

The Effect of a Woman-Friendly Occupation on Employment: U.S. Postmasters Before World War II *

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Abstract

This paper examines the effect of a woman-friendly occupation during the early 20th-century United States when women's employment was highly constrained. It focuses on women employed as postmasters, an occupation that welcomed married women and provided women with flexible work arrangements. Using novel data linking postmaster appointments to census records, I show that postmaster jobs attracted qualified women not previously employed. However, regression discontinuity and differences-in-differences results indicate women did not experience lasting employment gains after their postmaster terms ended. Many stopped working, likely due to the lack of employment opportunities elsewhere, which could be explained by state-level marriage bars and the Great Depression. The findings suggest that woman-friendly occupations provided only temporary labor market experiences for women rather than facilitating their transition to longer-term employment.

JEL Codes: N32, J16, J24, J44

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1 Introduction

There is a growing interest in occupations with woman- and family-friendly features and how they might help improve women’s labor market outcomes. While past research primarily focuses on workers in today’s labor force (Goldin and Katz, 2016; Mas and Pallais, 2017; Wiswall and Zafar, 2017), this paper explores the subject through a historical lens—did woman-friendly occupations benefit women during a period when women’s employment was most constrained? On the one hand, working in a woman-friendly occupation could help women gain labor market experience, possibly leading to better future employment opportunities. On the other hand, it might not have a long-term impact because women’s work historically was largely temporary due to marriage bars and social norms.

This paper examines women’s employment as postmasters, who managed the local post offices, between 1920 and 1940 in the United States. The postmaster occupation was notably open to married women, making it a rare woman-friendly occupation during this period when many other occupations either did not hire married women or fired women upon marriage (Goldin, 1988; Goldin, 2021). The postmaster also had the flexibility to set up the post office within a family-run business or even their own home (Blevins, 2021), thus providing women with convenient work arrangements. Women postmasters were often in close contact with the home and the community while working (Cortelyou, 1906), making them less susceptible to criticism for neglecting domestic responsibilities due to their employment.

To study postmasters, I collect a novel dataset on postmaster appointments between 1920 and 1940. The archival dataset—“Record of Appointment of Postmasters, 1832-1971”—contains rich information about postmaster names, postmaster appointment dates, and post office locations (National Archives and Records Administration, 1977). With such information, I can identify the gender of the postmaster, their political affiliation, and their county and state of residence. I then link postmasters appointed between 1920 and 1940 to the complete-count decennial census records to obtain their pre-appointment and post-appointment characteristics.

With the linked data, I first show that postmaster jobs attracted qualified women, most of whom were not previously employed. Specifically, women postmasters had 11.7 years of schooling on average, above the 70th percentile of the distribution. Almost half of the married women postmasters had a self-employed husband, suggesting that these women might be accumulating

work experience by helping their husbands with the family business. Despite their qualifications, only 32 percent of women were employed before being appointed postmaster, not much higher than the share of women employed in the general female population.

Next, I show that postmaster jobs offered few benefits to women's employment beyond the appointed term. Taking advantage of the fact that postmasters were presidential appointees and were rarely re-appointed after the party of the president changed (Kernell and McDonald, 1999; Blevins, 2021), I compare the 1940 labor market outcomes for women postmasters appointed just before and after the 1933 presidential transition in a regression discontinuity (RD) design. For women postmasters appointed just before the 1933 transition, most could not get reappointed for another term and stopped being postmasters by 1940. For women appointed just after the 1933 transition, on the other hand, most could still be reappointed and continued to be postmasters beyond 1940.

The RD results suggest that women postmasters generally did not find new employment after finishing their postmaster term. In particular, women postmasters appointed just before the presidential transition were 27 percentage points less likely to be employed, and reduced their labor supply by 17 weeks worked per year and 11.2 hours worked per week. I additionally show that the adverse effect is unique to women and does not apply to men. For male postmasters appointed just before the presidential transition, they did not experience a reduction in their future employment. The comparison between women's and men's results suggests that the negative employment effect among women is unlikely to be driven by selection issues related to their political affiliations.

In addition, I use a differences-in-differences (DID) design and propensity score matching to show that women postmasters appointed before the presidential transition did not have better employment outcomes relative to women with similar pre-treatment characteristics (such as education). The null effect on employment is not due to any positive spillover effects of women postmasters on other women in the locality. Overall, the DID results provide further supporting evidence that the postmaster occupation provided little benefit to women's future employment.

The lack of benefits of the postmaster occupation is puzzling because women postmasters were positively selected and had accumulated valuable work experience on the job. Why did many women stop working after finishing their postmaster term? I present suggestive evidence

showing that there was a lack of employment opportunities for women in general, and the lack of employment opportunities could be explained by two reasons.

The first reason is state-level discrimination against married women working. In particular, twenty-six states introduced legislation that prohibited married women from working during the Great Depression because many believed married women did not need the additional income and were taking up employment opportunities for others (Gallup, 1939; Shallcross, 1940).¹ I find that women in states with newly introduced marriage bars experienced larger adverse effects in their 1940 employment. The results suggest that state-level discrimination led to fewer employment opportunities for women and could explain why many women stopped working after their postmaster appointments.

The second reason is the severity of the Great Depression. Using retail sales loss per capita between 1929 and 1933 as the measure for the severity of the Great Depression (Fishback et al., 2005), I find that women postmasters in counties with a more severe economic downturn experienced a larger reduction in employment after finishing their postmaster term. The results suggest that the Great Depression made it more difficult for women to find new employment opportunities, which might be why many women stopped working after finishing their postmaster terms. The overlap of my sample period and the Great Depression allows me to examine the effect of the economic downturn on women's labor market outcomes, which is understudied compared to men's (Feigenbaum, 2015).

Finally, I rule out fertility and home production as the mechanism behind the findings. Women postmasters appointed just before and after the presidential transition had very similar household-level outcomes in 1940, such as the number of children and servants in the household. This suggests that women appointed just before the transition did not have more children or spend more time in home production after finishing their postmaster term.

The findings of this paper are certainly pessimistic but should not be surprising. Historically, employment opportunities for women were often taken away just as quickly as they became available, leaving a limited impact on women's employment. For example, Rose, 2018 finds the increasing level of women's employment during World War II had a limited effect on female labor force participation in 1950, and Feigenbaum and Gross, 2024 finds incumbent female

¹The state-level legislation is in addition to the existing barriers against married women working practiced by many occupations and industries before the 1930s.

telephone operators ended up in lower-paying occupations or out of work after the industry automated their tasks. In addition, my estimate on women's employment is similar to the one in the job loss literature—Maxwell and D'Amico, 1986 finds that "40 percent of the women and 3.8 percent of the men have left the labor force" among young workers displaced in the 1960s.²

My contribution to the literature is two-fold. First, I take advantage of the richness of the archival data to study women's work historically, which was often invisible either because the work was not considered "gainful employment" or because many women worked temporarily (Goldin, 1990; Folbre, 1995; Burnette, 2021).³ By uncovering the group of women who worked as postmasters and played significant roles in the operation of US post offices, my paper adds to a growing literature that focuses on women's work during the historical period, such as women in agriculture (Withrow, 2021), women telephone operators (Feigenbaum and Gross, 2024), and women family workers (Chiswick and Robinson, 2021).

In addition, I enrich the discussion about woman-friendly occupations. Although conventional wisdom suggests that a woman-friendly occupation is good for women's employment, this is one of the few papers that provide empirical evidence on this topic (Goldin, 2014; Goldin and Katz, 2016; Mas and Pallais, 2020). Moreover, the paper overcomes the endogenous selection of workers in a woman-friendly occupation by comparing postmasters selected by similar standards but facing different probabilities of reappointment. The findings suggest the longer-run benefits of a woman-friendly occupation can be uncertain due to institutional barriers.

2 Historical Background

Postmasters are federal government employees who manage local post offices. Each post office has one postmaster. The postmaster's duties include selling stamps, processing money orders, organizing receipts, and many others. When discussing postmasters between 1920 and 1940, I am referring to the group of postmasters who were in charge of post offices that received relatively large mail volumes and worked full-time as postmasters.⁴

²My findings are also consistent with past work that shows women fare worse than men after displacement (Crossley et al., 1994; Kunze and Troske, 2015; Illing et al., 2021; Meekes and Hassink, 2022).

³For example, the 1940 Census reports women were more likely to drop out of the labor force during the Depression, making it more difficult to study women who worked (United States Census Bureau, 1943).

⁴These postmasters were referred to as Class 1, 2, and 3 postmasters by the Department of Post Office. They were paid at least \$1,100 per year and sometimes even more than \$5,000 per year. More information regarding the

Below, I explain two important features of the postmaster occupation. First, the postmaster was much more woman-friendly than any other skilled occupation during the early twentieth-century United States, making it a great employment opportunity for women. In addition, postmasters were presidential appointees who were affiliated with the president's political party, which means they were rarely reappointed after a presidential transition.

2.1 Postmaster as a Woman-Friendly Occupation

The postmaster had several features that made it more woman-friendly than any other skilled occupation. First, it allowed married women to enter, which was rare during a period when many other occupations either did not hire married women or fired women upon marriage (Goldin, 1988; Goldin, 2021). The lack of barriers against married women could be because the postmaster job required years of business experience (United States Civil Service Commission, 1922), which made it more favorable to married women who had such experience through helping their husbands with the family businesses. In addition, the federal government often appointed women during wartime when men were not available (Gallagher, 2017; Blevins, 2021), and wives of active military members or veterans were more likely to get the job in this case (United States Civil Service Commission, 1938).

Figure 1 supports the claim that the postmaster occupation was one of the few (if not the only) occupations that allowed married women to enter. The figure shows the share of women in the postmaster occupation and other skilled occupations between 1910 and 1940. Conditional on women working in each occupation, the figure also shows the share of married women. The proportion of married women varied significantly between postmasters and other professions. During this period, 80% of women postmasters had been married, in stark contrast to female clerks, stenographers, and teachers, where only 10% to 30% had been married.

The second woman-friendly feature of the postmaster job was its flexible work arrangements. Since most post offices were in rural areas, the postmaster had the autonomy to decide the location of the post office. Often, postmasters established the post office either inside a general merchandise store that their family was operating or even inside their own homes (Blevins, 2021).⁵ This distinguished women postmasters from other working women, making the postmaster a

sample of postmasters used in this paper can be found in Section 12.2.

⁵Figure A1 in the Appendix provides a few examples of such flexible work arrangements.

“clean and honorable” occupation that allowed women to be in close contact with the home and family while working (Cortelyou, 1906).

The flexible work arrangement also implies the postmaster position was particularly friendly for married women since it blurred the line between women’s home environment and work environment. During a period when most believed women’s sphere should be at home (Harris, 1978), women postmasters were less susceptible to the criticism of abandoning their domestic duties than other working married women in skilled occupations.⁶

In addition, postmaster was also an extremely well-paid job for women. The postmaster’s salary was a percent of post office sales,⁷ which did not adjust based on the gender of the postmaster. Although women were mostly appointed to small and rural post offices that paid less (see Figure A2 for more details), they were paid at least \$1,100 per year and sometimes even \$2,000 to \$3,000 per year (United States Civil Service Commission, 1938). In contrast, the average wage for female clerical workers was roughly \$1,000 in 1940.⁸

2.2 Postmasters as Presidential Appointees

Postmasters were presidential appointees who worked for the federal government. During the nineteenth and early twentieth centuries, postmasters played significant roles under the spoils system to help their party win elections, including inserting resident’s mail with campaign materials and endearing “themselves to members of the House of Representatives through their regular, personal contact with a remote segment of the electorate” (Kernell and McDonald, 1999). In return, presidents gave out postmaster jobs to party loyalists after winning the election. As valuable political assets, postmasters became the largest group of political appointees (John, 1988). Postmasters alone accounted for 76.6% of presidential appointments between 1819 and 1917, and the number of political appointments among postmasters far exceeded the number of appointments from other departments in the federal government (Blevins, 2021). The politics involved in postmaster appointments was never a secret, as clearly stated in Postmaster General James Farley’s memoir. Farley, who served under President Franklin Roosevelt, noted that his

⁶For example, married women who worked as federal government clerks in the 1870s were chastised for abandoning their duties as mothers and homemakers and for “depriving widows, orphans, and male breadwinners of jobs” (Aron, 1987). Similar sentiments against married women persisted in the 1920s and 1930s (Wandersee, 1981).

⁷The postmaster’s salary was a percent of the quarterly sales: “40% for sales under \$100, 33.3% for sales from \$100 to \$400, 30% for \$400 to \$2,400, 12.5% for sales over \$2,400” (Prechtel-Kluskens, 2007).

⁸Author’s calculation based on the 1940 complete count census.

selection of postmasters had to be “loyal Democrats who at the same time will have the ability to serve in their positions to the credit of their party and their country” (Farley, 1938).

Candidates for postmasters were required to pass civil service exams and score among the top three to become eligible (Patch, 1948).⁹ The exam tested the candidate’s ability to manage the post office, such as their arithmetic and writing skills. For example, the candidate was asked to make an itemized list of money order transactions over the past month, as well as to balance and close the statement based on fees charged in each money order (United States Civil Service Commission, 1916). Candidates applying for postmastership in larger post offices additionally had to demonstrate “business training, experience, and fitness” and “the ability in meeting and dealing satisfactorily with the public” (United States Civil Service Commission, 1922).¹⁰

Despite efforts to select the best candidate for the postmaster job through civil service exams, postmasters remained as presidential appointees for many decades after civil service reform.¹¹ The president was free to choose one of the top three scorers of the civil service exam. Naturally, the president would appoint someone from his own party rather than someone from the opposite party. A second exam was often held if the president failed to find a person from his own party (United States Government Printing Office, 1935). Since the president might not be familiar with the party affiliations of job seekers, the Postmaster General or local congressmen often would help pick the postmasters that belong to the president’s political party (Fowler, 1945; Kernell and McDonald, 1999).

Postmaster appointments only lasted four years, and reappointments were extremely rare after a presidential transition when the party of the president changed. Figure 3 supports this historical account, which plots the number of new postmasters coming into the office each year and marks every presidential transition that took place during the early twentieth century with a vertical dashed line. It shows that the number of new postmasters coming into office increased drastically in the four years after each presidential transition but remained relatively stable in other years. This indicates postmasters appointed before a presidential transition were replaced

⁹This rule still applies to postmaster selection today, as suggested by the USPS employment and placement handbook: <https://about.usps.com/handbooks/el312>

¹⁰Section 12.1 of the Appendix explains the eligibility requirements for postmaster candidates and the content of the civil service exams in more detail.

¹¹12,000 postmasters from larger post offices remained as presidential appointees until 1970 (Patch, 1948). This is the sample of postmasters I used in the analysis. Postmasters from smaller post offices stopped being presidential appointees between 1909 and 1913 and were not included in the sample. See more explanation in Section 12.2 of the Appendix.

soon after by people from the opposite political party.¹² Note that postmasters were not immediately “fired” after a presidential transition. Instead, they could stay on the job to finish their four-year term, and most of them had a financial incentive to stay because it was an extremely well-paid occupation.

