy in the Navy department and to create a register of eligibles from which to fill any future vacancies of the same character. The following will be among the subjects embraced in the examination: Naval routine; nautical nomenclature; forms of official correspondence; naval material and naval evolutions. An examination in photography will be held at an early date for males only.

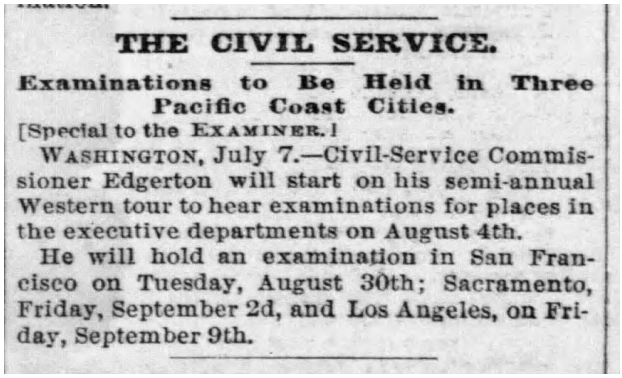
**(C) THE DES MOINES REGISTER, 2/5/1887**



CIVIL SERVICE EXAMINATIONS.

The examination of candidates for positions in the several services of the government, will be held by the commissioners at the following times and places: Davenport, third Friday in April, 15; Des Moines, third Monday in April, 18; Mason City, third Tuesday in April, 19; Dubuque, third Tuesday in April, 19.

**(D) THE SAN FRANCISCO EXAMINER, 7/8/1887**



**THE CIVIL SERVICE.**

**Examinations to Be Held in Three Pacific Coast Cities.**

[Special to the EXAMINER.]

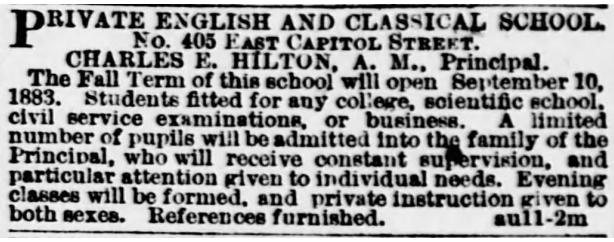
WASHINGTON, July 7.—Civil-Service Commissioner Edgerton will start on his semi-annual Western tour to hear examinations for places in the executive departments on August 4th.

He will hold an examination in San Francisco on Tuesday, August 30th; Sacramento, Friday, September 2d, and Los Angeles, on Friday, September 9th.

Notes: This figure shows example articles in which local newspapers announced the dates and location of the civil service exams. The images are from Newspapers.com.

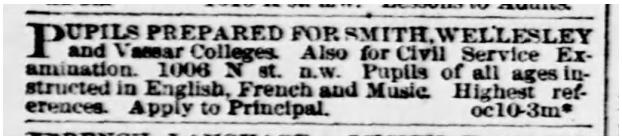
## FIGURE A10: EXAMPLE NEWSPAPER ARTICLES ADVERTISING TUTORING SERVICES FOR THE EXAMS

(A) EVENING STAR, 9/19/1883



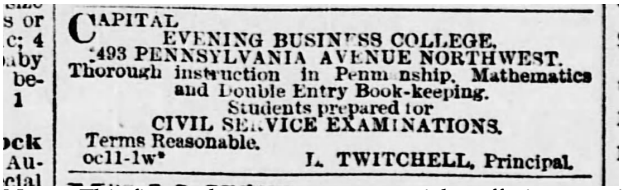
PRIVATE ENGLISH AND CLASSICAL SCHOOL.
No. 405 EAST CAPITOL STREET.
CHARLES E. HILTON, A. M., Principal.
The Fall Term of this school will open September 10, 1883. Students fitted for any college, scientific school, civil service examinations, or business. A limited number of pupils will be admitted into the family of the Principal, who will receive constant supervision, and particular attention given to individual needs. Evening classes will be formed, and private instruction given to both sexes. References furnished. aul1-2m

(B) EVENING STAR, 10/17/1884



PUPILS PREPARED FOR SMITH, WELLESLEY and Vassar Colleges. Also for Civil Service Examination. 1006 N st. n.w. Pupils of all ages instructed in English, French and Music. Highest references. Apply to Principal. oc10-3m*

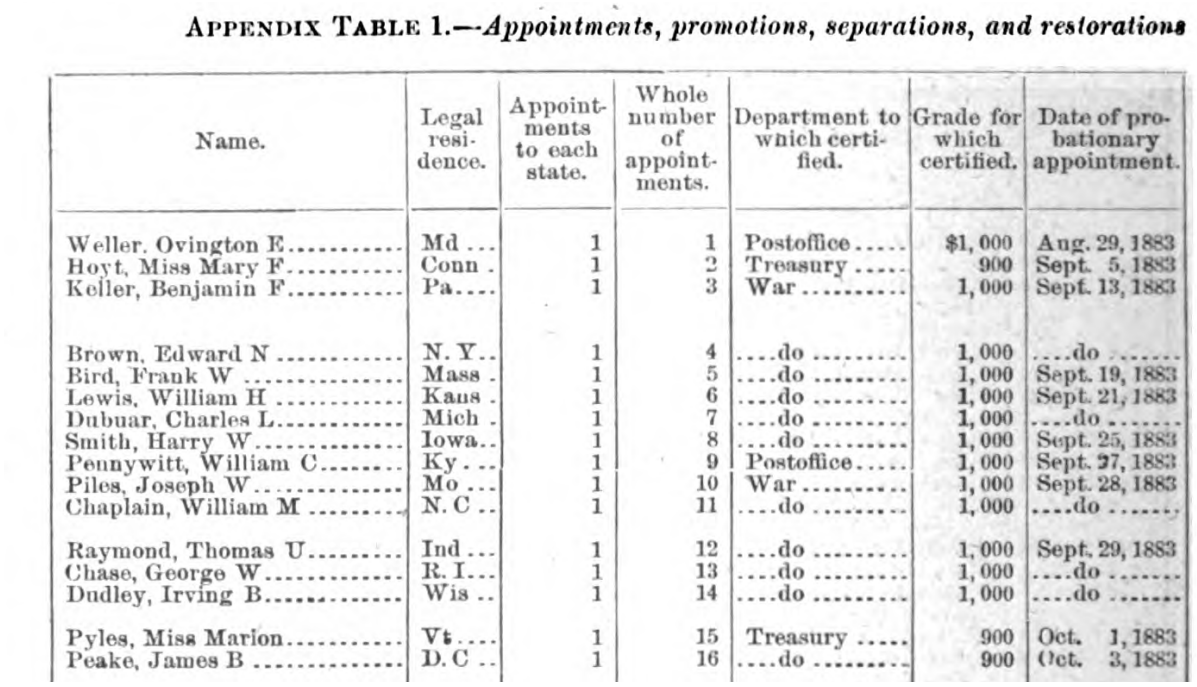
(C) EVENING STAR, 1/13/1886



CAPITAL
EVENING BUSINESS COLLEGE,
493 PENNSYLVANIA AVENUE NORTHWEST.
Thorough instruction in Penmanship, Mathematics and Double Entry Book-keeping.
Students prepared for
CIVIL SERVICE EXAMINATIONS.
Terms Reasonable.
oc11-1w* L. TWITCHELL, Principal.

Notes: This figure shows newspaper articles offering tutoring services for applicants to the civil service. The images are from Newspapers.com.

## FIGURE A11: EMPLOYEES APPOINTED THROUGH EXAMS TO THE CLASSIFIED DEPARTMENTAL SERVICE



APPENDIX TABLE 1.—*Appointments, promotions, separations, and restorations*

| Name. | Legal residence. | Appointments to each state. | Whole number of appointments. | Department to which certified. | Grade for which certified. | Date of probationary appointment. |
|---|---|---|---|---|---|---|
| Weller, Ovington E | Md | 1 | 1 | Postoffice | $1,000 | Aug. 29, 1883 |
| Hoyt, Miss Mary F | Conn | 1 | 2 | Treasury | 900 | Sept. 5, 1883 |
| Keller, Benjamin F | Pa | 1 | 3 | War | 1,000 | Sept. 13, 1883 |
| Brown, Edward N | N. Y. | 1 | 4 | do | 1,000 | do |
| Bird, Frank W | Mass | 1 | 5 | do | 1,000 | Sept. 19, 1883 |
| Lewis, William H | Kans | 1 | 6 | do | 1,000 | Sept. 21, 1883 |
| Dubuar, Charles L | Mich | 1 | 7 | do | 1,000 | do |
| Smith, Harry W | Iowa | 1 | 8 | do | 1,000 | Sept. 25, 1883 |
| Pennywitt, William C | Ky | 1 | 9 | Postoffice | 1,000 | Sept. 27, 1883 |
| Piles, Joseph W | Mo | 1 | 10 | War | 1,000 | Sept. 28, 1883 |
| Chaplain, William M | N. C | 1 | 11 | do | 1,000 | do |
| Raymond, Thomas U | Ind | 1 | 12 | do | 1,000 | Sept. 29, 1883 |
| Chase, George W | R. I | 1 | 13 | do | 1,000 | do |
| Dudley, Irving B | Wis | 1 | 14 | do | 1,000 | do |
| Pyles, Miss Marion | Vt | 1 | 15 | Treasury | 900 | Oct. 1, 1883 |
| Peake, James B | D. C | 1 | 16 | do | 900 | Oct. 3, 1883 |

Notes: This figure shows an example page listing employees appointed to the classified departmental service. This page is from the 1886 report of the Civil Service Commission (Civil Service Commission, 1886).