2.3 Selection of Women Postmasters

Given the political nature of the postmaster position, some women postmasters were selected based on their strong political ties. For example, Mrs. Anne Parsal, the appointed postmaster in Benton Harbor, Michigan, secured the position because of her role in the 1932 campaign for the local Democratic party (The Herald-Palladium, 1935). When appointed in 1935, Parsal was photographed with a picture of Franklin Roosevelt on her desk, indicating her unwavering support for the Democratic president (The Herald-Palladium, 1935).

Unlike Postmaster Anne Parsal, however, most women postmasters were not as closely connected to local politics. These women resided in rural areas and were far from the center of political attention. To establish political connections required for the job, women often cited the political affiliations of their family members, such as mentioning their husbands or fathers or brothers had voted for the party (Aron, 1987).

In addition, women postmasters were often selected from self-employed families, such as being the wife of a husband who “operates a general merchandise store” (Herald and Review, 1938) or being the widow of “a former grocer in the village” (Marysville Journal-Tribune, 1926). This suggests women’s business experience was crucial in securing the postmaster position.¹³

This paints a mixed picture of women’s labor force participation before their postmaster appointments. Women who had strong political ties and resided in cities (such as Anne Parsal) were possibly already working in the formal labor market before being appointed postmasters. These working women were the exception rather than the rule – only 5% to 10% of postmasters in large and urban post offices were women (see more details in Figure A2). On the other

¹²Blevins, 2021 shows the same pattern existed for postmasters appointed during the late nineteenth century, as shown in Figure A3 in the Appendix. Mastrococco and Teso, 2023 establishes similar stylized facts for other federal employees not employed in the Post Office between 1817 and 1905.

¹³Past business experiences were required for both male and female candidates for postmasters (United States Civil Service Commission, 1922). As supportive evidence, Blevins, 2021 shows that the most common occupation for postmasters before their appointment is being the manager of a general merchandise store.

hand, women in rural areas and small towns possibly worked to help with the family businesses before their postmaster appointments, but they might not receive any pay or be considered employed in the formal labor market. For this group of women, formal labor market experience as postmasters might help them improve their labor market prospects in the future.

3 Data and Census Linking

3.1 Presidential Transitions

A presidential transition occurs when the party of the president changes. There were three presidential transitions in the United States in the early twentieth century (see details in [Table 1](#)). The first presidential transition of the 20th Century occurred in 1913 when Woodrow Wilson, a Democrat, replaced William Taft, a Republican. Wilson’s victory ended the Republicans’ control of the presidency since McKinley won the 1896 presidential election. The second presidential transition occurred in 1921 when Warren Harding entered the office, right after Wilson finished his two terms as President. After that, Republicans remained in control of the presidency for more than a decade. The third presidential transition took place in 1933 as Franklin Roosevelt took office. Because of Roosevelt’s popularity, the next presidential transition did not happen until the early 1950s.

3.2 Postmaster Appointments

I collect a novel dataset on postmaster appointments during the early twentieth century in the United States. This is part of a larger archival dataset, “Record of Appointment of Postmasters, 1832–1971”, which contains more than a century-long list of postmaster appointments for all post offices that ever existed (National Archives and Records Administration, [1977](#), Ancestry, [2021](#)). The dataset provides rich information about postmaster appointments, including postmaster names, postmaster appointment dates, and post office locations. [Figure 2](#) shows a sample image of the archival dataset, which contains the postmaster appointment records for the Clermont post office in Lake County, Florida. The top of each appointment record indicates the name and location of the post offices. The table below displays postmaster names and appointment dates.

Based on post office locations, I infer the county and state of residence of postmasters; post-

masters were selected locally as the Civil Service Commission required the candidates for postmasters to reside in the post office's delivery zone (United States Civil Service Commission, 1916). Information about one's county and state of residence is not only valuable in census linking but is also useful to understanding the local labor market conditions.

Based on postmaster names, I infer the gender of postmasters. The first two postmasters appointed in the Clermont post office were most likely to be women, as indicated by predominantly female names such as "Isabelle" and "Florence," as well as the prefixes "Miss" and "Mrs." before their names. On the other hand, the last person appointed at the Clermont post office, Robert O. Seaver, was most likely to be a man. More rigorously, I used the method developed by Blevins and Mullen, 2015, which calculates the probability of someone being a woman based on their first name using training data from the Social Security Administration, to predict whether the appointed postmaster was a woman.

In addition, I also infer the women postmasters' marital status based on their prefixes. For example, the first person on the appointment record is "Miss Isabelle H. Boyd," who likely had never been married at the time of the appointment. The second person on the same page is "Mrs. Florence M. Bowman," who likely was married or had been married at the time of the appointment. At the aggregate level, postmaster names allow me to calculate the share of women postmasters and ever-married women postmasters each year.

Based on postmaster appointment dates, I infer the party affiliation of postmasters. Given that postmasters were presidential appointees, postmasters and the presidents who appointed them often shared the same party affiliation. The first postmaster appointed at the Clermont post office, Miss Isabelle H. Boyd, was appointed in 1931 under a Republican presidency, which means she was most likely a Republican. On the other hand, the second postmaster, Mrs. Florence M. Bowman, was appointed in 1935 under a Democratic presidency, indicating that she was most likely a Democrat.

In addition, I calculate the distance between initial appointment dates and presidential transition dates as well as the tenure length of each postmaster. This allows me to identify postmasters appointed just before and after a presidential transition and examine how the timing of the appointment affected their postmaster career.

To my knowledge, this is one of the only two papers that utilize this newly digitized dataset

(the other is Aneja and Xu, 2022). What differentiates my use of the data from theirs is that I focus on the gender of the postmaster rather than the race. There are more variations in the share of women appointed because very few postmasters were Black.

3.3 Postal Guide

In addition to postmaster appointment data, I also digitized one volume of the Postal Guide and merged it with the postmaster appointment data. The Postal Guide is an official government document that contains information about the size of each post office and the level of compensation each postmaster received (United States Government Printing Office, 1939). A sample image of the Postal Guide is available in Figure A4. Since postmasters were paid at least \$1,100 a year, and sometimes even \$2,000 to \$3,000 a year, they were better paid than workers in other skilled occupations historically.

3.4 Linked Census Data

To obtain pre-appointment and post-appointment characteristics of postmasters, I link postmasters to several complete-count decennial census records (Ruggles et al., 2021). The linked dataset here (also referred to as the “linked census data”) is mainly used in the RD analysis.

Since the only available information for linking is postmaster names, postmaster appointment dates, and post office locations, I impose a conservative linking criterion requiring an exact and unique match of first name, last name, and county and state of residence.¹⁴ To overcome the barrier of linking women — who often change their names upon marriage — I require women’s prefixes and marital status to match.¹⁵

Because postmasters from larger post offices and those appointed close to a census year might be linked more easily, I generate inverse probability weights to ensure the linked sample is representative of the original postmaster appointment data (Bailey et al., 2020). The weights are based

¹⁴Although the procedure here is slightly different than census linking methods in the literature (e.g. those outlined in Abramitzky et al., 2021), the linking rates are quite similar.

¹⁵Failure to link women who changed their marital status between their postmaster appointment and the date the census was taken is not a particular concern. First, 80 percent of women postmasters were married or had been married by the time of their appointment. Second, if the woman changed her name after marriage, she must go through the appointment process again, which means both her maiden name and marital name would appear in the postmaster appointment data.

on post office size, postmaster appointment year, and characteristics of postmaster names.¹⁶

Specifically, I link postmasters appointed between 1920 and 1940 to (a) the 1920 complete-count decennial census, which provides information on pre-appointment characteristics of postmasters, and (b) the 1940 complete-count decennial census, which provides information on post-appointment characteristics of postmasters. The average linking rates are 37.7 percent and 33.0 percent respectively.¹⁷ The main reason I focus on postmasters appointed between 1920 and 1940 is to have enough observations for women – there were very few women postmasters before 1920.

3.5 Census Tree Linked Sample

I combine the linked census data with data from the Census Tree Project to obtain the “census tree linked sample,” a panel dataset of postmasters and their 1920 neighbors. Here, every individual is observed once in the 1920 census and again in the 1940 census.¹⁸ This dataset is mainly used in the DID analysis.

The Census Tree Project provides linked data for women between two censuses (Price et al., 2021, Buckles et al., 2023), which relies on links generated by users on the FamilyTree website who could identify their ancestors with private information that is unknown to researchers.¹⁹

4 Descriptive Statistics of Women Postmasters

To understand the selection of women postmasters, I compare their predetermined characteristics with those of the general female population and their female neighbors.

To study postmasters, I use the linked census data between postmaster appointments and the 1920/1940 complete-count censuses. For the general female population, the data include women

¹⁶Variables related to the size of the post office are the classification of the post office (as shown in the Postal Guide) as well as the salary the postmaster received. Variables related to the characteristics of the names include the length of the first and last name, whether the name is common, whether the name has a middle name or initial, and whether the name contains odd letters such as “z”.

¹⁷I also linked postmasters to their 1930 complete count census, and the average linking rate is 33.4 percent.

¹⁸The disadvantage of the census tree linked sample is that it has a smaller sample of postmasters because postmasters are linked twice — once to the 1920 census and again to the 1940 census.

¹⁹The Census Tree Project also provides other types of links generated by machine learning algorithms, but those links are not used in this paper. Namely, this paper only uses user-identified links.

aged between 18 and 65 in the 1920 and 1940 complete-count censuses (Ruggles et al., 2021).²⁰ To identify the postmaster's women neighbors from census data, I follow the procedures outlined in Logan and Parman, 2017.

4.1 Women Postmasters Were White, Native Born, and Rural

Women postmasters were selected from predominantly White, native-born, and rural populations. Based on results from Table 2, 99% of women postmasters were White, and 98% of them were native-born. This is not surprising because only citizens were eligible to become postmasters. While 57% of women in the general population lived in urban areas in 1920, only 12% of women postmasters did.²¹ This not only reflects that the majority of post offices were in rural areas but also confirms women were more likely to be appointed to rural post offices that were paid less. However, despite women postmasters' over-representation in rural areas, they were slightly less likely to be from farm households, which might speak to their high socioeconomic background.

4.2 Women Postmasters Were Qualified but Not Employed Previously

Women postmasters were highly qualified. First, women postmasters had 11.7 years of schooling on average. This was much higher than the average level of educational attainment of the general female population, which was only 9 years (see Columns 1 and 4 of Table 2). In addition, a closer look at married women postmasters reveals that they were positively selected based on business experience since 48.7% of them had a self-employed husband (see Column 2 of Table 2). These women might have accumulated work experience by helping with their husband's business.

Despite their qualifications, most women postmasters were not employed before being appointed postmasters. Only 31.7% of women postmasters were employed in 1920, a figure not much higher than the share of women employed in the general population (25.6%).²² Why were

²⁰Most pre-determined characteristics are from the 1920 census. However, information about years of education completed is only available in the 1940 census.

²¹Given the large number of observations of women in the general population, the differences between the means are statistically significant.

²²Employment here is defined as having a gainful occupation that does not include working as a housewife, helping with chores at home, or being a student. Census enumerators were instructed to mark down a gainful occupation if the occupation was income-generating. For example, a housekeeper was not considered a gain-

most of these women not employed before being appointed as postmasters? One reason could be their marital status. Since 70.8% of women postmasters were married and many occupations and industries established marriage bars that prevented married women from working (Goldin, 1988), it would be difficult for these women to find employment. Another reason could be their high socioeconomic background,²³ making these women unlikely to work outside the household due to stigma.

4.3 Women Postmasters Were More Similar to Their Women Neighbors

Women postmasters were more similar to their women neighbors than women in the general population. Like women postmasters, their women neighbors were selected from predominantly white, native-born, and rural populations. Specifically, 97% of women neighbors were white, 91% of them were native-born, and 75% of them were from rural areas. In addition, the education gap between women postmasters and their women neighbors is smaller – the average years of education completed is 10.1 years for women neighbors. The similarity between the two groups could be partly due to sorting into neighborhoods.

5 Empirical Strategy

I outline two empirical strategies here. The first is a regression discontinuity design that compares postmasters appointed just before and after the presidential transition. RD is a great empirical strategy because it compares those self-selected as postmasters, thus holding many unobserved factors related to the selection constant. In addition, RD requires a more effortless census-linking procedure since the outcomes of groups appointed just before and just after the presidential transition are both observed in the 1940 census.

The second empirical strategy is a differences-in-differences design that compares women who had been postmasters with their 1920 (pre-period) women neighbors who had never been

ful occupation if the woman worked in her home as the housekeeper but was considered a gainful occupation if the woman worked for other households and get paid for the housework done. See more details here: <https://www.census.gov/library/publications/1929/dec/monograph-9.html>

²³In Figure A5, I illustrate that future women postmasters were selected positively by their socioeconomic backgrounds. Following procedures outlined in Olivetti and Paserman, 2015, I impute women postmasters' socioeconomic backgrounds with their first names. The results suggest candidates for women postmasters were selected overwhelmingly from above the median level of family socioeconomic background.

postmasters. The DID design studies whether postmaster work experience had benefited women's future employment.

5.1 Regression Discontinuity

Taking advantage of the fact that postmasters were presidential appointees and were rarely re-appointed after the party of the president changed, I use an RD design to compare the 1940 outcomes for postmasters appointed just before and after the 1933 presidential transition, when Franklin Roosevelt (Democrat) replaced Herbert Hoover (Republican). Those appointed just before the presidential transition were unlikely to get reappointed due to their political affiliations, while those appointed just after could still be reappointed in the future because the Democratic party was in charge of the presidency for the next twenty years.

Formally, the RD treatment effect is the following:

$$E[Y_i(1) - Y_i(0) | X_i = X_0],$$

where Y_i is the economic outcome for individual i in 1940, X_0 is the day that the presidential transition took place (March 4, 1933), and X_i is the initial appointment date. The running variable is the distance between the initial appointment date and the day that the presidential transition took place. I also include individual control variables in the specification, such as age, age square, marital status, farm and urban status, years of education, and whether one migrated during the past 5 years.

The RD design outlined here is a sharp RD design, which is the preferred identification because individual postmasters could not control the date of their appointments or the party of the presidency. To be comprehensive, I also discuss the fuzzy RD design and the corresponding results in [Section 12.3](#) of the Appendix.

In particular, I implement the local polynomial RD estimates with the choices of robust bias-corrected confidence intervals and optimal bandwidth selection (Calonico, Cattaneo, and Titiunik, 2014; Calonico, Cattaneo, and Farrell, 2018; Calonico, Cattaneo, Farrell, and Titiunik, 2019; Calonico, Cattaneo, and Farrell, 2020). The optimal bandwidth is often around 3 to 4 years before

and after the presidential transition.²⁴

5.1.1 Probability of Being A Postmaster Changes Discontinuously at the 1933 Transition

For the RD design to be feasible, one's probability of being a postmaster in the future should change discontinuously at the presidential transition date, which is the case as shown in [Figure 4](#). The non-parametric figure plots the linked census data by the standardized running variable in quantile-spaced bins (Calonico, Cattaneo, and Titiunik, 2015), and each bin contains roughly 40 observations. No fitted lines are plotted, which helps to avoid a false positive interpretation of a discontinuity in data, as recommended by Korting et al., 2023.