## FIGURE A12: POSITIONS SUBJECT TO EXAMS IN THE TREASURY DEPARTMENT



IN THE TREASURY DEPARTMENT AT WASHINGTON.

[June 30, 1892.]

CLASSIFIED SERVICE.

| | Yearly salary. | Aggregate yearly salary. |
|---|---|---|
| I. *Places classified and excepted from examination.* | | |
| 1 adjuster of accounts | $2,000 | $2,000.00 |
| 1 adjuster | 1,500 | 1,500.00 |
| 1 assayer | 2,200 | 2,200.00 |
| 1 assistant and chief clerk | 2,500 | 2,500.00 |
| 1 assistant cashier | 3,200 | 3,200.00 |
| 1 assistant in charge of office and topography, Coast Survey | 2,000 | 2,000.00 |
| 1 assistant superintendent Treasury building | 2,100 | 2,100.00 |
| 2 assistant tellers | 2,250 | 4,500.00 |
| 1 attendant | 720 | 720.00 |
| 4 binders at $4 per diem | ..... | 5,840.00 |
| 2 binders | 900 | 1,800.00 |
| 10 binders | 840 | 8,400.00 |
| 1 bond clerk | 1,600 | 1,600.00 |
| 11 cabinetmakers | 1,000 | 11,000.00 |
| 1 cabinetmaker | 720 | 720.00 |
| 1 chief clerk | 3,000 | 3,000.00 |
| 2 chief clerks | 2,500 | 5,000.00 |
| 1 chief clerk | 2,400 | 2,400.00 |
| 1 chief clerk | 2,250 | 2,250.00 |
| 2 chief clerks | 2,000 | 4,000.00 |
| 1 chief clerk | 1,800 | 1,800.00 |
| 1 cashier | 3,600 | 3,600.00 |
| 1 chief of Bureau of Engraving and Printing | 4,500 | 4,500.00 |
| 1 chief of division | 3,500 | 3,500.00 |
| 2 chiefs of divisions | 3,000 | 6,000.00 |
| 2 chiefs of divisions | 2,750 | 5,500.00 |
| 16 chief of divisions | 2,500 | 40,000.00 |
| 6 chiefs of divisions | 2,250 | 13,500.00 |
| 4 chiefs of divisions | 2,200 | 8,800.00 |
| 13 chiefs of divisions | 2,100 | 27,300.00 |
| 36 chiefs of divisions | 2,000 | 72,000.00 |
| 1 chief of division | 1,800 | 1,800.00 |
| 1 chief of division | 1,400 | 1,400.00 |
| 1 chief of division at $9.60 per diem | ..... | 3,004.80 |
| 1 clerk to Treasurer | 1,800 | 1,800.00 |
| 1 clerk to Secretary | 2,400 | 2,400.00 |
| 1 clerk to disbursing clerk | 1,200 | 1,200.00 |
| 1 coin clerk | 1,400 | 1,400.00 |
| 1 deputy head of bureau | 3,200 | 3,200.00 |
| 1 deputy head of bureau | 2,800 | 2,800.00 |
| 1 deputy head of bureau | 2,000 | 2,000.00 |
| 2 disbursing clerks | 2,500 | 5,000.00 |
| 2 disbursing clerks | 2,000 | 4,000.00 |
| 1 distributer of stock | 1,252 | 1,252.00 |
| 1 distributer of stock | 1,200 | 1,200.00 |
| 1 electrotyper and photographer | 1,800 | 1,800.00 |
| 4 elevator conductors | 720 | 2,880.00 |
| 1 examiner | 2,500 | 2,500.00 |
| 1 foreman of bindery, at $5 per diem | ..... | 1,825.00 |
| 1 foreman of laborers | 1,000 | 1,000.00 |
| 1 foreman of cabinet shop | 1,500 | 1,500.00 |
| 1 Government actuary | 1,800 | 1,800.00 |
| 1 inspector of furniture | 3,000 | 3,000.00 |
| 1 mechanician | 1,250 | 1,250.00 |
| 1 plate printer | 1,600 | 1,600.00 |
| 4 plate printers | 1,000 | 4,000.00 |
| 2 plate printers | 900 | 1,800.00 |
| 366 plate printers, piece rates | ..... | *457,473.09 |
| 4 plate printer's helpers | 700 | 2,800.00 |
| 3 private secretaries to assistant secretaries | 1,800 | 5,400.00 |
| 1 skilled laborer | 840 | 840.00 |
| 3 skilled laborers | 720 | 2,160.00 |
| 1 superintendent stamp vault | 2,000 | 2,000.00 |
| 1 superintendent national currency | 3,500 | 3,500.00 |
| 1 superintendent national bank redemption agency | 3,500 | 3,500.00 |
| 3 tellers | 2,500 | 7,500.00 |
| 1 topographer and hydrographer | 1,800 | 1,800.00 |
| 1 vault clerk | 2,500 | 2,500.00 |
| 39 engravers, various salaries | ..... | *68,041.80 |
| 2 apprentices to engraving | 320 | 640.00 |
| 1 apprentice to engraving | 780 | 780.00 |
| 2 apprentices to pressmen | 320 | 640.00 |

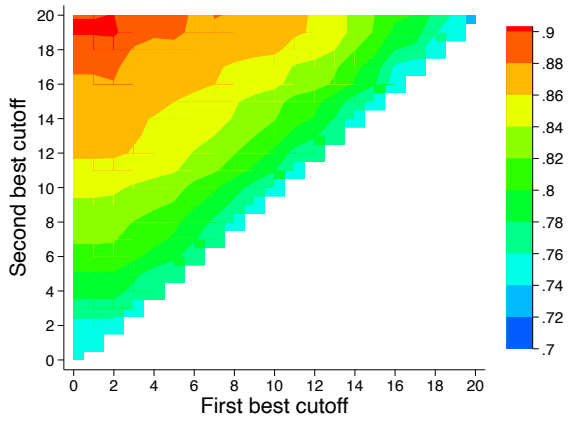
*The amount of compensation paid them during the fiscal year 1892.



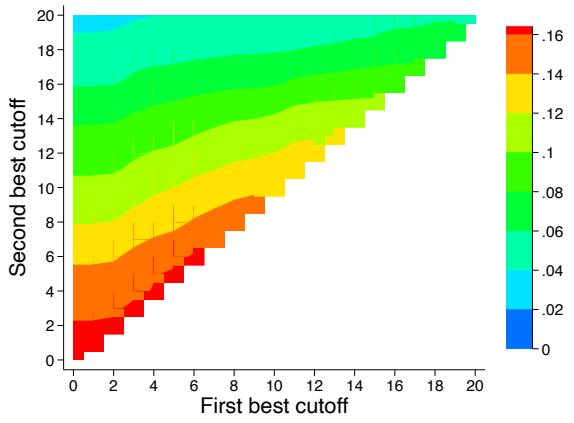
Notes: This figure shows an example page listing the positions that were subject to exams in the Department of the Treasury. This page is from the 1892 report of the Civil Service Commission (Civil Service Commission, 1892).

## FIGURE A13: ASSESSING THE PERFORMANCE OF THE LINKING ALGORITHM

**(A) % MATCHES WITH MATCHING PLACE OF RESIDENCE**



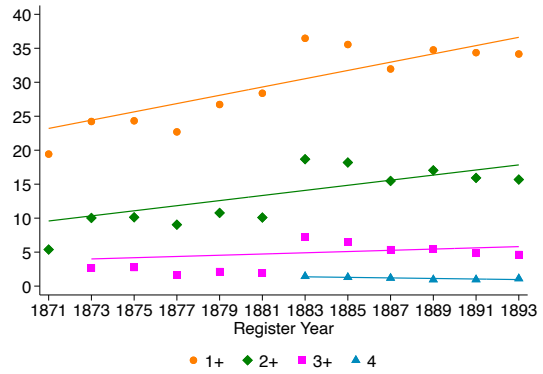

**(B) % OBSERVATIONS WITH MATCHING PLACE OF RESIDENCE**



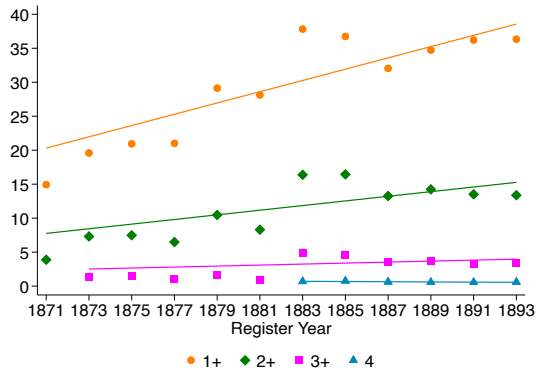

Notes: Panel (a) shows, out of all the individuals who are *linked* from the 1881 Register to the 1880 census, the proportion who are linked to someone living in a "correct" 1880 county of residence. "Correct" counties of residence are those in the DC-Baltimore metropolitan area. Panel (b) shows, out of *all* the individuals that we attempt to link from the 1881 register to the 1880 census, the proportion who are linked to someone living in a "correct" county of residence. These two statistics are plotted as a function of the parameters that we use to determine whether or not we consider an observation as a link. See A for more details on the choice of these parameters. The sample is restricted to workers in the Executive Departments in DC in the 1881 Register.