The outcome variable for the top two figures is a dummy variable equal to 1 if the person reported their occupation as postmaster in the 1940 census. For those appointed just before the 1933 presidential transition (bins on the left side of the vertical line), very few of them reported their occupation as postmaster in 1940, which indicates that they were not reappointed due to their political affiliations and stopped being postmasters by 1940. On the other hand, for those appointed just after the 1933 presidential transition (bins on the right side), most were still postmasters by 1940 since they could be reappointed for multiple terms. Specifically, Column 1 of [Table 4](#) shows the RD estimate on the difference in the probability of being a postmaster is 33 pp. for women and 50 pp. for men.

The large discontinuity in the probability of being a postmaster at the 1933 presidential transition suggests the historical account in [Section 2](#) is accurate and RD is a great research design to examine women's post-appointment labor market outcomes.

5.1.2 Predetermined Variables Do Not Change Discontinuously at the 1933 Transition

For the RD design to be valid, postmasters appointed just before and after the presidential transition should be similar to each other. To support this argument, I show that many predetermined characteristics do not change discontinuously at the presidential transition date in [Table 3](#) and [Figure A6](#). This alleviates the concern that postmasters appointed just before and after the presidential transition were selected differently (e.g. due to different political affiliations).

For example, one might be worried that Franklin Roosevelt — the Democratic President who

²⁴[Table 4](#) shows the choices of optimal bandwidth in different regressions.

came into office after the 1933 presidential transition — appointed postmasters in areas that previously voted for Republicans more quickly. Reassuringly, [Figure A6](#) shows no discontinuity in county-level Republican vote share in 1928, and [Table 3](#) shows that the RD estimate is small and insignificant. The result suggests that women postmasters appointed just after the transition were not more likely to be from Republican counties than women appointed just before.

Similarly, one might also be worried that President Roosevelt appointed women postmasters in areas that suffered a severe economic downturn more swiftly since they were in more desperate need of employment opportunities. I address this issue by showing that the county-level retail sales loss per capita between 1929 and 1933 (a measurement of the severity of the Great Depression in Fishback et al., [2005](#); Feigenbaum, [2015](#)) does not change discontinuously at the presidential transition date. The RD estimate is small and not statistically significant from zero.

In addition, I show that the probability of linking a woman postmaster to the census does not change discontinuously at the presidential transition date. This is to ensure that the discontinuities in RD results are not due to census linking issues.^{[25](#)}

Finally, I show that women postmasters appointed just before and after the 1933 presidential transition are similar to each other on many individual-level characteristics. Women postmasters appointed just before and after the transition were similar in socioeconomic background, as measured by the average occupational score rank of their fathers. These two groups of women were also similar in years of education accomplished, the share that were married and employed, and many other dimensions.

5.1.3 Robustness Checks of Baseline RD

I implement several robustness checks to ensure the baseline RD results are robust to alternative specifications, such as robust bias-corrected standard errors, a different kernel function, a fixed bandwidth choice of 1,000 days, county-level controls, and age group fixed effects.

In addition, I implement a placebo test by setting the presidential transition date to March 4th in a different year, and I use a donut RD design that excludes those appointed between the election and presidential transition dates (Barreca et al., [2011](#)). The goal of a donut RD is to make

²⁵One example of the census linking issues could be that women appointed just before the presidential transition were more likely to migrate than women appointed just after, and thus less likely to be linked to the census. The absence of the discontinuity in the probability of being linked to a census suggests that is not the case.

sure that the baseline RD results are not driven by postmasters who anticipated the upcoming presidential transition and might have different incentives to take the job.

5.2 Differences-in-Differences

In addition to an RD design that compares women postmasters appointed in different time periods, I also implement a DID design that compares women who had been postmasters with their 1920 women neighbors who had never been postmasters. The DID design examines whether women postmasters had better labor market outcomes than their women neighbors of similar educational levels. Comparing women postmasters and their women neighbors allows me to hold neighborhood characteristics and endogenous factors related to sorting into different neighborhoods constant.

The DID specification is the following:

$$Y_{ihet} = \alpha_0 + \alpha_1 PM_i + \alpha_2 Post_t + \alpha_3 PM_i \times Post_t + \gamma_h + \gamma_e + X'_{ihet} \Theta + \epsilon_{ihet}$$

Y_{ihet} is the outcome variable for person i who had education level e and lived in neighborhood h in year t . t only takes on two values — 1920 and 1940. PM_i is a dummy variable that equals 1 if the person had been a postmaster. $Post_t$ is a dummy variable that equals 1 if the year is 1940. I include neighborhood fixed effects γ_h and education fixed effects γ_e , which allows me to compare people in the same neighborhood and people with the same level of education. I also added individual-level control variables X_{ihet} , including age, age square, marital status, farm, and urban status. The data used here are the census tree linked sample of native-born White women aged between 18 and 65 who lived in neighborhoods with at least one postmaster.

For women neighbors to be a good control group, they should not be affected by postmaster appointments. This condition is violated if appointing a woman postmaster leads to a higher level of labor force participation for other women in the locality. To address this concern, I discuss the possibility of a spillover effect in [Section 7.1](#). In particular, I illustrate that a positive spillover effect is not found among the 1920 women neighbors by showing the DID results are similar when comparing women postmasters with women neighbors who lived in close proximity and with those who lived farther away.

Finally, I address the issue that women neighbors might not be a good comparison to women postmasters if their pre-period characteristics were different, which is possible since it is difficult to test for pre-trends directly. As a robustness check, I implement a DID design with propensity score matching, as explained in more detail below.

5.3 Differences-in-Differences with Propensity Score Matching

I use propensity score matching to compare women postmasters and other women with similar pre-treatment characteristics. In particular, for each woman postmaster, I find five women who lived in the same county as her “nearest neighbors” by matching on pre-treatment variables related to their education, marital status, employment status, home ownership, and the number of children in the household. Propensity score weights are generated using a logistic regression of being a woman postmaster on pre-treatment variables and county fixed effects. The DID results with propensity score reweighting are shown in [Table 5](#).

6 RD Results

I present evidence showing that women experienced a large reduction in employment after finishing their postmaster term, which indicates that many women who could not be reappointed as postmasters did not find employment opportunities elsewhere and had stopped working. The results are shown in [Figure 4](#) and [Table 4](#). The non-parametric figure plots the linked census data by the standardized running variable in quantile-spaced bins (Calonico, Cattaneo, and Titiunik, 2015), and each bin contains roughly 40 observations. No fitted lines are plotted following the recommendation by Korting et al., 2023. The vertical line in each figure indicates the 1933 presidential transition date (March 4, 1933). The table reports RD estimates based on the empirical strategy described in [Section 5](#).

6.1 Women Experienced a Substantial Reduction in Employment

The main outcome variable I am interested in is whether one was employed in 1940. Here, being employed is defined as reporting a valid occupation, and the occupation is not related to

housework.²⁶ The RD employment result for women is shown in the left column of [Figure 4](#).

For women postmasters appointed just before the presidential transition who were unlikely to be reappointed, around 40% to 60% of them were employed in 1940, three to four years after their postmaster appointment term had ended. Although this level of employment is quite high compared to women in the general population, it is much lower than the employment level of women postmasters appointed just after the presidential transition. For those appointed just after the presidential transition, most of whom were still postmasters in 1940, around 80% to 90% of them were employed in 1940. The RD estimate in Column 2 of Panel A in [Table 4](#) suggests the difference in the probability of employment between these two groups is 27 pp.

The large discontinuity in women's employment at the presidential transition date and a statistically significant RD estimate suggest that many women postmasters appointed just before the presidential transition failed to find new employment opportunities by 1940. The result might be surprising, especially considering that these women had the option to finish their four-year appointment term and could look for new employment opportunities while still on the postmaster job.

6.1.1 Women's Employment Were Worse Than Men's

I additionally show that women experienced a larger reduction in employment after their postmaster appointment relative to men who were appointed under the same circumstances. This not only suggests that women's results might be explained by gender-specific factors in the labor market but also indicates that women's results are not driven by selection issues related to one's political affiliations.

As shown in [Section 5.1.1](#), the probability of being a postmaster changes discontinuously at the presidential transition date for both women and men. Like women, male postmasters appointed just before the presidential transition could not be reappointed, but their employment outcome could not be more different. The right column of [Figure 4](#) shows that male postmasters who could not be reappointed as postmasters experienced a very small reduction in their 1940 employment, and Column 2 of Panel B in [Table 4](#) suggests the RD estimate is not statistically

²⁶Alternative measure for one's employment outcome in 1940 could be: (1) in the labor force, which additionally include new workers and workers not currently working but looking for work, and (2) employed for pay, which means the person worked for pay in a specific reference period (March 24 to March 30 in 1940). Changing the outcome variable to alternative measures does not change the results.

significant from zero.

Furthermore, Column 2 of Panel C in [Table 4](#) shows that the gender difference in RD estimates on employment is large and statistically significant, indicating that women postmasters who could not be reappointed were much worse off than male postmasters appointed under the same circumstances.

The comparison between women's and men's results has two implications. First, the reduction in women's employment might be explained by gender-specific factors in the labor market, which will be further explored in [Section 8](#). In addition, the reduction in women's employment is unlikely to be driven by selection issues related to one's political affiliations (e.g. selection related to postmasters appointed by Republicans) because the comparison between women and men holds political affiliation constant.²⁷

6.2 Women Experienced a Substantial Reduction in Labor Supply

Women also experienced a substantial decrease in their labor supply. For women postmasters appointed just before the presidential transition, they worked approximately 20 to 30 weeks per year, while women postmasters appointed just after worked approximately 40 to 50 weeks per year.²⁸ The RD estimate suggests the difference in labor supply is 17 weeks per year. This might indicate that women who could not be reappointed as postmasters worked fewer weeks either because they were not employed or because they worked in part-time jobs.

Similarly to the employment results, women also had worse outcomes in their labor supply than men. For male postmasters appointed just before the presidential transition, they did not experience a reduction in weeks worked per year. The comparison confirms the claim that women's employment and labor supply were more elastic than men's (Goldin, [2006](#)).

6.3 Women Did Not Become Self-Employed or Family Workers

Women did not become self-employed after finishing their postmaster appointment term. This might be surprising since the skill sets required in the postmaster occupation were similar

²⁷This is similar to the "difference in discontinuity" estimates used to address selection bias as shown in Grembi et al., [2016](#). The difference here is a gender difference instead of a cross-sectional difference.

²⁸For labor supply, the 1940 census asked respondents to report weeks worked in 1939 and hours worked in the week of March 24 to March 30 in 1940. Additional results on hours worked per week are in [Figure A7](#).

to those in self-employment opportunities (such as managers and bookkeepers), making self-employment an attractive alternative option for women.²⁹ However, Figure A7 suggests very few women were self-employed, and Column 5 of Panel A in Table 4 suggests women postmasters were not more likely to become self-employed after finishing their postmaster term. In contrast, male postmasters appointed just before the presidential transition were 35 pp. more likely to become self-employed relative to those appointed just after.

In addition, women did not become family workers after finishing their postmaster appointment term either. Unpaid family workers, such as women helping with family businesses, were documented in the 1940 census.³⁰ Using this variable from the 1940 census, I show that women appointed just before the presidential transition were not more likely to work as family workers (Column 6 of Panel A in Table 4). Changing the outcome to an alternative measure of family worker based on the household head's self-employment status does not change the results.³¹

The results indicate that women were not substituting formal labor market participation with informal work, which included both self-employment and work within the family.³² This further supports the argument that many women did not find new employment opportunities in 1940 after finishing their postmaster appointments.

6.4 Baseline RD Results Are Robust

The baseline RD results above are robust to many alternative specifications, including robust bias-corrected standard errors, a different kernel function, a fixed bandwidth choice of 1,000 days, county-level controls, and age-group fixed effects.³³ The results are shown in Panels A to E of Table A1.

²⁹Because past business experience was needed by postmasters, many postmasters were actually self-employed before being appointed. They often worked in general merchandise stores or as saleswomen (Blevins, 2021).

³⁰See more details in the 1940 census instructions (item 539): unpaid family workers included those who worked "in a shop or store from which the family obtained its support, or on other work that contributed to the family income (not including home housework or incidental chores)." <https://www.census.gov/programs-surveys/decennial-census/technical-documentation/questionnaires/1940/1940-instructions.html>

³¹This alternative measure of family worker is used in Chiswick and Robinson, 2021. The imputed variable counts all family members in a household where the head is self-employed as family workers because many merchant and craft business owners rely on family members as laborers. Changing the outcome variable to the imputed measure does not change the results.

³²Consolidating self-employment and being a family worker into one outcome variable does not change the results.

³³County-level controls include the share of high school/college graduates, the share of women, the share of Whites, the share of the working population by gender, and population density. Age groups are defined as below 30, between 30 and 40 ... between 60 and 70, and above 70 years old.

In addition, I implement a placebo test by using a pseudo-presidential transition date (March 4, 1926). Panel F in [Table A1](#) recovers null results, which is reassuring.

Finally, I implement a donut RD design that excludes postmasters appointed between the 1932 election date (November 8, 1932) and the 1933 presidential transition date (March 4, 1933). Postmasters appointed after the 1932 election date might have anticipated the upcoming presidential transition and had different incentives to take the job. The donut RD examines whether the baseline RD results are driven by these observations. As shown in Panel G of [Table A1](#), the donut RD estimates on employment and labor supply are only slightly smaller than those in [Table 4](#), which suggests the results are not driven by postmasters appointed close to the presidential transition date.

6.5 Heterogeneous RD Results by Women’s Socioeconomic Backgrounds

Are the results driven by women who were well-off and did not need to work to support themselves financially? To answer this question, I examine the results by women’s socioeconomic background, which is imputed based on their names following the procedure from Olivetti and Paserman, 2015. Specifically, for each first name j that daughters aged 0 to 15 had in 1900,³⁴ I calculate the average occupational rank of their fathers, F_j . Since women postmasters were already selected positively based on their socioeconomic backgrounds, one is considered from high socioeconomic backgrounds if F_j is higher than the 75th percentile.

The results in [Table A2](#) suggest that women from higher socioeconomic backgrounds experienced a larger reduction in their employment and labor supply. The difference in the probability of employment between women appointed just before and after the presidential transition is 55 pp. in this case, much larger than the 22 pp. estimate for women from lower socioeconomic backgrounds. The estimates in labor supply are also larger, suggesting 29 weeks worked per year and 19 hours worked per week reduction among those from higher socioeconomic backgrounds. Although the differences between the estimates for women from high versus low socioeconomic backgrounds are not statistically significant, the comparison suggests women who did not need to support themselves through employment might be driving the results we have seen in [Table 4](#).

³⁴Since the average age of women postmasters is 34 years old in 1920, examining names of birth cohorts born between 1885 and 1900 is a good choice.