## FIGURE A14: MATCHING RATES, BY REGISTER YEAR

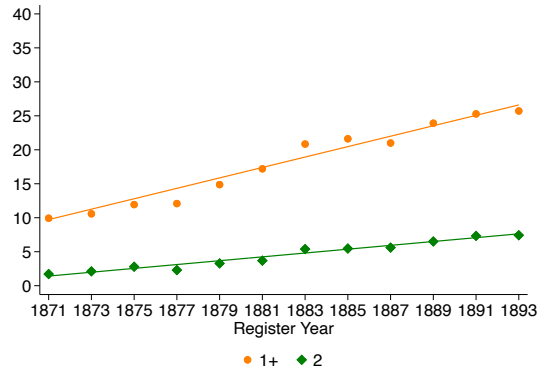
### (A) % MATCHED, MALE EMPLOYEES



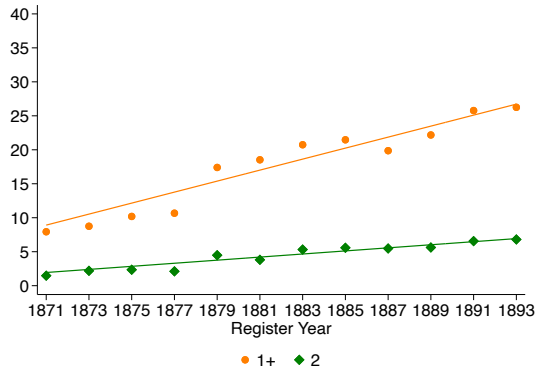

### (B) % MATCHED, FEMALE EMPLOYEES



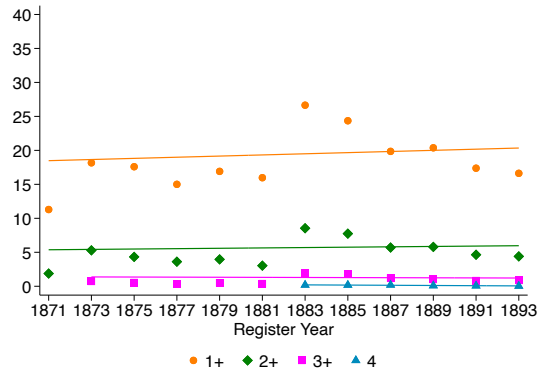

### (C) % MATCHED AS $<18$ YEAR OLD, MALES



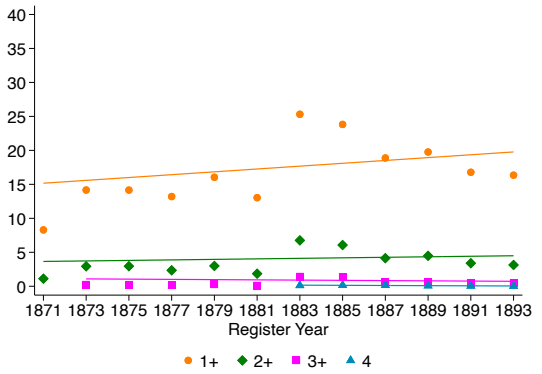

### (D) % MATCHED AS $<18$ YEAR OLD, FEMALES




### (E) % MATCHED AS $18+$ YEAR OLD, MALES




### (F) % MATCHED AS $18+$ YEAR OLD, FEMALES

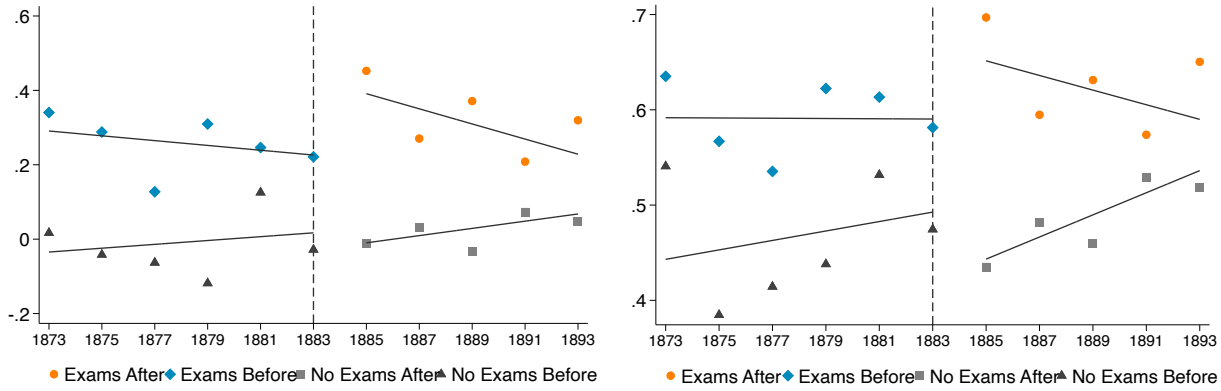



Notes: Panel (a) shows the proportion of male employees that we match to at least one, at least two, at least three or exactly four censuses in our baseline sample, by register year. Panel (c) shows the corresponding proportion when limiting the set of links to those in which employees were less than 18 year old at the time we observe them in the census (that is, the sample we use to measure employees' parental characteristics), whereas panel (e) shows such proportion when we only consider links in which employees were 18 or more (that is, the sample we use to measure workers' occupations prior to joining the civil service). Panels (b), (d) and (f) repeat the analysis for female employees. In all cases, we only include matches to population censuses that took place before the corresponding register. Note that individuals cannot be matched to more than two censuses while still being less than 18 years old (since censuses were conducted every 10 years). The sample is restricted to employees in the Executive Departments in DC.

# B Additional Results

**FIGURE B1: SUMMARY INDEX OF SOCIOECONOMIC BACKGROUND AND PARENTAL WEALTH RANKS, BEFORE AND AFTER THE REFORM**

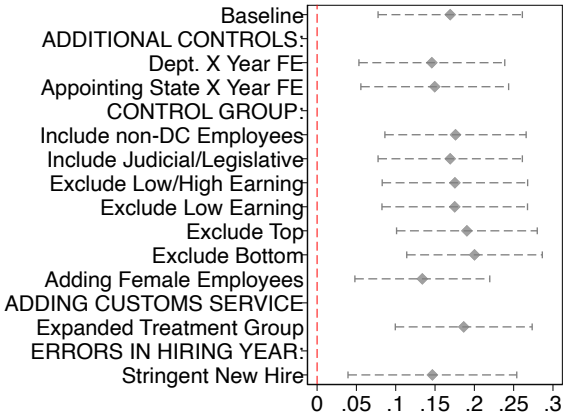
**(A) SUMMARY INDEX** **(B) PARENTAL WEALTH RANK**



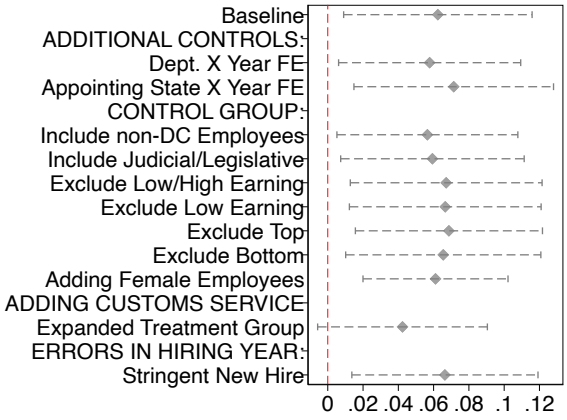

Notes: Panel (a) shows the average value of the summary index of employees' socioeconomic background (constructed using the approach in Kling *et al.* (2007)) for workers in positions subject and non-subject to exam, by hiring year. The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. Panel (b) shows the corresponding figure for average parental wealth ranks. Positions are coded as subject to exam if they required an exam after 1883 (the year of the reform). The sample is restricted to newly hired employees in the Executive Departments in DC.

**FIGURE B2: EFFECTS OF THE REFORM ON EMPLOYEES' CHARACTERISTICS, DIFFERENCE-IN-DIFFERENCES ESTIMATES: ROBUSTNESS TO ALTERNATIVE SPECIFICATIONS AND SAMPLES**

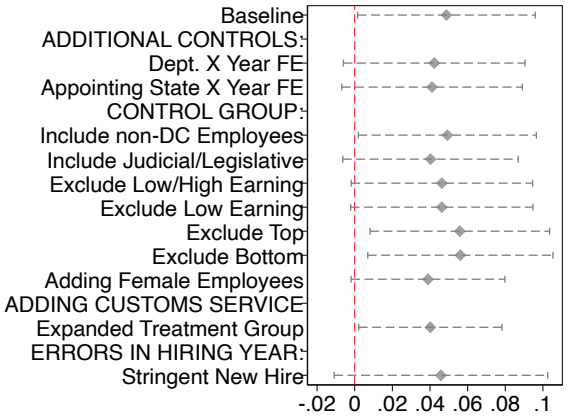
**(A) SUMMARY INDEX**



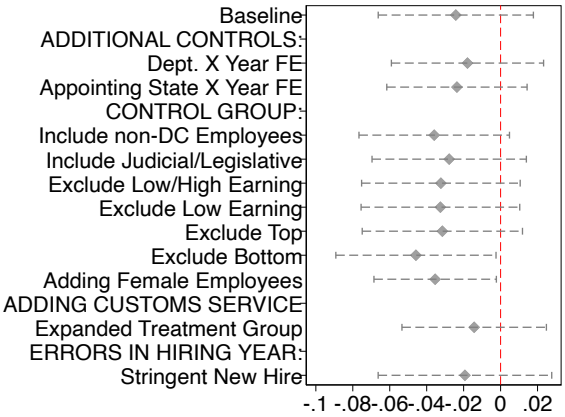

**(B) FATHER WEALTH RANK**



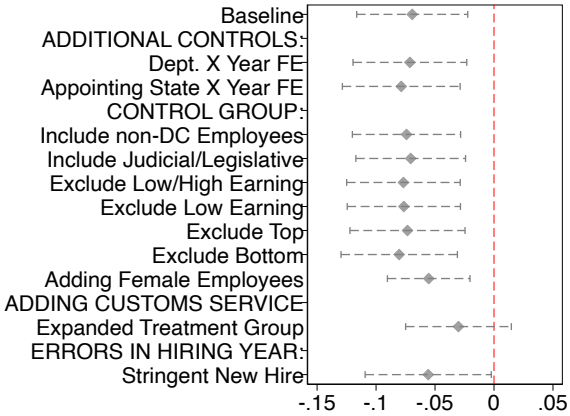

**(C) FATHER PROFESSIONAL**



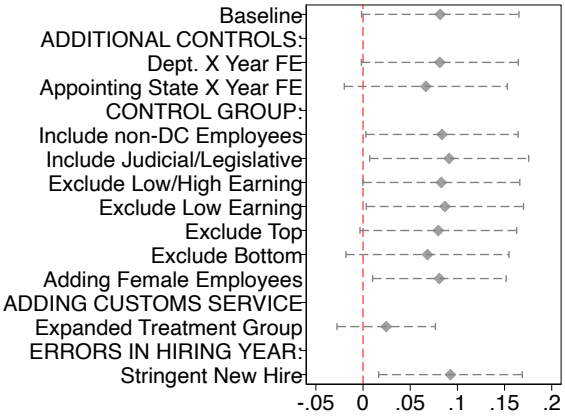

**(D) FATHER UNSKILLED**



**(E) IMMIGRANT PARENTS**



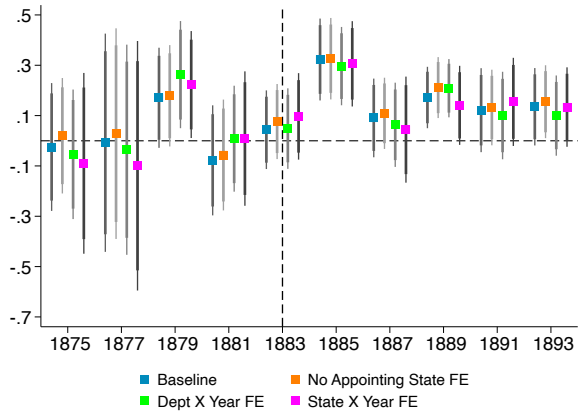

**(F) OWN OCCUPATION PROFESSIONAL**



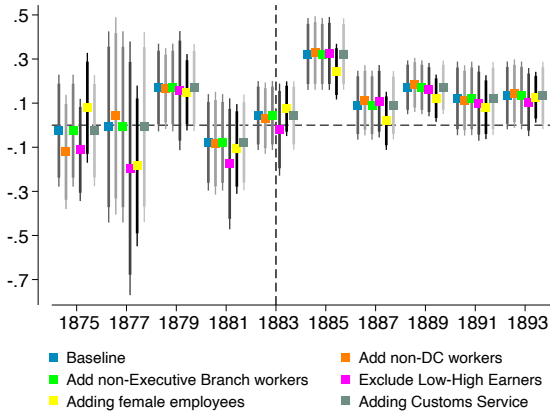

Notes: This figure presents the sensitivity of our difference-in-differences estimates to a number of alternative specifications and samples. The top row in each figure presents our baseline estimate. Each panel corresponds to a different outcome variable. In the rows under "Additional controls", we add additional control variables to our baseline specification: (1) Department $\times$ hiring-year fixed effects, and (2) state of residence at the time of appointment $\times$ hiring-year fixed effects. In the row under "Control group", we use alternative definitions of the control group: (1) Including workers outside of DC, (2) including workers in the Judicial and Legislative branches of government, (3) excluding employees making less than \$600 or more than \$3000, (4) excluding employees making less than \$600, (5) excluding workers who were exempted from exams due to their low salaries, (6) excluding those who were exempted from exams due to being in hierarchical positions, and (7) adding female employees (both in the treatment and control group) to the sample. In the row under "Adding Customs Service", we use a expanded definition of the treatment group which includes employees in the "classified Customs Service" (that is, the workers in the Customs Service who worked in positions subject to exams). In the row under "Errors in hiring year", we use a more stringent definition of which observations we consider to be a new hire.

**FIGURE B3: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, EVENT STUDY: ROBUSTNESS TO ALTERNATIVE SPECIFICATIONS AND SAMPLES**

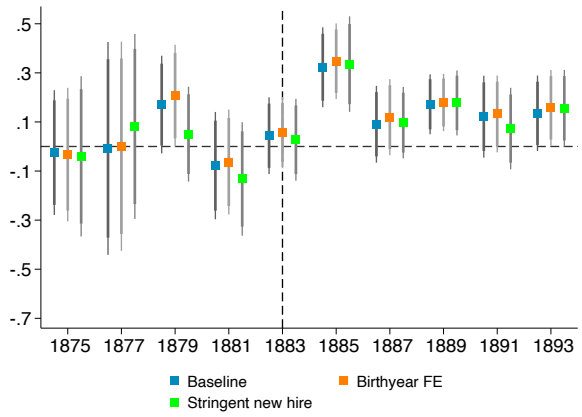
**(A) ADDITIONAL CONTROL VARIABLES**




**(B) ALTERNATIVE CONTROL GROUPS**

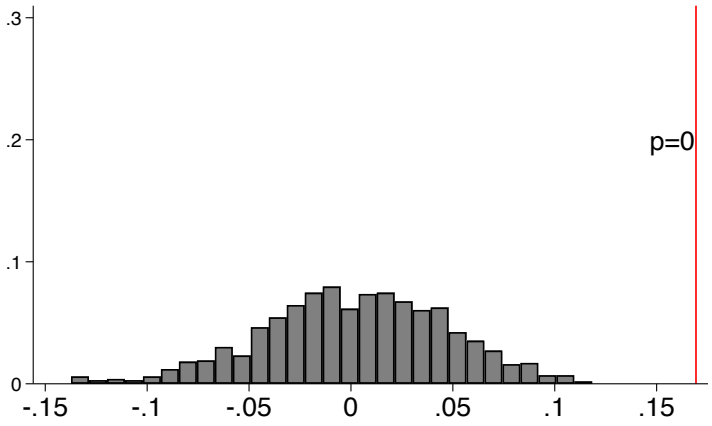



**(C) ERRORS IN HIRING YEAR**



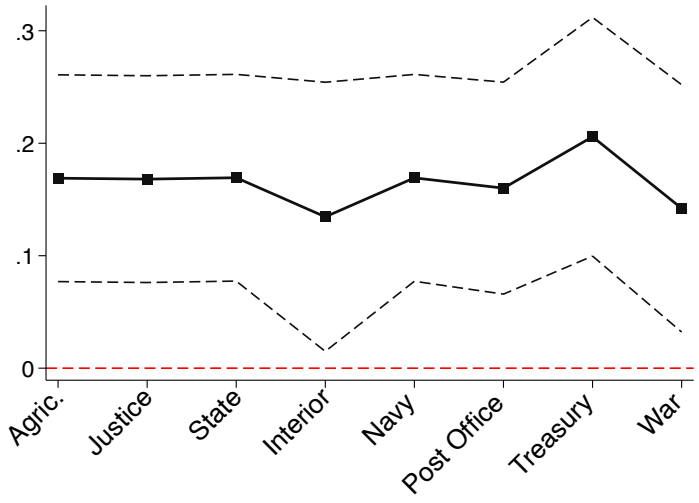

Notes: This figure presents the sensitivity of our event-study estimates to a number of alternative specifications and samples. See notes to Figure B2 for details on the specifications included. The dependent variable in an index of workers' socioeconomic backgrounds computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status.

**FIGURE B4: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: RANDOMIZATION INFERENCE**



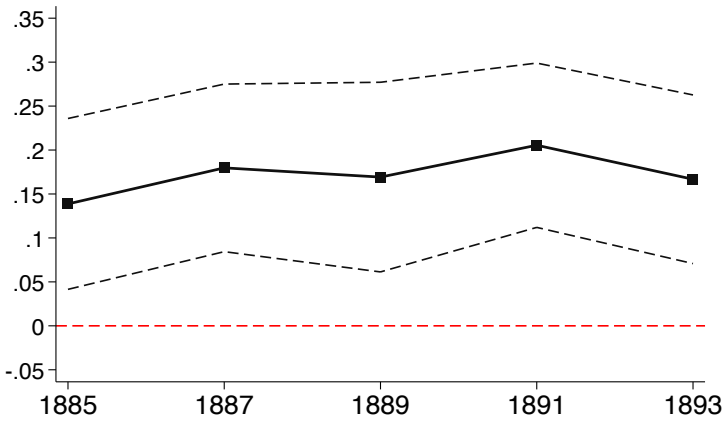

Notes: The outcome variable is the summary index of socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. This figure shows the empirical distribution of estimated effects when we implement a randomization inference approach. In this exercise, we randomly select a group of workers as the treatment group and estimate the "effects" of the reform using our baseline differences-in-differences model. We repeat this exercise 1,000 times and plot the empirical distribution of estimated effects. The vertical red line corresponds to the estimated effect when we use the actual set of treated employees. The sample is restricted to newly hired employees in the Executive Departments in DC.