6.6 RD Results on Children's Years of Education

It is also interesting to explore the intergenerational effects here. Past research has documented a positive relationship between the labor force participation of daughters and their mothers-in-law (Fernández et al., 2004) as well as their mothers (M. Morrill and T. Morrill, 2013). In the specific context of public sector workers in the early twentieth-century United States, Aneja, Farina, et al., 2024 shows that daughters of workers with female co-workers were more likely to work later in life.

Unfortunately, employment outcomes of children of women postmasters could not be examined due to data limitations.³⁵ Instead, I examine these children's educational outcomes. If women postmasters appointed just after the presidential transition were expected to work for a longer period and receive a more sizable income, they might be more likely to invest in their children's education relative to women appointed just before. On the other hand, one might not find an effect on children's education since most women postmasters were selected from high socioeconomic backgrounds (see Figure A5) and they invested in children's education regardless of the amount of additional income received on the postmaster job.

The sample of children in this analysis includes those between 6 and 18 years old who resided in their parental households in 1940. In Figure A8, I show that the average years of education accomplished were similar for children whose postmaster parents got appointed just before and after the presidential transition. This pattern is consistent across groups of postmasters and children of different genders, which indicates that children's education was not affected by whether their mothers were reappointed as postmasters and there was little intergenerational effect.

7 DID Results

Using a DID design, I find that women postmasters appointed before the presidential transition did not have better employment outcomes in 1940 relative to their 1920 women neighbors, while women postmasters appointed after the presidential transition did.³⁶ The results are

³⁵The main challenge is that additional linking is required to study adulthood outcomes of children who have left their parental household, which will substantially decrease the number of observations available for the analysis. Furthermore, children of mothers appointed as postmasters around 1933 might be too young to study in 1940, and the 1950 census data with names are not yet available on a large scale.

³⁶The only available outcome variable is employment since variables related to labor supply are not available in 1920 and thus could not be examined in a DID design.

shown in [Figure 5](#) and [Table 5](#). The non-parametric figure plots the census tree linked sample by the standardized running variable in quantile-spaced bins (Calonico, Cattaneo, and Titiunik, 2015), and each bin contains roughly 40 observations. No fitted lines are plotted following the recommendation by Korting et al., 2023. The vertical line in each figure indicates the 1933 presidential transition date (March 4, 1933). The table reports DID estimates based on the empirical strategy described in [Section 5](#).³⁷

With the census tree linked sample, the DID design first uses women postmaster's 1920 women neighbors as the control group. [Figure 5](#) shows that the 1940 labor market outcomes of the 1920 women neighbors were quite similar to each other, regardless of the appointment timing of women postmasters. In particular, almost none of the women neighbors reported their occupation as postmasters in 1940, less than 20% of them were employed in 1940, and the average weeks worked per year was around 10 weeks. The lack of discontinuity in the outcomes of women neighbors indicates that they were unaffected by the 1933 presidential transition, making them a great control group for women postmasters.

Panel A of [Table 5](#) shows the DID results between women postmasters and their women neighbors with the same level of education. To ensure that the results are not sensitive to the appointment timing of women postmasters, the table shows the results by different samples of women postmasters appointed within 1400 days (4 years), 1600, 1800,..., 2400 days (6 to 7 years) of the 1933 presidential transition. Across different columns, the coefficients of the postmaster dummy variables are always positive and significant, which shows that women postmasters were positively selected and were more likely to be employed during the pre-treatment period than their 1920 women neighbors, consistent with the descriptive statistics shown in [Table 2](#). On the other hand, the DID estimates are not statistically different from zero, suggesting that the postmaster work experience did not make women more likely to be employed relative to their 1920 women neighbors.

Panel B of [Table 5](#) shows the DID results between women postmasters and the matched women who lived in the same county in 1920 with propensity score reweighting. Matching is done with a logistic regression of being a woman postmaster on pre-treatment variables (such as education) and county fixed effects. Similar to the results in Panel A, Panel B also shows women postmasters were positively selected and more likely to be employed in 1920 than the

³⁷ Additional DID estimates for men are shown in [Figure A9](#).

matched individuals. On the other hand, the DID estimates are not statistically different from zero, which indicates women postmasters were not more likely to be employed than matched individuals with similar pre-treatment characteristics.

The DID results suggest that women postmasters were not more likely to be employed in 1940 than women who had never been postmasters. However, this interpretation might be misdirected if there is a positive spillover effect from women postmasters to other women who live in the locality, which might occur if a woman postmaster hired more women in the postal service relative to a male postmaster or if more women (especially those from younger generations) were encouraged to join the labor force because of a role model effect.

7.1 No Spillover Effect from Women Postmaster Appointments

To examine the spillover effects, I compare women postmasters with their 1920 women neighbors who lived farther away, defined as those who lived within a 5-page or 10-page range from the women postmasters.³⁸ For example, if a woman postmaster is positioned on page 20 of the complete-count census records, then a 5-page range would include native-born white women aged 18 to 65 from page 15 to page 25, and a 10-page range would include those women from page 10 to page 30. Since neighbors living close to the woman postmaster should be more affected by the spillover than those living farther away, comparing women postmasters with their 1920 women neighbors within the same-page range, 5-page range, and 10-page range would inform us the presence of a spillover effect.

These additional results are shown in [Table A5](#), and only the DID estimates are reported due to space constraints. Panel A and C shows the comparison between women postmasters appointed before the 1933 presidential transition and their women neighbors within a 5-page and a 10-page range. In both cases, The DID estimates are small, negative, and not statistically significant from zero. These are similar to the DID estimates from the same-page comparison in [Table 5](#), which suggests a spillover effect is unlikely.

The lack of spillovers is reasonable, considering that most women postmasters were in rural post offices where the postmaster was the only worker. These women postmasters could not

³⁸In the 1920 complete-count census, there were 59 people on one page on average. In urban areas, a 5-page or 10-page range of neighbors were likely people living on the same street or several streets away from each other. In rural areas, these were likely people living in the same town.

hire assistants or clerks, which could explain why no additional women were employed after the appointment of a woman postmaster.

Overall, the results indicate that women who had postmaster work experience were not more likely to be employed than their 1920 women neighbors, and the postmaster occupation provided women with few long-term benefits in their future employment.

8 Mechanisms

It is puzzling that many women stopped working after their postmaster appointments and did not have better employment outcomes than their neighbors who had never been postmasters. I present suggestive evidence showing that this was due to limited labor market opportunities for women, which can be explained by (1) state-level discrimination against married women working and (2) the severity of the Great Depression. In contrast, the results cannot be explained by women's fertility and home production.

8.1 State-Level Discrimination Against Married Women

Discrimination against married women, often referred to as "marriage bars," had a long history in the U.S. labor market and existed in different forms in various occupations and industries (Goldin, 1988). The discriminatory practice was in place because many people believed that women's sphere was the family and working women could not be efficient and caring homemakers (Harris, 1978; Rury, 1991).

Marriage bars established by the government, however, were relatively rare until the Great Depression, during which the federal government passed Section 213 of the Economy Act that asked "married persons" to resign if both the husband and the wife were working for the federal government, and the majority of those forced to resign were women because women earned less than men (Cook, 1936). The establishment of the clause was fueled by sentiment against women — and especially married women — having any kind of employment opportunities during a period of severe economic downturn.

The federal legislation set a precedent for the state to discriminate against married women, and twenty-six states quickly followed suit to introduce legislation restricting married women's

employment during the Great Depression (Shallcross, 1940; Scharf, 1980). Figure 6 shows the states that introduced legislation prohibiting married women from working. Although most state legislative actions did not pass, they served as encouragement for employers not to hire married women and discouragement for married women to seek employment.³⁹

To study whether state-level discrimination contributed to the results, I examine the RD estimates by women living in states that had and did not have legislation against married women working. The results are shown in Panels A and B of Table 6.

The RD estimates on the probability of being a postmaster in 1940 are similar for women living in states with and without newly introduced marriage bars. However, the estimate on employment is much larger for women living in states with marriage bars – they were 39 pp. less likely to be employed in 1940. In addition, the reduction in their labor supply was 22.6 weeks worked per year and 15.2 hours per week, much more substantial than the ones for women living in states without marriage bars. The comparison between women living in states with and without newly introduced marriage bars suggests that state-level discrimination led to fewer employment opportunities for women and could explain why many women stopped working after their postmaster appointments.

8.2 The Severity of the Great Depression

In addition to state-level discrimination, the Great Depression might have made it more difficult for women to find new employment opportunities. As a result, I examine the RD estimates by women living in counties with different severity levels of the economic downturn. The county-level severity of the Great Depression is measured by changes in retail sales per capita between 1929 and 1933 (Fishback et al., 2005; Feigenbaum, 2015). The RD results are shown in Panels C and D of Table 6.

For women living in areas that experienced a more severe economic downturn, they experienced a 41 pp. reduction in the probability of employment in 1940 and decreased their labor supply by 23.6 weeks per year. On the other hand, the RD estimates on employment and labor

³⁹According to Shallcross, 1940, married women workers “may eventually find it impossible to get a job even though no laws have been passed specifically prohibiting her employment” if sentiment against women working continued to grow. A Gallup poll found the majority of the respondents supported state legislatures’ desire to pass laws restricting married women’s rights to work (Gallup, 1939), even though a government survey showed most married women were seeking employment due to economic necessity (Brown, 1929).

supply are small and insignificant for women living in counties that experienced a less severe economic downturn. The comparison suggests that women in areas with a more severe economic downturn might find it more difficult to obtain new employment, and thus more likely to have stopped working after their postmaster terms.

8.3 Fertility, Parenthood and Other Types of Home Production

Finally, I show that women did not have more children or spend more time in home production after finishing their postmaster term, which means fertility and home production cannot explain the results above.

Using the same RD strategy as explained in [Section 5](#), I examine whether women appointed just before the presidential transition had more children than women appointed just after. The measures for fertility are the number of children and children under 5 years old in the household. Columns 1 and 2 of [Table A3](#) show that there is no difference in fertility between women appointed just before and after the presidential transition, which suggests that fertility cannot explain the results.

In addition, I examine whether women appointed just before the presidential transition were doing more home production, such as grandchild care, elderly care, and housework. I use the number of grandchildren, parents and parents-in-law, and servants in the household as novel proxies for the amount of grandchild care, elderly care, and housework women perform. The results in Columns 3 to 5 of [Table A3](#) show that women appointed just before the presidential transition did not engage in more home production than women appointed just after. This suggests that home production cannot explain why many women stopped working after their postmaster appointments.

9 Conclusion

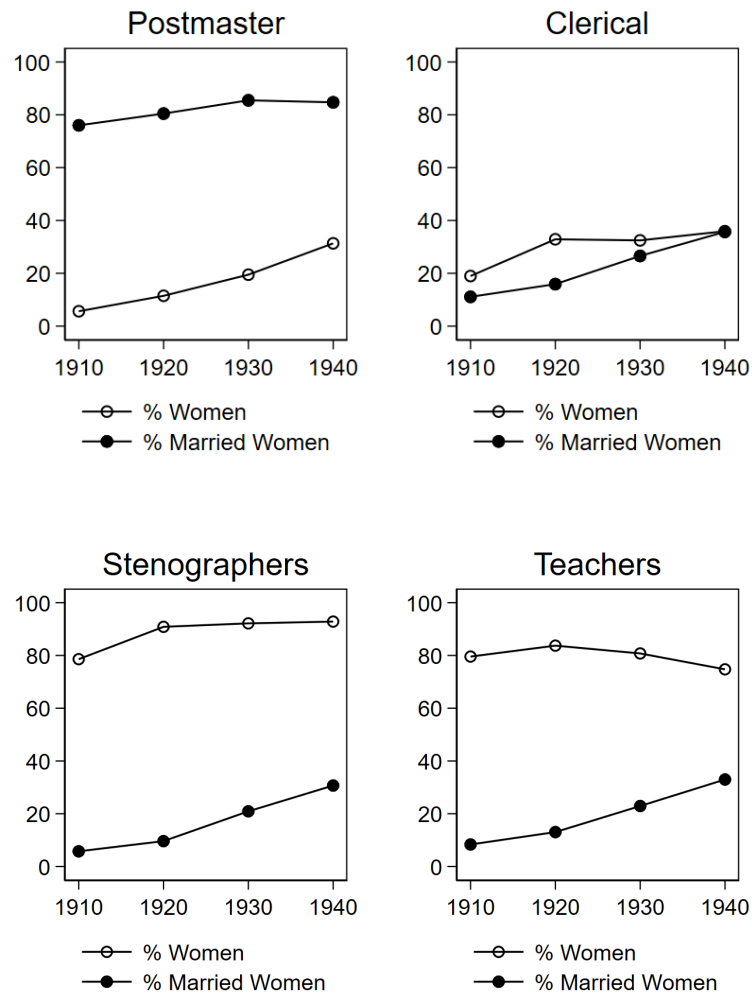
This paper provides a historical perspective on whether woman-friendly occupations actually benefited women's employment during a period when women's labor force participation was severely constrained. By examining the postmaster occupation from 1920 to 1940, which welcomed married women and provided flexible work arrangements and equal pay, the find-

ings reveal a rather dim reality. While the postmaster position attracted qualified women who were not employed previously, there is little benefits to women's long-term employment.

Although pessimistic, the findings align with the broader historical experience of women's work being treated as temporary and contingent. The results caution that woman-friendly occupations alone might be insufficient to facilitate transitions to longer-term employment amid restrictive social, legal, and economic conditions. Future work on woman-friendly occupations and their impacts across different time periods and geographical contexts are needed.

10 Figures

Figure 1: Share of Women and Ever-Married Women in Different Occupations



The figure shows the share of women in the postmaster, clerical, teacher and stenographer occupations between 1910 and 1940. The figure also shows the share of ever-married among women in each occupation. The share of women postmasters and ever-married women postmasters are calculated based on the dataset “Record of Appointment of Postmasters, 1832-1971”. The share of women and ever-married women in other occupations are calculated based on 1% IPUMS.