**FIGURE B5: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: ROBUSTNESS TO EXCLUDING ONE DEPARTMENT AT A TIME**




Notes: This figure shows the sensitivity of the effects of the reform on the summary index of socioeconomic background (computed using the approach in Kling *et al.* (2007)) to excluding workers from one executive department at a time. The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. The y-axis shows the estimated effect of exams on the summary index, whereas the x-axis shows the excluded department. The estimated effects are plotted around a 95% confidence interval. The sample is restricted to newly hired employees in the Executive Departments in DC.

**FIGURE B6: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: ROBUSTNESS TO EXCLUDING ONE POST-REFORM YEAR AT A TIME**




Notes: This figure shows the sensitivity of the effects of the reform on the summary index of socioeconomic background (computed using the approach in Kling *et al.* (2007)) to excluding one post-reform year at a time. The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. The y-axis shows the estimated difference-in-differences effects of exams on the summary index of socioeconomic background, whereas the x-axis shows the excluded post-reform year. The estimated effects are plotted around a 95% confidence interval. The sample is restricted to newly hired employees in the Executive Departments in DC.

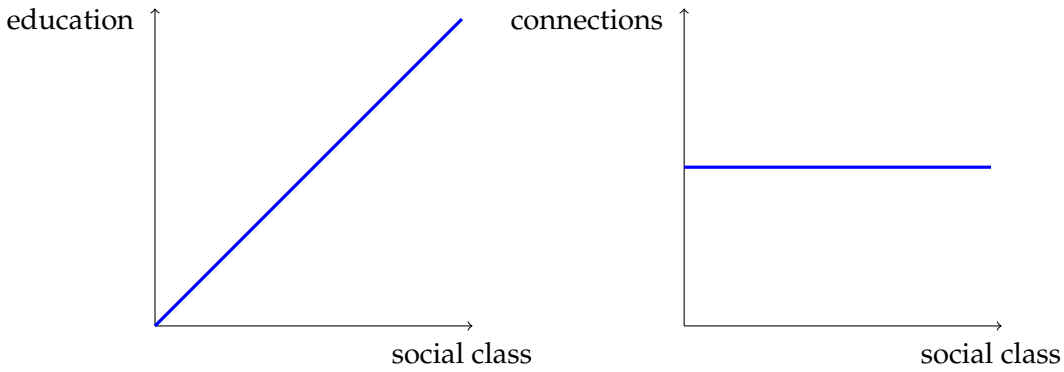
**TABLE B1: SAMPLE CONSTRUCTION**

| | N | % |
|---|---|---|
| Employee-Years in Executive Departments in DC (1873-1893) | 99282 | 100 |
| New Hires | 42545 | 42.85 |
| With Information on Parental Occupations | 7439 | 17.49 |
| Males | 5052 | 11.87 |
| With Information on Parental Wealth | 4590 | 10.79 |
| Males | 3074 | 7.23 |
| With Information on Own Occupation | 4990 | 11.73 |
| Males | 3623 | 8.52 |

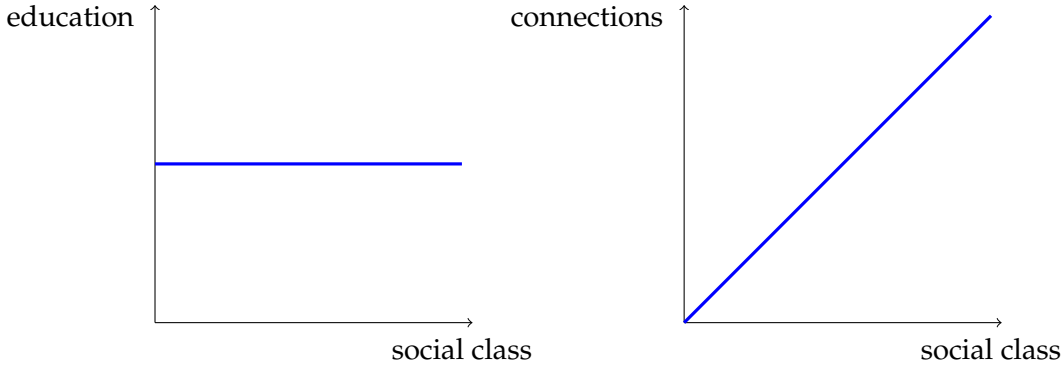
Notes: This table shows the construction of our baseline sample. We start from a list of employees who worked in the Executive Departments in DC in the 1873-1893 period. We then restrict this sample to those who are new hires, which we identify by comparing the employee rosters in adjacent Registers. The table then reports the fraction of these individuals for whom we observe parental occupations, parental wealth and own occupation prior to joining the civil service. Parental wealth is less frequently observed than parental occupations as it was only reported in the 1860 and 1870 censuses, whereas parental occupations are observed in every census year from 1850 to 1880.

**FIGURE B7: AMBIGUOUS RELATIONSHIP BETWEEN EXAMS AND WORKERS' EXPECTED SOCIOECONOMIC BACKGROUNDS**

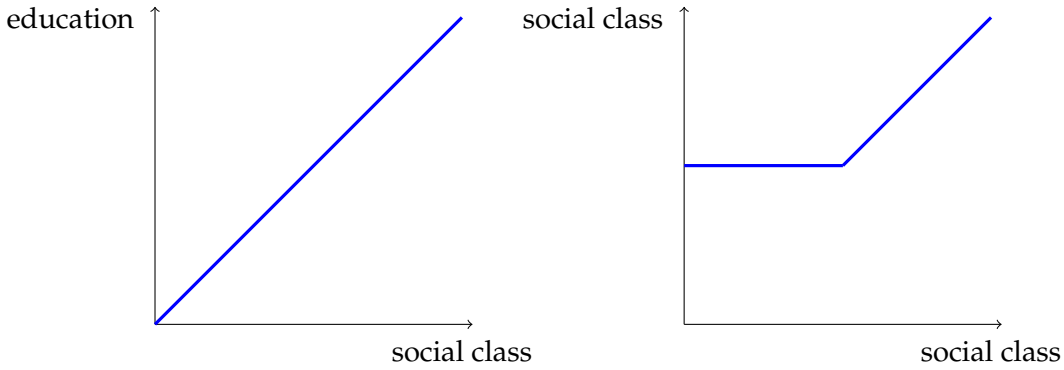
**(A) EXAMS HELP THE "RICH"**




**(B) EXAMS HELP THE "POOR"**



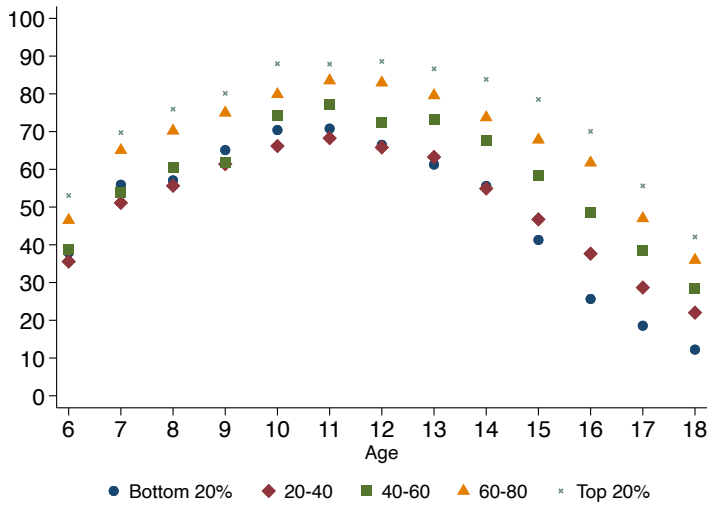

**(C) EXAMS HELP THE "MIDDLE"**



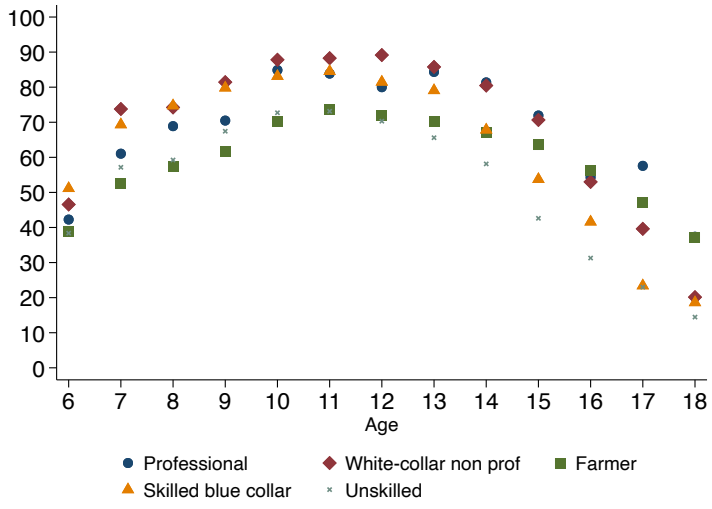

Notes: These figures illustrate the ambiguous relationship between the introduction of exams and the representation of workers from different socioeconomic backgrounds in government jobs. Each panel depicts a hypothetical relationship between applicants' social class and education (on the left) and social class and connections (on the right). In our conceptual framework, workers are hired if they are among the top $t\%$ applicants in terms of their combined value of education and connections. We conceptualize the reform as an increase in the relative weight of education in the hiring process.