Figure 2: Sample Image from “Record of Appointment of Postmasters, 1832-1971”

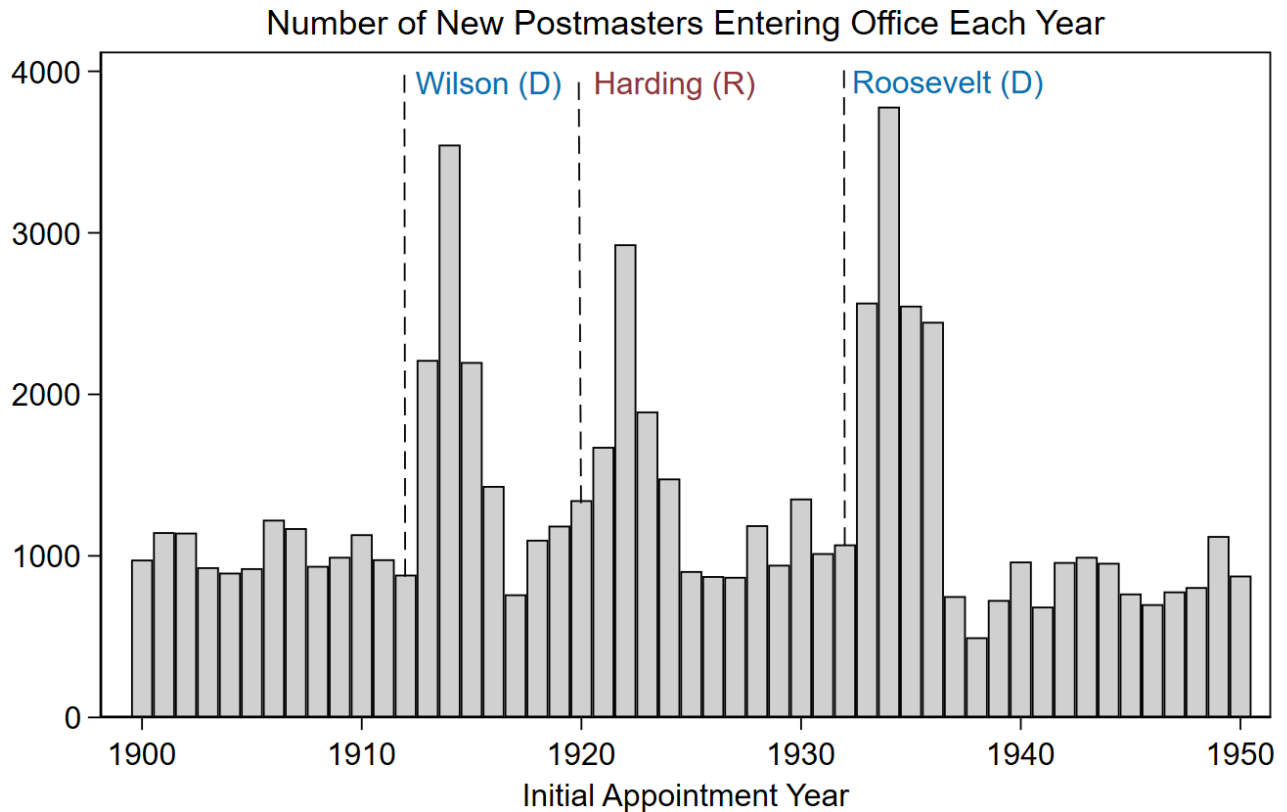
Lake Florida
(County) (State)

Clermont Established _____
(Post Office) Discontinued _____

POSTMASTER	NOMINATED	CONFIRMED	RECESS OR ACTING	COMMISSION SIGNED AND MAILED	ASSUMED CHARGE	CAUSE AND DATE OF VACANCY	REMARKS
Miss Isabelle H. Boyd		Feb. 27, 1931	act P.M.			Rem	Ops.
Mrs. Florence M. Bowman			July 5-35 act P.M.		July 20-35		
Mrs. Florence M. Bowman	July 10-35	July 28-35	July 26-35 act P.M.	Aug 10-35	Aug. 13, 1935	Corn. Ex.	
Mrs. Florence M. Bowman	July 12, 1939	July 18, 1939	July 26, 1939 act P.M.	Sept. 6, 1939	Sept. 16, 1939	Res.	
Robert O. Seaver			May 31, 1946 act P.M.		June 1, 1946		
Robert O. Seaver	Apr. 7, 1947	July 11, 1947	July 14, 1947 act P.M.	July 14, 1947	Sept. 30, 1947		

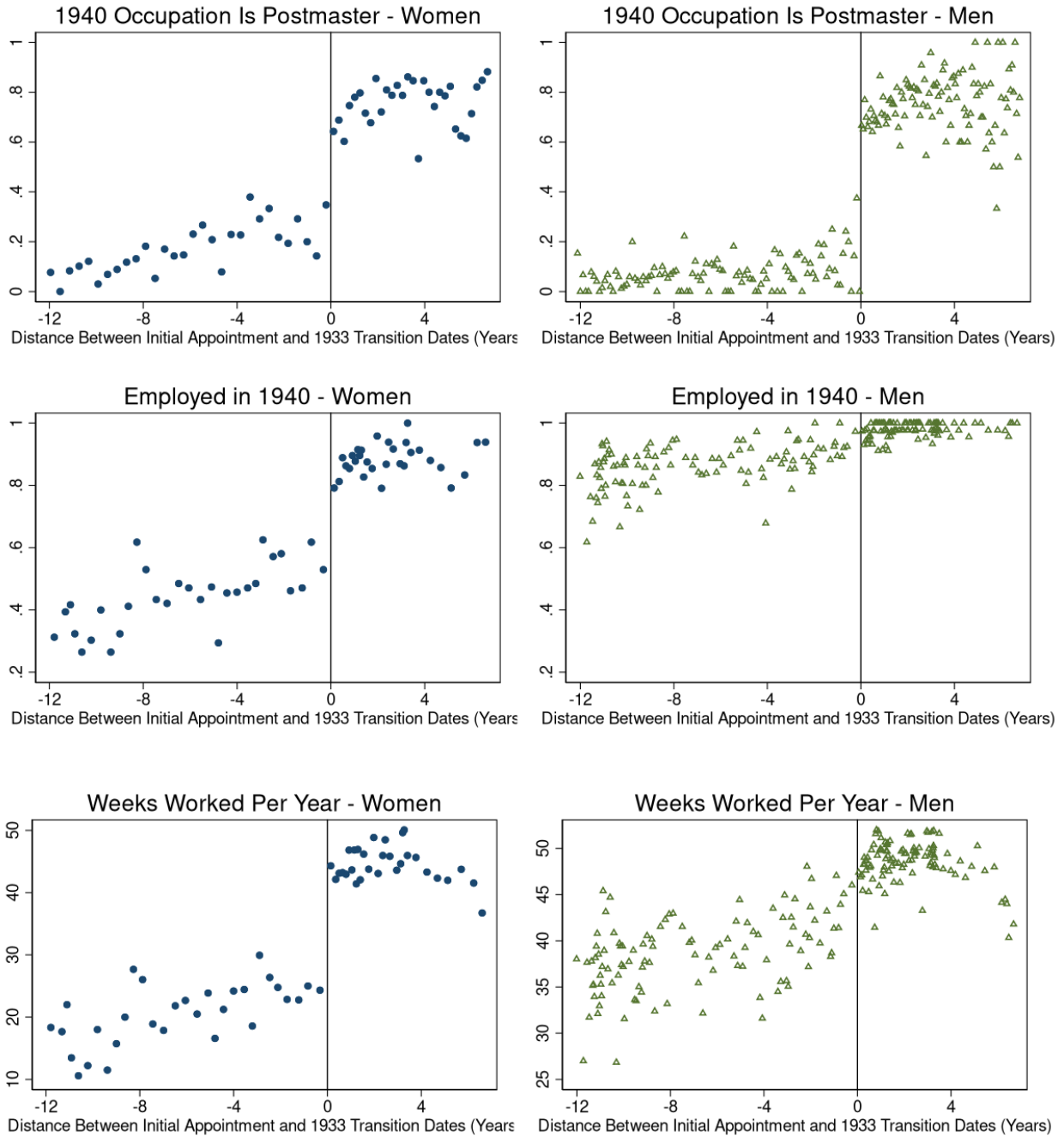
Source: Ancestry, [2021](#); National Archives and Records Administration, [1977](#). The sample image shows the dataset contains rich information about postmaster appointments, including post office locations, postmaster names and postmaster appointment dates.

Figure 3: Number of New Postmasters Entering Office Each Year



The figure shows the number of new postmasters entering office each year. Each vertical dashed line indicates the election year that led to a presidential transition when the party of the president changed from Republican to Democrat or from Democrat to Republican. Changes in the presidency within the same party are not labeled. The author's calculation is based on the dataset "Record of Appointment of Postmasters, 1832-1971".

Figure 4: RD Results on 1940 Outcomes Between Postmasters Appointed Just Before and Just After the 1933 Presidential Transition - By Gender



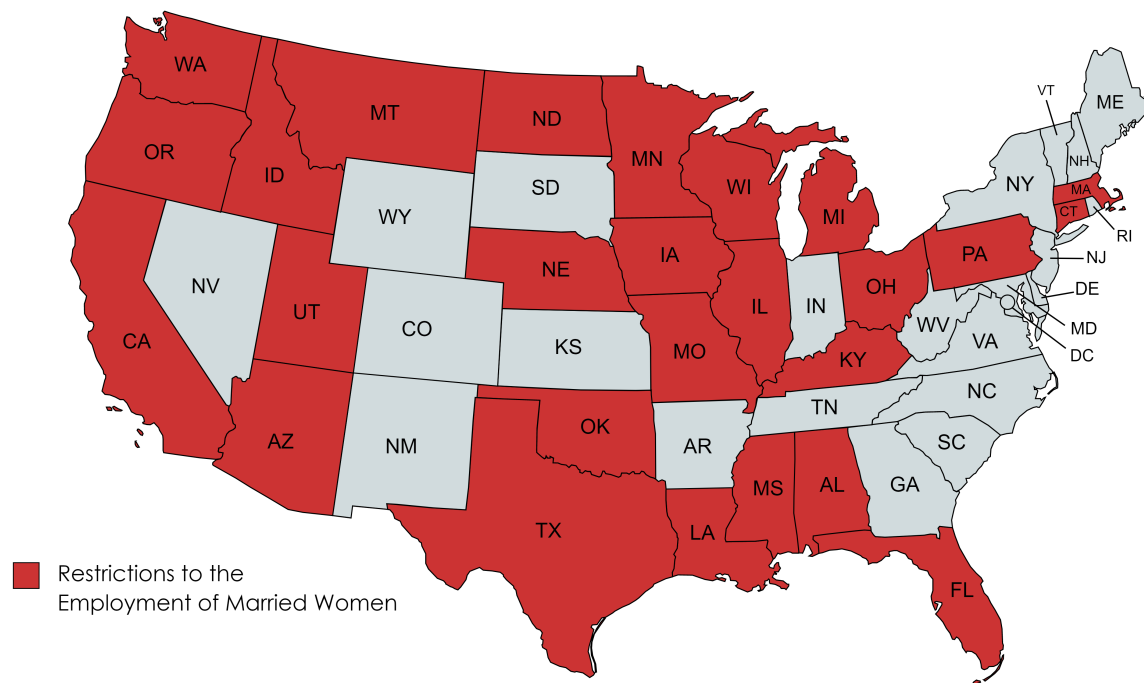
The figure shows RD Results between postmasters appointed just before and after the 1933 presidential transition for women (left column) and men (right column). The outcome variables are whether one reported postmaster being their occupation in 1940, whether they were employed in 1940, and the number of weeks worked per year in 1939. The sample is linked data between postmaster appointments and the 1940 complete-count census. The running variable is the standardized distance between the initial appointment and the 1933 presidential transition dates. Data are plotted in quantile-spaced bins, and each bin contains roughly 40 observations. Data are re-weighted by inverse probability weights. The results in table form are shown in [Table 4](#). Results for additional outcomes are shown in [Figure A7](#).

Figure 5: 1940 Outcomes Between Women Postmasters and Their Women Neighbors



The figures are binned scatter plots of 1940 outcomes between women postmasters (left column) and their women neighbors (right column). The outcome variables are whether one reported postmaster being their occupation in 1940, whether they were employed in 1940, and the number of weeks worked per year in 1939. The sample is census tree linked data, which has a smaller number of observations and is different than the sample used in [Figure 4](#). $N(\text{Women PM})=736$ and $N(\text{Women Neighbors})=5,468$. The running variable is the standardized distance between the initial appointment and the 1933 presidential transition dates. Data are plotted in quantile-spaced bins, and each bin contains roughly 40 observations. Data are re-weighted by inverse probability weights.

Figure 6: States that Introduced Legislation Against Married Women Working During the 1930s



Created with mapchart.net

Author's reproduction of Shallcross, 1940. The figure shows the states that introduced legislation against married women working during the Great Depression.

11 Tables

Table 1: Presidential Transitions during the Early-Twentieth Century United States

Presidential Transition Dates	Incumbent President	Incoming President	Share of Women Postmasters
March 4, 1913	William Taft (R)	Woodrow Wilson (D)	7%
March 4, 1921	Woodrow Wilson (D)	Warren Harding (R)	12%
March 4, 1933	Herbert Hoover (R)	Franklin Roosevelt (D)	22%

The table outlines the timing of the presidential transitions that took place during the early-twentieth century United States. It also displays the share of women postmasters at each presidential transition.

Table 2: Predetermined Characteristics of Women Postmasters and the General Population

	(1) Women PM	(2) Married Women PM	(3) Women Neighbors	(4) All Women
Variables Based on the 1920 Census				
Age	33.6 (8.6)	35.1 (8.1)	37.7 (13.2)	36.2 (12.7)
White	98.8 (10.8)	98.4 (12.5)	96.6 (18.1)	89.9 (30.1)
Native Born	98.3 (13.1)	98.1 (13.8)	91.1 (28.4)	82.4 (38.0)
Urban	12.0 (32.5)	12.3 (32.9)	25.4 (43.5)	56.8 (49.5)
Farm	22.1 (41.5)	22.2 (41.6)	18.0 (38.4)	24.6 (43.0)
Married	70.8 (45.5)	- -	67.8 (46.7)	68.5 (46.5)
Employed	31.7 (46.5)	15.2 (35.9)	22.0 (41.4)	25.6 (43.7)
Self-Employed	3.3 (17.8)	1.9 (13.7)	2.9 (16.7)	3.7 (18.8)
Employed (H)	- -	98.0 (13.9)	- -	- -
Self-Employed (H)	- -	48.7 (50.0)	- -	- -
N	1892	1178	147815	30129809
Conditional on Head/Spouse				
Homeowner	66.3 (47.3)	66.8 (47.1)	57.9 (49.4)	44.2 (49.7)
# Children	1.8 (1.6)	1.8 (1.6)	1.8 (1.8)	2.1 (2.0)
N	1294	1178	102104	20965460
Variables Based on the 1940 Census				
Years of Education	11.7 (2.7)	11.7 (2.6)	10.1 (3.3)	9.0 (3.5)
Age at Appointment	38.6 (9.2)	37.5 (8.9)	- -	- -
N	2297	1223	144565	40803176

The table compares the predetermined characteristics of women postmasters appointed between 1921 and 1939 with the general female population. All samples are further restricted to be between ages 18-65. The outcome variables are years of education, age at appointment, age in 1920, whether one was White and native born (*100), urban and farm status in 1920 (*100), whether one was currently married in 1920 (*100), whether one/one's husband was gainfully employed in 1920 (*100), whether one/one's husband was self-employed in 1920 (*100), and whether one was a homeowner in 1920 (*100) and the number of children in the household in 1920 (conditional on head/spouse). The availability of variables varies by different samples and censuses. Postmaster data are weighted by inverse probability weights.

Table 3: Validity of RD - Predetermined Characteristics for Women Postmasters Appointed Just Before and After the 1933 Presidential Transition

	(1) Number of Obs	(2) RD Estimate	(3) Standard Errors
Variables from Sample of Women PM			
Republican Vote 1928 %	5728	2.013	(3.21)
Sales Loss PC 1929-1933	5728	1.084	(16.62)
Father's OCCScore Rank	5728	0.012	(0.01)
Linked to 1940	5728	0.025	(0.10)
Linked to 1920	5728	0.120	(0.07)
Variables from Sample of Linked Women PM (1940)			
Years of Education	2464	0.969	(0.74)
Age at Appointment	2464	-3.022	(2.32)
Variables from Sample of Linked Women PM (1920)			
Age	2063	-5.023	(3.02)
White	2063	0.072	(0.08)
Native Born	2063	-0.041	(0.02)
Married	2063	-0.121	(0.12)
Employed	2063	-0.167	(0.21)
Urban	2063	0.082	(0.07)
Farm	2063	-0.315	(0.17)
South	2063	-0.237	(0.20)
<i>Conditional on Household Head/Spouse</i>			
Homeowner	1295	0.175	(0.22)
# Children	1295	-0.342	(0.55)

The table displays the RD estimates on pre-determined characteristics for women postmasters appointed between 1921 and 1939. The running variable is the distance between the initial appointment date and the presidential transition date (March 4, 1933). The outcome variables are county-level Republican vote share in 1928, county-level sales loss per capita between 1929 and 1933, father's OCCScore rank, the probability of the postmaster being linked to the 1940/1920 census, years of education, age at the appointment, age in 1920, whether one was White/native born/married/gainfully employed in 1920, farm and urban status in 1920, whether one lived in the South in 1920, whether one was a homeowner in 1920 (conditional on head/spouse), and the number of children in the household in 1920 (conditional on head/spouse). Standard errors are clustered by the running variable (Lee and Card, 2008), and linked data are re-weighted by inverse probability weights (Bailey et al., 2020). The availability of variables varies by different samples and censuses. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table 4: RD Estimates by Gender - 1940 Outcomes of Postmasters Appointed Just Before and After the 1933 Presidential Transition

	(1) Postmaster Occ	(2) Employed	(3) Weeks Worked	(4) Hours Worked	(5) Self- Employed	(6) Family Worker
<i>Panel A: RD Estimates on Women Postmasters</i>						
RD Estimate	0.330*** (0.10)	0.267** (0.09)	17.016*** (4.56)	11.186* (5.38)	-0.016 (0.05)	-0.026 (0.02)
N Women	2464	2464	2464	2464	2464	2464
N Effective	771	1017	1024	898	868	1092
Bandwidth	710.7	924.5	936.4	824.2	797.0	1051.0
<i>Panel B: RD Estimates on Male Postmasters</i>						
RD Estimate	0.503*** (0.06)	0.014 (0.03)	1.330 (2.34)	3.917 (3.96)	-0.348*** (0.11)	-0.009 (0.01)
N Men	8337	8337	8337	8337	8337	8337
N Effective	2564	3127	2648	2458	1701	3030
Bandwidth	675.8	807.7	701.7	629.8	438.1	789.2
<i>Panel C: Gender Differences in RD Estimates</i>						
RD Difference	0.173 (0.12)	-0.252** (0.10)	-15.686** (5.12)	-7.27 (6.68)	-0.332** (0.12)	0.017 (0.03)
N Total	10801	10801	10801	10801	10801	10801

The table reports RD Results between postmasters appointed just before and after the 1933 presidential transition for women (Panel A) and men (Panel B). The gender differences in RD are reported in Panel C. The outcome variables are whether one reported postmaster being their occupation in 1940, whether they were employed in 1940, the number of weeks worked per year in 1939, the number of hours worked per week, whether the postmaster was a family worker in 1940, and whether the postmaster was self-employed in 1940. Control variables include age, age squared, whether one was native-born/married/migrated during the last five years, and farm/urban status. It additionally reports clustered standard errors by the running variable, the number of effective observations, and the optimal bandwidth. Data are re-weighted by inverse probability weights. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table 5: DID Estimates on Employment Between Women Postmasters and Two Different Control Groups

<i>Bandwidth</i>	Outcome: Employed					
	1400	1600	1800	2000	2200	2400
<i>Panel A: Compared to Women in the Same Neighborhood in 1920</i>						
$PM_i \times Post_t$	0.005 (0.07)	-0.016 (0.06)	-0.063 (0.06)	-0.060 (0.06)	-0.042 (0.06)	-0.023 (0.05)
PM_i	0.116* (0.05)	0.130** (0.04)	0.167*** (0.04)	0.180*** (0.04)	0.166*** (0.04)	0.149*** (0.04)
$Post_t$	0.028 (0.04)	0.033 (0.04)	0.052 (0.04)	0.069 (0.04)	0.062 (0.04)	0.048 (0.03)
N Total	836	927	1054	1212	1284	1368
Neighborhood FE	X	X	X	X	X	X
Education FE	X	X	X	X	X	X
<i>Panel B: Compared to Women in the Same County in 1920 w/ Matching</i>						
$PM_i \times Post_t$	0.078 (0.05)	0.049 (0.05)	0.027 (0.05)	0.055 (0.05)	0.067 (0.05)	0.076 (0.05)
PM_i	0.066* (0.03)	0.080** (0.03)	0.089*** (0.03)	0.087*** (0.03)	0.089*** (0.03)	0.077** (0.02)
$Post_t$	0.051 (0.04)	0.040 (0.04)	0.038 (0.03)	0.051 (0.04)	0.048 (0.03)	0.046 (0.03)
N Total	1532	1654	1780	2086	2185	2323
County FE	X	X	X	X	X	X

The table reports DID estimates on the employment outcome between women who were appointed postmasters before the 1933 presidential transition and two different control groups. In Panel A, the control group is women who lived in the same neighborhood as women postmasters in 1920, where the neighborhood is defined by the microfilm and page numbers of the complete-count census. Neighborhood and education fixed effects are included. In Panel B, the control group is matched women who lived in the same county as women postmasters in 1920, where the matching depends on education, marital/employment/homeownership status, and the number of children in 1920. County fixed effects are included. Different columns indicate different samples of women postmasters who were appointed within 1400/1600/1800/2000/2200/2400 days of the 1933 presidential transition. Data are re-weighted by inverse probability weights. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table 6: RD Estimates For Women By State-Level Discrimination Against Married Women and the Severity of the Great Depression

	(1) Postmaster Occ	(2) Employed	(3) Weeks Worked	(4) Hours Worked	(5) Self- Employed	(6) Family Worker
<i>Panel A: States w. Legislation against Married Women Working</i>						
RD Estimate	0.340* (0.15)	0.393*** (0.11)	22.569*** (5.92)	15.248* (6.23)	0.011 (0.03)	-0.012 (0.02)
N	1641	1641	1641	1641	1641	1641
<i>Panel B: States w/o Legislation against Married Women Working</i>						
RD Estimate	0.298* (0.14)	0.049 (0.18)	8.770 (7.99)	2.458 (11.00)	-0.103 (0.11)	-0.023 (0.06)
N	823	823	823	823	823	823
<i>Panel C: Counties w. Above Median Retail Sales Loss Per Capita</i>						
RD Estimate	0.409*** (0.10)	0.408** (0.13)	23.587*** (5.21)	12.912 (7.02)	0.079* (0.03)	-0.051 (0.04)
N	1480	1480	1480	1480	1480	1480
<i>Panel D: Counties w. Below Median Retail Sales Loss Per Capita</i>						
RD Estimate	0.321 (0.28)	-0.073 (0.18)	4.944 (8.84)	7.529 (11.49)	-0.338 (0.18)	0.007 (0.01)
N	984	984	984	984	984	984

The table reports RD Results between women postmasters appointed just before and after the 1933 presidential transition by state-level discrimination against married women (Panel A and B) and the severity of the Great Depression (Panel C and D). Data on states that introduced legislation against married women working are from Shallcross, 1940. The severity of the Great Depression is measured by retail sales loss per capita between 1929 and 1933 (Fishback et al., 2005). The outcome variables are whether one reported postmaster being their occupation in 1940, whether they were employed in 1940, the number of weeks worked per year in 1939, the number of hours worked per week, whether the postmaster was self-employed in 1940, and whether the postmaster was a family worker in 1940. Standard errors are clustered by the running variable. Data are re-weighted by inverse probability weights. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

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12 Online Appendix, Additional Figures and Tables

12.1 Eligibility of Postmaster Candidates and Civil Service Exams

The Civil Service Commission established several minimum requirements for postmaster candidates. For example, the candidate must be a US citizen, and a naturalized citizen is acceptable. Male candidates must be 21 years old and above, and female candidates must be 18 and above. The candidate must also reside in the delivery area of the post office he or she would be in charge of (United States Civil Service Commission, 1916).

Meeting the minimum requirement only made the candidate eligible for the civil service exam, while only the top candidates from the exam would be considered for the position. Candidates for postmasters were tested on a few subjects. The most important subject was arithmetic which includes addition, subtraction, multiplication, and division. For example, one exam question asked the candidates to make an itemized list of transacted money orders over the past month, as well as to balance and close the statement based on fees charged in each money order. Arithmetic skills were necessary because postmasters must keep track of sales and receipts to report post office revenue correctly. Additional subjects included penmanship and letter writing which would help communication between post offices, efficient mail delivery, and many other post office businesses (United States Civil Service Commission, 1916).

Postmasters in larger post offices were subject to even higher standards. Specifically, postmasters in charge of Class 3 post offices and above must demonstrate “business training, experience, and fitness” and “the ability in meeting and dealing satisfactorily with the public” (United States Civil Service Commission, 1922). The demonstration often included a personal history of past business managing experience that needed to be verified by the civil service commission. The highest paying post offices specifically required more than 5 to 7 years of experience in similar types of employment (United States Civil Service Commission, 1922).

Figure A10 shows the requirement for postmasters in charge of Class 3 post offices and an example question that asks the candidates to calculate the fees associated with money orders received in a specific post office.

12.2 Sample of Postmasters and Post Offices in the Analysis

Post offices were classified into Class 1 through 4 based on post office revenue and postmaster salary. Class 1 post offices are the largest, often in metropolitan areas, and were subject to the highest demand for mail and parcels. Class 4 post offices are the smallest, serving local towns with a few hundred residents. Due to differences in mail volumes and post office revenue, postmasters of Class 1 post offices have the highest salary, ranging from \$5,000 to \$10,000 per year during the early 20th Century, while postmasters of Class 4 have the lowest salary and over 70 percent of them received below \$100 per year (Hoogenboom, 1959). The classification was adjusted every two years based on post office revenue, but most adjustments were minor changes since mail volumes (determined by population in a locality) were relatively stable over the years.

I only include postmasters who were presidential appointees in the analysis. This group of postmasters is often referred to as Class 1, 2, and 3 postmasters. I do not include postmasters from Class 4, who stopped being presidential appointees between 1909 and 1913 when President Theodore Roosevelt and President William Taft took the initiative to classify Class 4 post offices under the merit system.⁴⁰ Additionally, given the low level of compensation for Class 4 postmasters, it is unlikely that being a postmaster was their full-time job. Gaining or losing a part-time postmaster job at a Class 4 post office might have little impact on the person's overall labor market outcomes. This also implies that Class 4 postmasters had higher turnover rates than others and more frequent turnovers outside presidential transition periods, which makes linking Class 4 postmasters to the complete count censuses much more complex since postmasters might have moved away from the county/state of appointment.

⁴⁰Classifying Class 4 post offices under merit system was a political decision since Class 4 postmasters had the lowest stake among all presidential appointees and both executive orders went into effect as Roosevelt and Taft were leaving office.

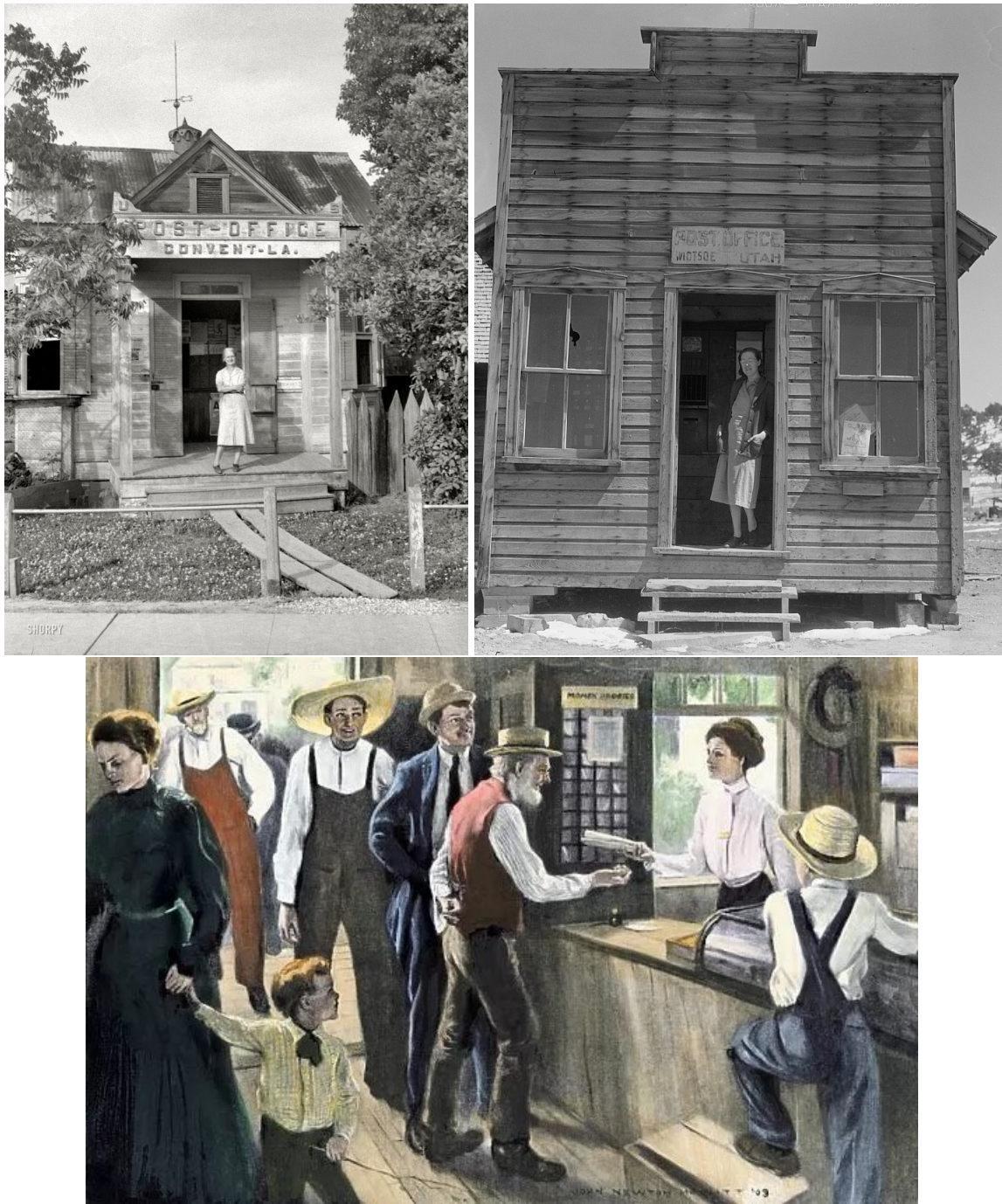
12.3 Fuzzy RD Design

Given that postmasters appointed by one party were unlikely to be appointed by the opposite party after the presidential transition, sharp RD design is the preferred identification. However, since [Figure 4](#) shows that the probability of being a postmaster in 1940 does not increase discontinuously from 0 to 1 at the presidential transition date, it is necessary to examine results based on a fuzzy RD design.