**FIGURE B8: SCHOOL ATTENDANCE RATES (%) BY AGE AND PARENTAL CHARACTERISTICS, 1870 CENSUS**

**(A) BY PARENTAL WEALTH**



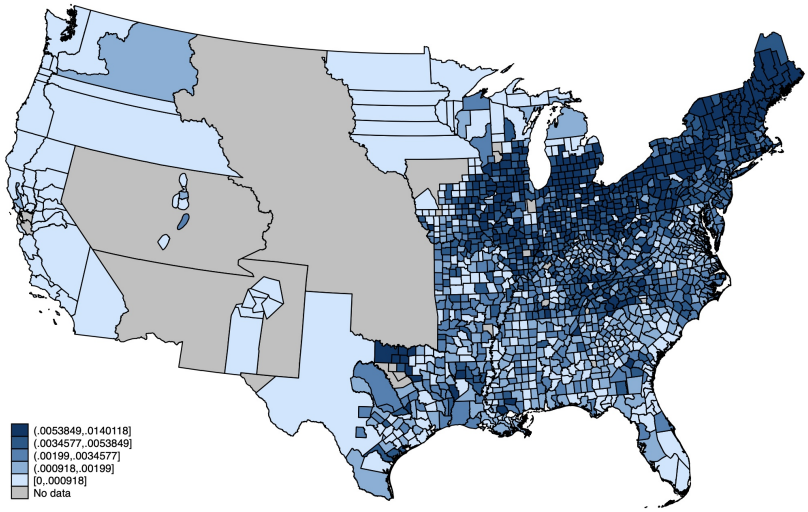

**(B) BY PARENTAL OCCUPATIONS**



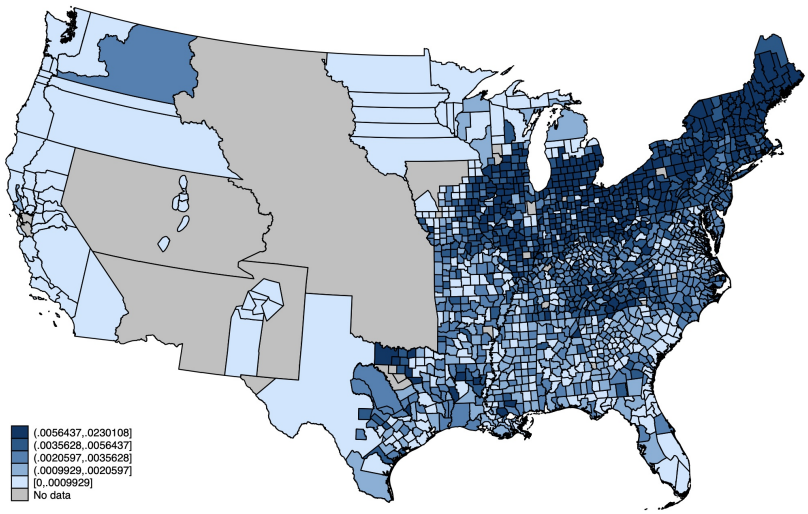

Notes: Panel (a) shows school attendance rates for children of different ages, based on the wealth quintile of their parents. Panel (b) shows the corresponding rates by parental occupation. Both figures are based on a random sample from the 1870 population census (Ruggles *et al.*, 2021).

## FIGURE B9: PER CAPITA SCHOOLS AND PER CAPITA TEACHERS IN 1850, BY COUNTY

### (A) SCHOOLS PER CAPITA



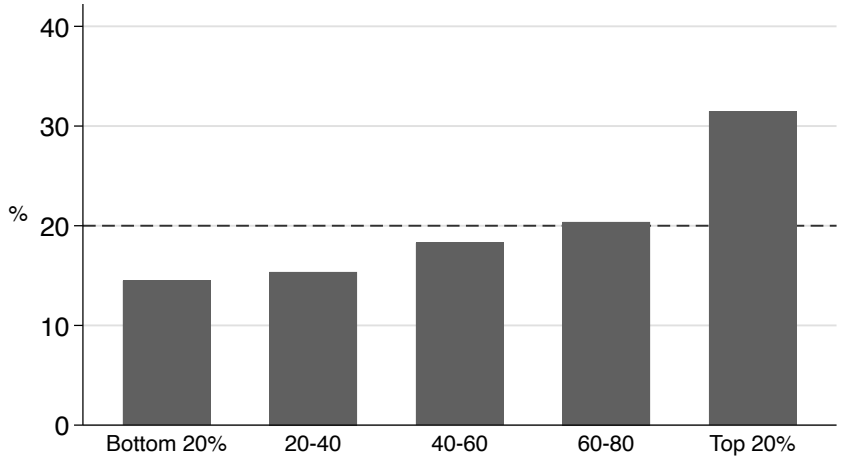

### (B) TEACHERS PER CAPITA



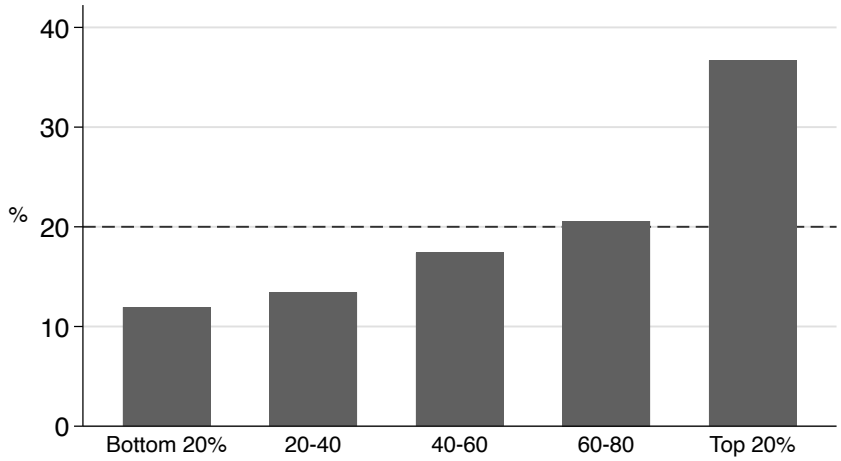

Notes: This figure shows per capita schools (panel (a)) and per capita teachers (panel (b)), by US county in 1850. Darker areas correspond to counties with more schools/teachers. Data are from Haines *et al.* (2010).

**FIGURE B10: PARENTAL WEALTH QUINTILES OF PRIVATE SECTOR WHITE-COLLAR WORKERS**

**(A) ALL WHITE-COLLAR**

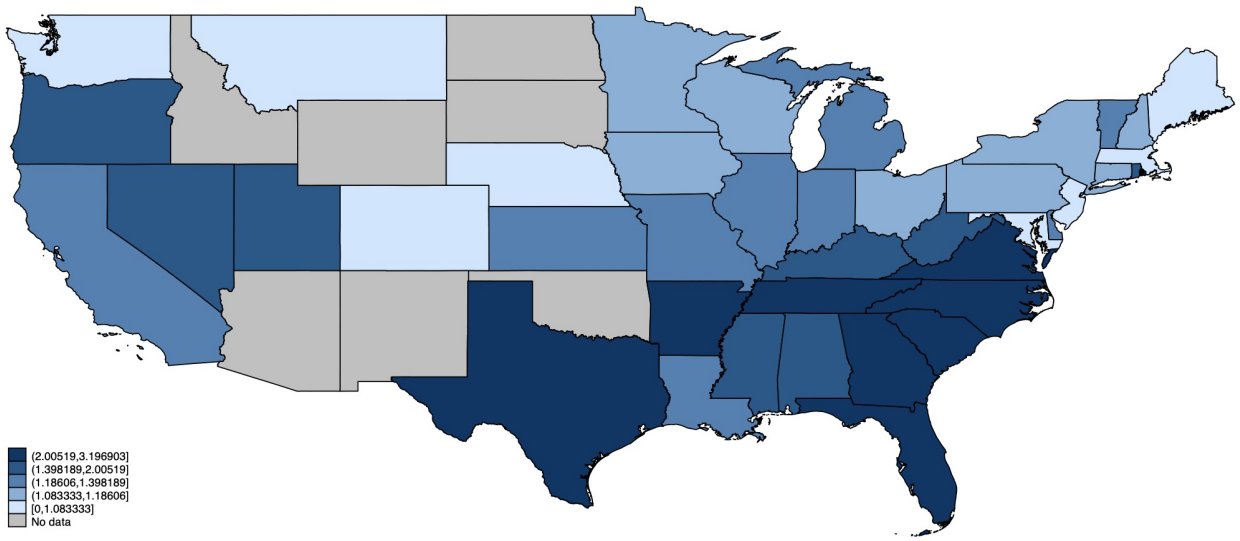



**(B) PROFESSIONAL**




Notes: This figure shows the parental wealth quintiles of private sector white-collar workers in 1880. Panel (a) includes all white-collar workers, whereas Panel (b) includes only those with a professional occupation. Professional occupations are those with a value of less than 100 in the 1950 Census occupational classification system. Examples of these occupations include lawyers and accountants. Non-professional white-collar occupations are those with a value between 200 and 500 (for example, clerks). These figures are based on a sample linking adults in the 1880 census to their childhood households in the 1860 census.

**FIGURE B11: INEQUALITY IN ACCESS TO SCHOOLING, BY STATE OF RESIDENCE (1870 CENSUS)**




Notes: This map shows the ratio between: (1) the likelihood that a child from a family in the top 20% of the wealth distribution would be in school, and (2) the likelihood that a child from the bottom 20% would be in school. Darker areas correspond to states with higher inequality. These ratios are computed based on a random sample of children aged 8-12 in the 1870 US population census (Ruggles *et al.*, 2021).