The fuzzy RD design is similar to the Instrumental Variables (IV) approach. I estimate a first-stage regression of reporting one's occupation as the postmaster in 1940 on the running variable. Since the distance between the initial appointment date and the presidential transition date is taken as exogenous, the fuzzy RD design recovers the causal effect of being appointed just before the presidential transition date on the 1940 labor market outcomes.

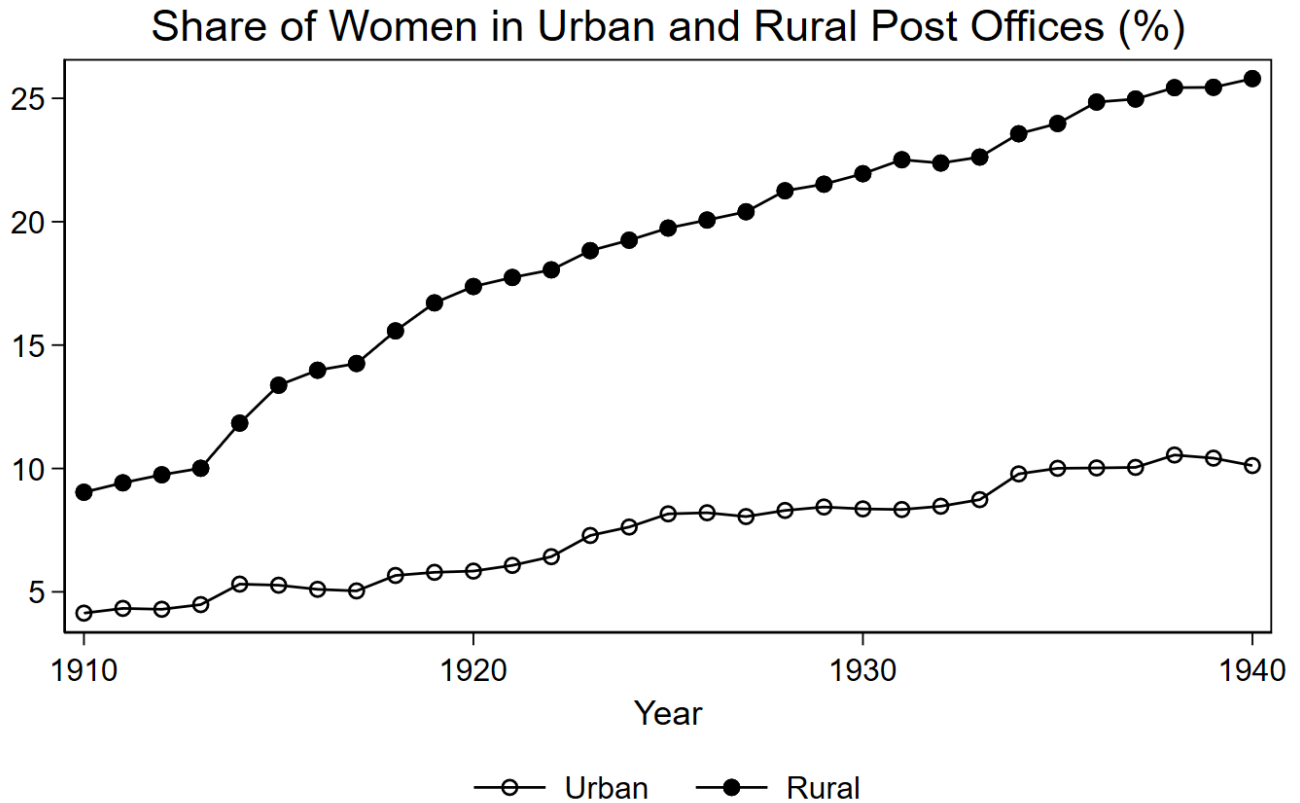
As shown in [Table A4](#), the fuzzy RD results are larger but consistent with the baseline RD results from [Table 4](#). For women appointed just before the presidential transition, they experienced a 78 pp. reduction in their probability of employment in 1940 relative to women appointed just after the presidential transition. They also experienced a reduction in their labor supply by 51 weeks worked per year and 33 hours worked per week. On the other hand, male postmasters appointed just before the presidential transition didn't experience an effect on their employment and labor supply, but they were 70 pp. more likely to be self-employed than male postmasters appointed just after the presidential transition.

Figure A1: Work Arrangements of Women Postmasters



Top left: Photo of a woman postmaster in Covert, Louisiana, taken by John Vachon for the Farm Security Administration. Top right: Photo of a woman postmaster in a Utah post office published by the National Postal Museum. Bottom: the reproduction of a 1905 illustration, "Meeting the new postmistress, early 1900s" (original source unknown).

Figure A2: Share of Women Postmasters in Urban and Rural Post Offices



The figure shows the share of women postmasters in urban and rural post offices between 1910 and 1940. Urban post offices were defined as Class 1 and Class 2 post offices, and rural post offices were defined as Class 3 post offices (based on the definition in the Postal Guide). The shares are calculated based on the dataset “Record of Appointment of Postmasters, 1832-1971”.

Figure A3: Number of Postmasters Removed during the Late-Nineteenth Century

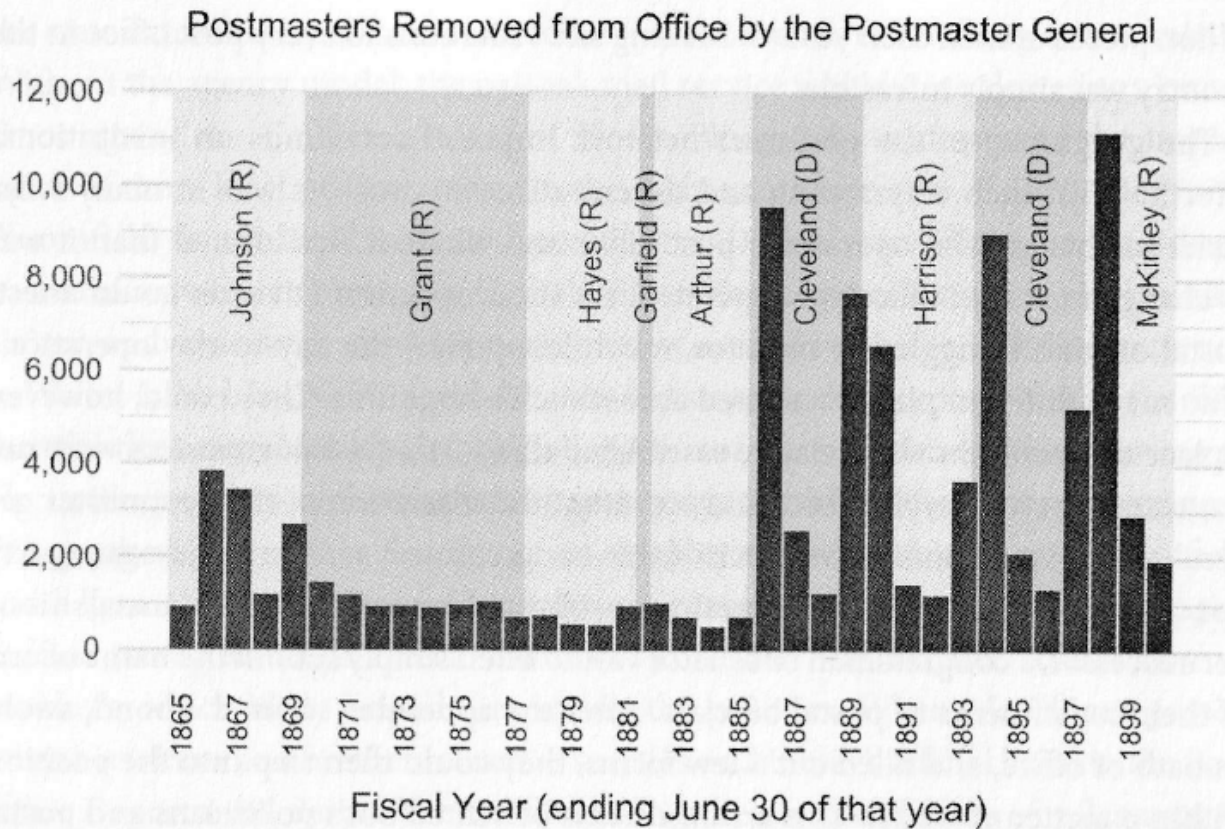


Figure 5.10 The Spoils System

This chart displays the number of postmasters who were removed from office over the preceding fiscal year (July 1 to June 30) between 1865 and 1900. These numbers were transcribed from the Annual Reports of the Postmaster General, 1865–1900.

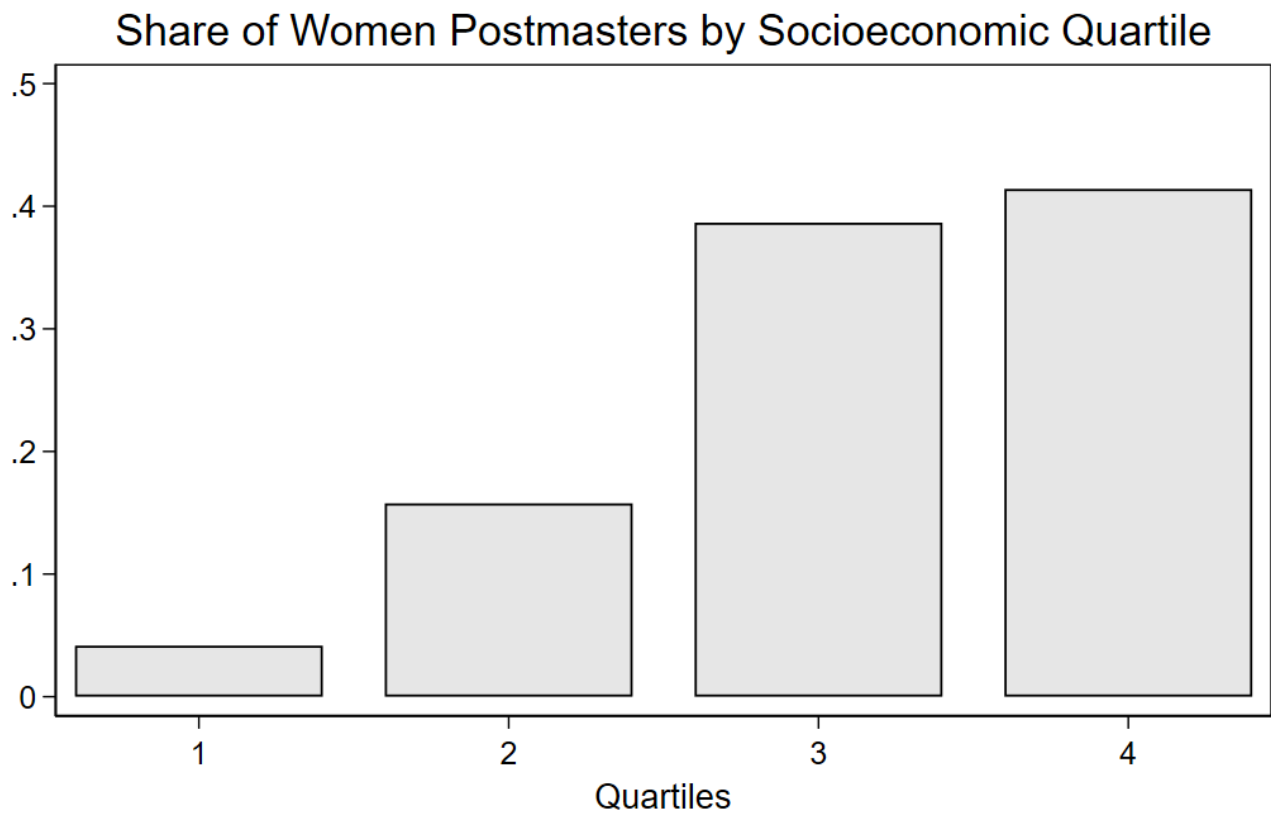
The figure shows the number of postmasters removed in each fiscal year during the late-nineteenth Century United States (Blevins, 2021).