## TABLE B2: SUMMARY STATISTICS

| | Non-Exam | | | Exam | | |
|---|---|---|---|---|---|---|
| | Mean | Median | Observations | Mean | Median | Observations |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| i. Parental Wealth Ranks | | | | | | |
| Total | 0.53 | 0.53 | 2637 | 0.62 | 0.68 | 437 |
| Personal Property | 0.53 | 0.55 | 2637 | 0.62 | 0.68 | 437 |
| Real Estate Property | 0.55 | 0.54 | 2637 | 0.62 | 0.65 | 437 |
| ii. Parental Occupations | | | | | | |
| Professional | 0.09 | 0.00 | 4396 | 0.14 | 0.00 | 656 |
| White-Collar Non-Prof | 0.19 | 0.00 | 4396 | 0.15 | 0.00 | 656 |
| Farmer | 0.26 | 0.00 | 4396 | 0.37 | 0.00 | 656 |
| Skilled Blue-Collar | 0.29 | 0.00 | 4396 | 0.23 | 0.00 | 656 |
| Unskilled | 0.14 | 0.00 | 4396 | 0.08 | 0.00 | 656 |
| iii. Demographics | | | | | | |
| Immigrant | 0.11 | 0.00 | 8409 | 0.05 | 0.00 | 935 |
| White | 0.93 | 1.00 | 8409 | 0.96 | 1.00 | 935 |
| Father Immigrant | 0.18 | 0.00 | 3963 | 0.11 | 0.00 | 596 |
| iv. Own Occupation Prior to Civil Service | | | | | | |
| Professional | 0.11 | 0.00 | 3447 | 0.24 | 0.00 | 176 |
| White-Collar Non-Prof | 0.34 | 0.00 | 3447 | 0.23 | 0.00 | 176 |
| Farmer | 0.12 | 0.00 | 3447 | 0.21 | 0.00 | 176 |
| Skilled Blue-Collar | 0.23 | 0.00 | 3447 | 0.18 | 0.00 | 176 |
| Unskilled | 0.14 | 0.00 | 3447 | 0.09 | 0.00 | 176 |
| iv. Connections | | | | | | |
| Father Gov. Employee | 0.06 | 0.00 | 4396 | 0.05 | 0.00 | 656 |
| Grew Up in DC | 0.27 | 0.00 | 5173 | 0.06 | 0.00 | 756 |
| Same Surname as Congressman | 0.01 | 0.00 | 8409 | 0.01 | 0.00 | 935 |
| Incumbent Party | 0.51 | 1.00 | 6051 | 0.53 | 1.00 | 875 |

Notes: This table shows summary statistics for employees appointed without the use of exams (Columns 1 to 3) and those appointed using exams (Columns 4 to 6). Employees appointed without the use of exams include pre-reform observations of workers in positions that became subject to exams post 1883. See footnotes to the tables in the main body of the paper for a definition of each of the variables included in this table.

**TABLE B3: PRE- AND POST-REFORM TRENDS IN MAIN OUTCOME VARIABLES**

| Outcome | Pre-1883 | | Post-1883 | |
|---|---|---|---|---|
| | Mean | p-value | Mean | p-value |
| | (1) | (2) | (3) | (4) |
| i. Family Background | | | | |
| Summary Index | 0.021 | 0.329 | 0.168 | 0.000 |
| Parental Wealth Rank | 0.002 | 0.395 | 0.048 | 0.009 |
| Father Professional | -0.017 | 0.182 | 0.048 | 0.008 |
| Immigrant Parents | 0.003 | 0.443 | -0.094 | 0.004 |
| Immigrant | 0.003 | 0.417 | -0.046 | 0.005 |
| ii. Own Occupation | | | | |
| Professional | -0.016 | 0.925 | 0.084 | 0.070 |

Notes: Each row corresponds to a different outcome variable. Columns 1 and 2 focus on the pre-reform event-study coefficients, whereas Columns 3 and 4 focus on the post-reform coefficients. Column 1 reports the mean value of the pre-reform event-study coefficients based on estimating equation 2 in the paper. Column 3 reports the analogous figure for the post-reform coefficients. Column 2 reports the p-value corresponding to the hypothesis that all the pre-reform event-study coefficients are equal to zero. Column 4 reports the analogous p-value for the hypothesis that all the post-reform event-study coefficients are equal to zero. Standard errors clustered at the position level.

**TABLE B4: EFFECTS OF THE REFORM ON EMPLOYEES' PARENTAL OCCUPATIONS, DIFFERENCE-IN-DIFFERENCES ESTIMATES: SAMPLE RESTRICTED TO INDIVIDUALS WITH NON-MISSING PARENTAL WEALTH**

| | Professional | | White-Collar Non-Prof | | Farmer | | Skilled Blue Collar | | Unskilled | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Exam X After | 0.0932*** | 0.0898** | 0.00415 | 0.0116 | 0.0337 | 0.00303 | -0.0823** | -0.0647 | -0.0473* | -0.0359 |
| | (0.0345) | (0.0369) | (0.0464) | (0.0439) | (0.0339) | (0.0345) | (0.0409) | (0.0415) | (0.0245) | (0.0243) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes | No | Yes | No | Yes | No | Yes |
| Observations | 3034 | 3034 | 3034 | 3034 | 3034 | 3034 | 3034 | 3034 | 3034 | 3034 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The sample is restricted to employees for whom we also observe parental wealth. The dependent variable in each of the columns is an indicator that takes a value of one if the father of a bureaucrat worked in a certain occupational category (as indicated by the column). When bureaucrats are linked to more than one census with information on their father's occupation, we use the fraction of census years that their father spent in a given occupational category as our outcome variable. Professional occupations are those with a value of less than 100 in the 1950 Census occupational classification system. Examples of these occupations include lawyers and accountants. Non-professional white-collar are those with a value between 200 and 500 (for example, clerks). Farmers are those with a value of 100. Any blue collar are those with a value above 500 (for example, carpenters or laborers). All columns include hiring year and position fixed effects. The odd columns further include fixed effects based on employees' state "whence appointed". Standard errors clustered at the position level.

**TABLE B5: EFFECTS OF THE REFORM ON EMPLOYEES' COUNTRY OF ORIGIN AND RACE, DIFFERENCE-IN-DIFFERENCES ESTIMATES: SAMPLE RESTRICTED TO INDIVIDUALS WITH NON-MISSING PARENTAL WEALTH**

| | Immigrant | | Immigrant Parents | | White | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Exam X After | 0.0154 | 0.0156 | -0.0866*** | -0.0828*** | -0.00570 | -0.00805 |
| | (0.0141) | (0.0129) | (0.0321) | (0.0320) | (0.0128) | (0.0130) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes | No | Yes |
| Observations | 3034 | 3034 | 2944 | 2944 | 3034 | 3034 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The sample is restricted to employees for whom we also observe parental wealth. The dependent variable in columns 1 and 2 is an indicator that takes a value of one if the worker is foreign born. The dependent variable in columns 3 and 4 is an indicator that takes a value of one if both workersâ parents are foreign born. The dependent variable in columns 5 and 6 is an indicator that takes a value of one if the workers is listed as being white in the census. All columns include hiring year and position fixed effects. The odd columns further include fixed effects based on employeesâ state âwhence appointedâ. Standard errors clustered at the position level. 38

**TABLE B6: EFFECTS OF THE REFORM ON EMPLOYEES' PARENTAL OCCUPATIONS, DIFFERENCE-IN-DIFFERENCES ESTIMATES: GROUPING ALL BLUE-COLLAR OCCUPATIONS INTO A SINGLE CATEGORY**

| | Professional | | White-Collar Non-Prof | | Farmer | | Any Blue Collar | |
|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Exam X After | 0.0530** | 0.0488** | -0.0119 | -0.00378 | 0.0606*** | 0.0258 | -0.104*** | -0.0698* |
| | (0.0239) | (0.0241) | (0.0347) | (0.0325) | (0.0234) | (0.0244) | (0.0383) | (0.0359) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes | No | Yes | No | Yes |
| Observations | 4993 | 4993 | 4993 | 4993 | 4993 | 4993 | 4993 | 4993 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is an indicator that takes a value of one if the father of a bureaucrat worked in a certain occupational category (as indicated by the column). When bureaucrats are linked to more than one census with information on their father's occupation, we use the fraction of census years that their father spent in a given occupational category as our outcome variable. Professional occupations are those with a value of less than 100 in the 1950 Census occupational classification system. Examples of these occupations include lawyers and accountants. Non-professional white-collar are those with a value between 200 and 500 (for example, clerks). Farmers are those with a value of 100. Any blue collar are those with a value above 500 (for example, carpenters or laborers). All columns include hiring year and position fixed effects. The odd columns further include fixed effects based on employees' state "whence appointed". The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors clustered at the position level.

**TABLE B7: EFFECTS OF THE REFORM ON EMPLOYEES' PARENTAL LITERACY, DIFFERENCE-IN-DIFFERENCES ESTIMATES**

| | Father Literate | | Mother Literate | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exam X After | 0.0256** | 0.0262** | 0.000229 | 0.00199 |
| | (0.0107) | (0.0112) | (0.0141) | (0.0142) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes |
| Observations | 4993 | 4993 | 5369 | 5369 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in columns 1 and 2 is an indicator that takes a value of one if an employees' father was literate. The dependent variables in columns 3 and 4 is an indicator that takes a value of one if an employees' *mother* was literate. All columns include hiring year and position fixed effects. The odd columns further include fixed effects based on employees' state "whence appointed". The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors clustered at the position level.

**TABLE B8: EFFECTS OF THE REFORM ON THE SHARE OF FOREIGN-BORN EMPLOYEES, DIFFERENCE-IN-DIFFERENCES ESTIMATES**

| | All Immigrants | | Non-English-Speaking Immigrant | | English-Speaking Immigrant | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Exam X After | -0.0473** | -0.0419** | -0.0212* | -0.0202* | -0.0260** | -0.0217* |
| | (0.0190) | (0.0176) | (0.0115) | (0.0113) | (0.0129) | (0.0118) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes | No | Yes |
| Observations | 9238 | 9238 | 9238 | 9238 | 9238 | 9238 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in columns 1 and 2 is an indicator that takes a value of one if an employee is foreign born. The dependent variable in columns 3 and 4 is an indicator that takes a value of one if an employee is foreign born and from a non-English-speaking country. The dependent variable in columns 5 and 6 is an indicator that takes a value of one if an employee is foreign born and from an English-speaking country. All columns include hiring year and position fixed effects. The even columns further include employees' state "whence appointed" fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

**TABLE B9: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: HETEROGENEITY BY TYPE OF POSITION, CLERICAL VERSUS TECHNICAL**

| | Summary Index | | First Principal Component | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exam X After | 0.169*** | | 0.270*** | |
| | (0.0468) | | (0.0856) | |
| Clerk X After | | 0.171*** | | 0.294*** |
| | | (0.0595) | | (0.101) |
| Tech. X After | | 0.167*** | | 0.235* |
| | | (0.0601) | | (0.125) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | Yes | Yes | Yes | Yes |
| Observations | 2944 | 2944 | 2944 | 2944 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. $Exam \times After$ is the coefficient corresponding to our baseline difference-in-differences specification. $Clerk \times After$ is an indicator that takes a value of one for employees hired through exams as clerks or copyists in the post-reform period. $Tech \times After$ is an indicator that takes a value of one for employees hired through exams in technical positions in the post-reform period. All columns include hiring year and position fixed effects. The even columns further include employees' state "whence appointed" fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

**TABLE B10: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: HETEROGENEITY BY TYPE OF POSITION, HIGH VERSUS LOW PAY**

| | Summary Index | | First Principal Component | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exam X After | 0.169*** | | 0.270*** | |
| | (0.0468) | | (0.0856) | |
| Below Median Pay X After | | 0.133** | | 0.239*** |
| | | (0.0565) | | (0.0869) |
| Above Median Pay X After | | 0.194*** | | 0.292** |
| | | (0.0567) | | (0.114) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | Yes | Yes | Yes | Yes |
| Observations | 2944 | 2944 | 2944 | 2944 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. $Exam \times After$ is the coefficient corresponding to our baseline difference-in-differences specification. $Below\,Median\,Pay \times After$ is an indicator that is one for employees appointed through exams in below-median pay positions in the post-reform period. $Above\,Median\,Pay \times After$ is similarly defined but for employees in above-median pay positions. All columns include hiring year and position fixed effects. The even columns further include employees' state "whence appointed" fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

**TABLE B11: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: DIFFERENTIAL EFFECTS BY DEMOCRATIC OR REPUBLICAN PRESIDENCY**

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Exam X After | 0.180*** | | 0.169*** | |
| | (0.0451) | | (0.0468) | |
| Exam X Democrat Presidency | | 0.209*** | | 0.202*** |
| | | (0.0511) | | (0.0533) |
| Exam X Republican Presidency | | 0.152** | | 0.138** |
| | | (0.0591) | | (0.0625) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | No | Yes | Yes |
| Observations | 2944 | 2944 | 2944 | 2944 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. $Exam \times After$ is the coefficient corresponding to our baseline difference-in-differences specification. $Democrat\ Presidency$ takes a value of one during the post-reform yeas in which the President was a democrat (1885 to 1889), whereas $Republican\ Presidency$ takes a value of one when the President was a Republican (1889 to 1893). The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors clustered at the position level.

**TABLE B12: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: ADJUSTING FOR CHILDHOOD LOCATION**

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Exam X After | 0.169*** | 0.166*** | 0.163*** | 0.158*** |
| | (0.0468) | (0.0406) | (0.0440) | (0.0457) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | Yes | Yes | Yes | Yes |
| Birth State/Country FE | No | Yes | No | No |
| Childhood State FE | No | No | Yes | No |
| Childhood State X Rural FE | No | No | No | Yes |
| Observations | 2944 | 2944 | 2944 | 2944 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. The table shows the sensitivity of the results to adding various location fixed effects based on bureaucrats' childhood place of residence. When we observe an employee in more than one childhood location, we use the first location. All columns include hiring year, employees' home state, and position fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors clustered at the position level.

**TABLE B13: EFFECTS OF THE REFORM ON SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND: ROBUSTNESS TO ESTIMATING A BEFORE AND AFTER SPECIFICATION**

| | Diff-in-Diff | | Before-After | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Exam X After | 0.180*** | 0.169*** | | |
| | (0.0451) | (0.0468) | | |
| After | | | 0.140*** | 0.152*** |
| | | | (0.0452) | (0.0436) |
| Year FE | Yes | Yes | No | No |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes |
| Observations | 2944 | 2944 | 1426 | 1426 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. Columns 1 and 2 report results using our baseline difference-in-differences specification. In columns 3 and 4 we instead report results from an specification in which we restrict the sample to employees in "treated" positions and simply compare their socioeconomic backgrounds before and after the reform. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors clustered at the position level.

**TABLE B14: EFFECTS OF THE REFORM ON THE SUMMARY INDEX OF EMPLOYEES' SOCIOECONOMIC BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: ADJUSTING FOR MISSING DATA ON MIGRANTS' PARENTAL CHARACTERISTICS**

| | (1) Baseline | (2) Percentile 10 | (3) Median | (4) Percentile 90 |
|---|---|---|---|---|
| Exam X After | 0.169*** | 0.186*** | 0.138*** | 0.0987** |
| | (0.0468) | (0.0445) | (0.0412) | (0.0440) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | Yes | Yes |
| Observations | 2944 | 3302 | 3302 | 3302 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is a summary index of employees' socioeconomic background computed using the approach in Kling *et al.* (2007). The index combines information on parental wealth rank, parental occupations, parental literacy, own and parental birthplace and race. The variables composing the index are normalized such a higher value corresponds to a higher socioeconomic status. In columns 2 to 4, we expand our baseline sample by imputing a value of the summary index to foreign-born employees whom we do not observe as children in the US census. In column 2, we impute them a value equal to the 10th percentile of the summary index (computed among all employees with the same occupation in the pre-reform period), in column 3 we impute them the 50th percentile, and in column 4 we impute them the 90th percentile. See the main text for further details on this exercise. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors clustered at the position level.

**TABLE B15: EFFECTS OF THE REFORM ON THE SHARE OF EMPLOYEES FROM URBAN AREAS, DIFFERENCE-IN-DIFFERENCES ESTIMATES**

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Exam X After | -0.151*** | -0.0936*** | | |
| | (0.0300) | (0.0247) | | |
| Clerk X After | | | -0.209*** | -0.138*** |
| | | | (0.0345) | (0.0313) |
| Tech. X After | | | -0.0629* | -0.0284 |
| | | | (0.0363) | (0.0347) |
| Year FE | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes |
| App. State FE | No | Yes | No | Yes |
| Observations | 4993 | 4993 | 4993 | 4993 |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is an indicator that is one if an employee is observed living in an urban area prior to joining the civil service. If we link an individual to multiple censuses, we use the fraction of census years in which this individual is observed in an urban area as the dependent variable. $Exam \times After$ is the coefficient corresponding to our baseline difference-in-differences specification. $Clerk \times After$ is an indicator that takes a value of one for employees hired as clerks or copyists in the post-reform period. $Tech \times After$ is an indicator that takes a value of one for employees hired in technical positions in the post-reform period. See the discussion in the main text on equation 3 for further details. All columns include hiring year and position fixed effects. The even columns further include employees' state "whence appointed" fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.

**TABLE B16: EFFECTS OF THE REFORM ON EMPLOYEES' PROFESSIONAL BACKGROUND, DIFFERENCE-IN-DIFFERENCES ESTIMATES: HETEROGENEITY BY CHILDHOOD'S STATE INEQUALITY IN ACCESS TO SCHOOLING**

| | Professional | | White-collar Non-Prof | | Farmer | | Skilled Blue Collar | | Unskilled | |
|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
| Exam X After | 0.0934** | 0.162 | -0.207*** | -0.230** | 0.0695* | 0.146* | -0.00505 | 0.0909 | 0.0402 | -0.120 |
| | (0.0399) | (0.107) | (0.0711) | (0.0944) | (0.0391) | (0.0778) | (0.0374) | (0.0866) | (0.0347) | (0.0742) |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Position FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| App. State FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2818 | 764 | 2818 | 764 | 2818 | 764 | 2818 | 764 | 2818 | 764 |
| Sample | Below | Above | Below | Above | Below | Above | Below | Above | Below | Above |

Notes: $***p < 0.01$, $**p < 0.05$, $*p < 0.1$. The dependent variable in each of the columns is an indicator that takes a value of one if a bureaucrat worked in a certain occupational category (as indicated by each column's title). When a bureaucrat is linked to more than one census with information on adult occupations, we use the most recent occupation (as long at it corresponds to a census conducted prior to the year in which we observe the worker in the federal personnel records). The sample is restricted to workers who were at least 25 year old at the time we observe them in the census. See notes to Table 3 for the definition of occupations. The sample in the odd columns is restricted to employees from states with below median inequality in access to schooling (see the main text for the definition of our measure of educational inequality). The sample in the even columns is restricted to employees from states with above median inequality. All columns include hiring year, employees' home state, and position fixed effects. The sample is restricted to newly hired employees in the Executive Departments in DC. Standard errors are clustered at the position level.