Figure A4: Sample Image of US Official Postal Guide, 1939

CONNECTICUT—Continued			CONNECTICUT—Continued			DISTRICT OF COLUMBIA		
Office	Class	Salary	Office	Class	Salary	Office	Class	Salary
Glastonbury.... GV	2	\$2,700	South Norwalk..G F	1	\$3,800	Washington.....G F	1	\$10,000
Glenville.....	3	2,000	Southport.....	2	2,500	FLORIDA		
Granby.....	3	1,600	South Willington..	3	1,700	Alachua.....	3	1,900
Greens Farms....	2	2,400	Springdale..... F	2	2,500	Altamonte Springs...	3	1,200
Greenwich.....G F	1	5,000	Stafford Springs... F	2	2,500	Altha.....	3	1,400
Guilford..... F	2	2,400	Stamford.....G F	1	4,500	Apalachicola....G F	2	2,400
Haddam.....	3	1,600	Stepney Depot.....	3	1,800	Apopka.....	2	2,400
Hartford.....G F	1	7,000	Sterling.....	3	1,600	Arcadia.....G F	2	2,600
Hazardville.....	3	1,700	Stonington..... F	2	2,500	Archer.....	3	1,400
Higganum.....	3	1,800	Stony Creek.....	3	1,600	Atlantic Beach.....	3	1,800
Ivoryton.....	2	2,500	Suffield..... V	3	2,200	Auburndale.....	2	2,400
Jewett City..... F	2	2,500	Taftville.....	3	2,100	Avon Park.....	2	2,500
Kensington..... V	2	2,500	Terryville.....	2	2,500	Babson Park.....	3	1,700
Kent.....	3	2,300	Thomaston.....G F	2	2,700	Bagdad.....	3	1,200
Killingly.....	3	1,500	Thompson.....	3	1,500	Baker.....	3	1,300
Lakeville.....	2	2,500	Thompsonville..G F	2	2,900	Bartow.....G F	2	2,800
Litchfield.....	2	2,700	Torrington.....G F	1	3,600	Bay Harbor.....	3	1,700
Madison.....	2	2,500	Uncasville.....	3	1,900	Bay Pines.....	3	1,800
Manchester.....G F	1	3,500	Unionville..... V	2	2,500	Belleair.....	3	1,100
Mansfield Depot...	3	1,400	Versailles.....	3	1,600	Belle Glade.....	3	2,300
Meriden.....G F	1	3,900	Voluntown.....	3	1,300	Blountstown.....	3	2,100
Middlebury.....	2	1,900	Wallingford.....G F	1	3,500	Bocagrande.....	3	1,900
Middlefield.....	3	2,300	Warehouse Point...	3	1,700	Boca Raton.....	3	1,900
Middletown....G F	1	3,700	Washington.....	3	2,100	Bonifay..... V	3	2,200
Milford.....G F	1	3,300	Washington Depot..	3	2,100	Bowling Green.....	3	1,600
Milldale.....	3	2,200	Waterbury.....G F	1	4,500	Boynton.....	3	1,900
Montville.....	3	2,100	Waterford.....	3	2,000	Bradenton.....G F	1	3,300
Moodus.....	3	2,300	Watertown..... F	2	2,700	Branford.....	3	1,600
Moosup.....	3	2,200	Wauregan.....	3	1,300	Brewster.....	3	1,400
Mystic.....G F	2	2,700	Westbrook.....	3	2,300	Bronson.....	3	1,100
Naugatuck.....G F	1	3,500	West Cheshire.....	3	2,100	Brooksville..... F	2	2,400
New Britain.....G F	1	4,200	West Cornwall.....	3	1,500	Bunnell.....	3	1,900
New Canaan..... F	1	3,200	Westport.....G F	1	3,400	Bushnell.....	3	1,900
New Hartford.....	3	2,000	West Willington..	3	1,400	Callahan.....	3	1,500
New Haven.....G F	1	7,000	Willimantic.....G F	1	3,300	Canal Point.....	3	1,700
Newington.....	3	2,200	Wilton.....	3	2,300	Carrabelle.....	3	1,600
New London....G F	1	3,800	Windsor..... F	2	2,700	Cedar Keys.....	3	1,400
New Milford....G F	2	2,900	Windsor Locks... F	2	2,400	Center Hill.....	3	1,500
New Preston.....	3	1,700	Winsted.....G F	1	3,200	Century.....	3	1,700
Newtown.....	3	2,300	Woodbury.....	3	2,100	Chattahoochee...	3	2,300
Niantic.....	2	2,400	Woodmont.....	3	1,900	Chiefland.....	3	1,400
Noank.....	3	1,600	Yalesville.....	3	1,400	Chipleigh..... V	2	2,400
Norfolk.....	2	2,400	Yantic.....	3	1,500	Citra.....	3	1,100
Noroton.....	3	2,200	DELAWARE			Clearwater.....G F	1	3,400
Noroton Heights...	3	2,200	Bellevue.....	3	1,100	Clermont.....	2	2,400
North Grosvenor Dale	3	1,900	Bridgeville.....	3	2,300	Clewiston.....	2	2,400
North Haven.....	3	2,100	Camden.....	3	1,600	Cocoa.....	2	2,600
North Stonington...	3	1,200	Cheswold.....	3	1,200	Coronado Beach...	3	1,400
Norwalk.....G F	1	3,600	Claymont..... V	2	2,400	Cottondale.....	3	1,500
Norwich.....G F	1	3,700						

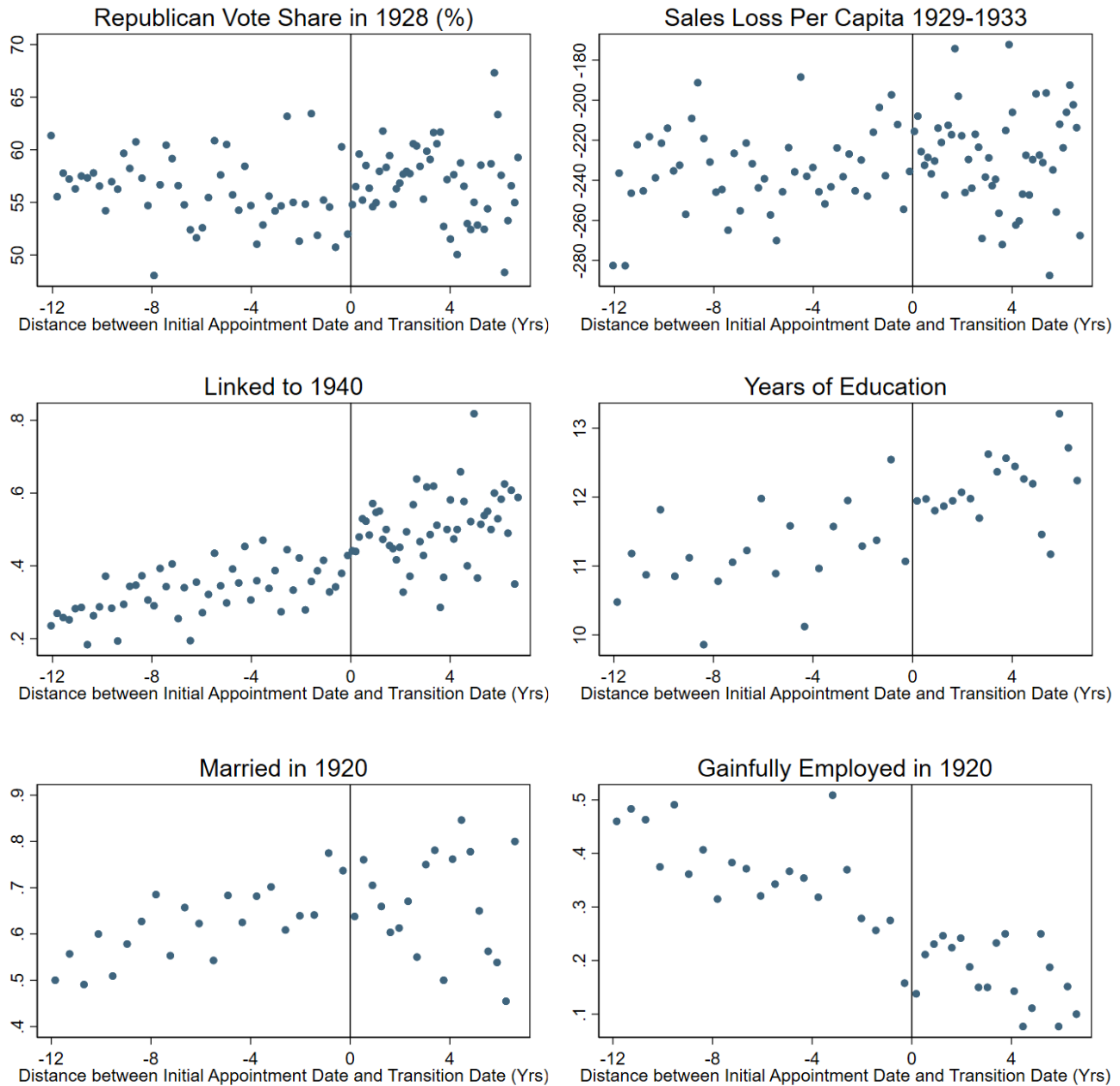
The figure shows the postmaster salary and level of classification for post offices in Connecticut, Delaware, District of Columbia, and Florida in 1939 (United States Government Printing Office, 1939). For example, the Clermont post office in Florida was a Class 2 post office, which suggested that it was one of the larger post offices in urban areas. The postmaster's salary was \$2,400.

Figure A5: Share of Women Postmasters in Each Socioeconomic Quartile



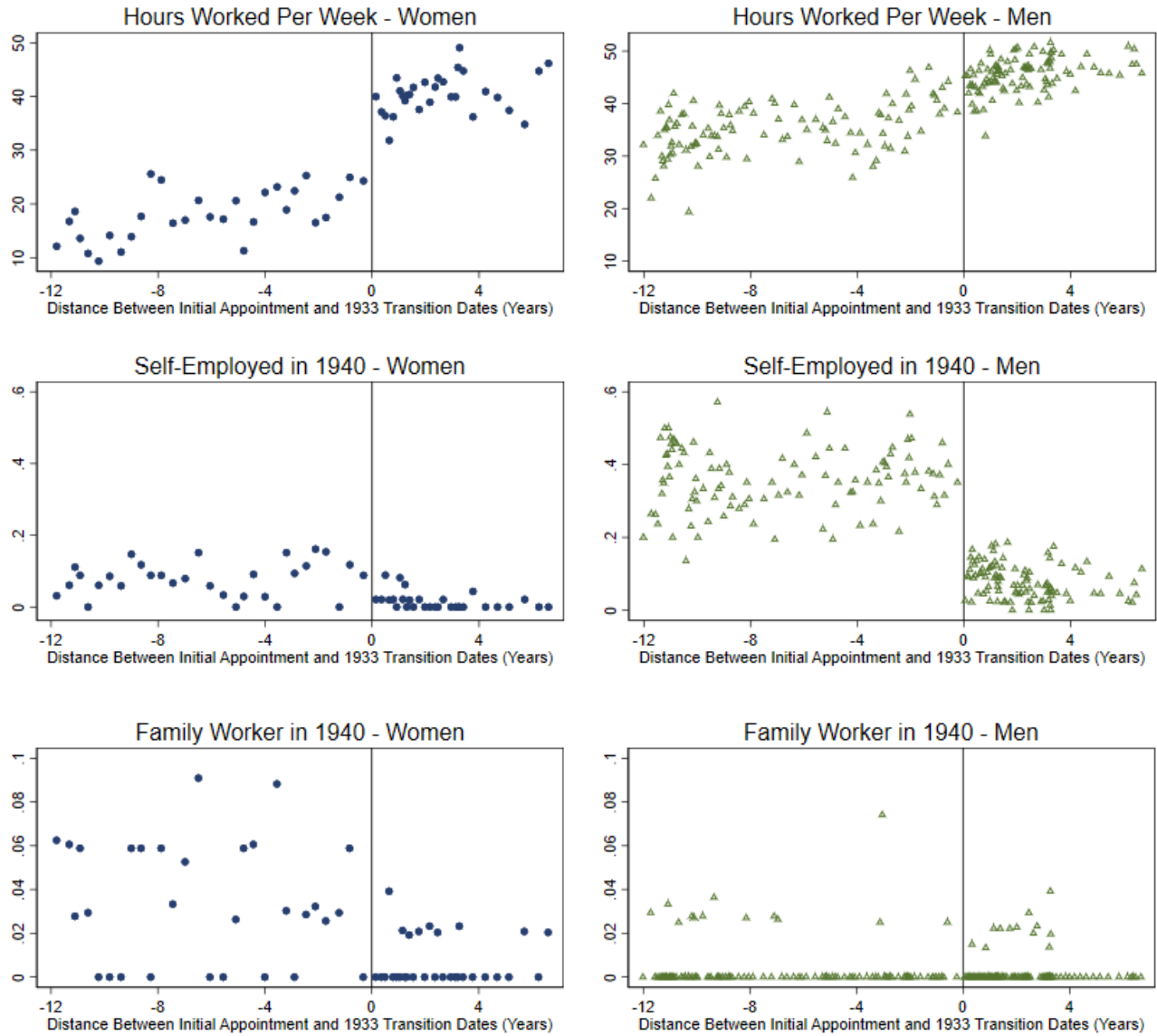
The figure shows the share of women postmasters in each socioeconomic quartile (N=5,600). Socioeconomic backgrounds are imputed by first names (Olivetti and Paserman, 2015). Quartile 1 is the bottom 25 percent, and Quartile 4 is the top 25 percent.

Figure A6: Validity of RD – Pre-Determined Characteristics for Women Postmasters Appointed Just Before and Just After the 1933 Presidential Transition



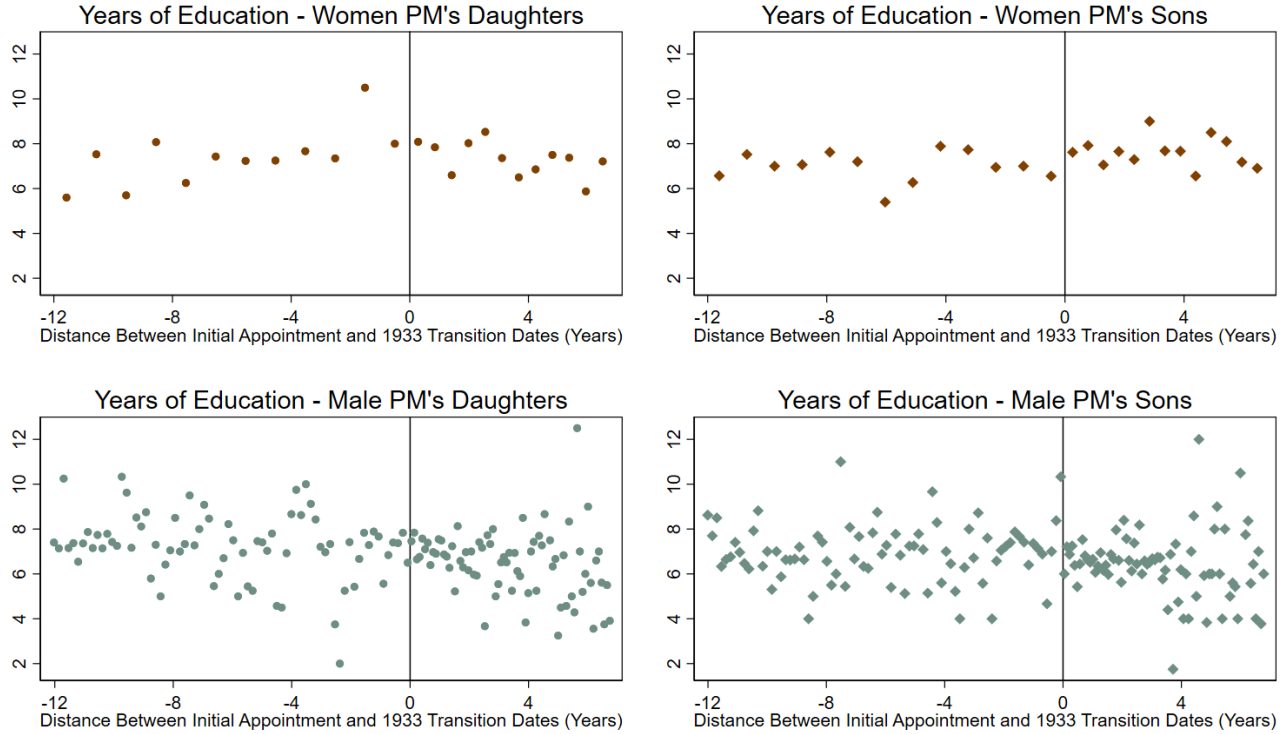
The figures plot pre-determined characteristics for women postmasters. The running variable is the standardized distance between the initial appointment and the 1933 presidential transition dates. The outcome variables are county-level Republican vote share in 1928, county-level sales loss per capita between 1929 and 1933, whether the postmaster is linked to the 1940 census, the postmaster's years of education, and whether the postmaster was married/gainfully employed in 1920. The first three variables are from the full sample of women postmasters, and the last three variables are from the linked sample of women postmasters. Data are plotted in quantile-spaced bins, and each bin contains roughly 40 observations. Data are re-weighted by inverse probability weights. The availability of variables varies by different samples and censuses (see more details in [Table 3](#)).

Figure A7: Additional RD Results on 1940 Outcomes Between Postmasters Appointed Just Before and Just After the 1933 Presidential Transition - By Gender



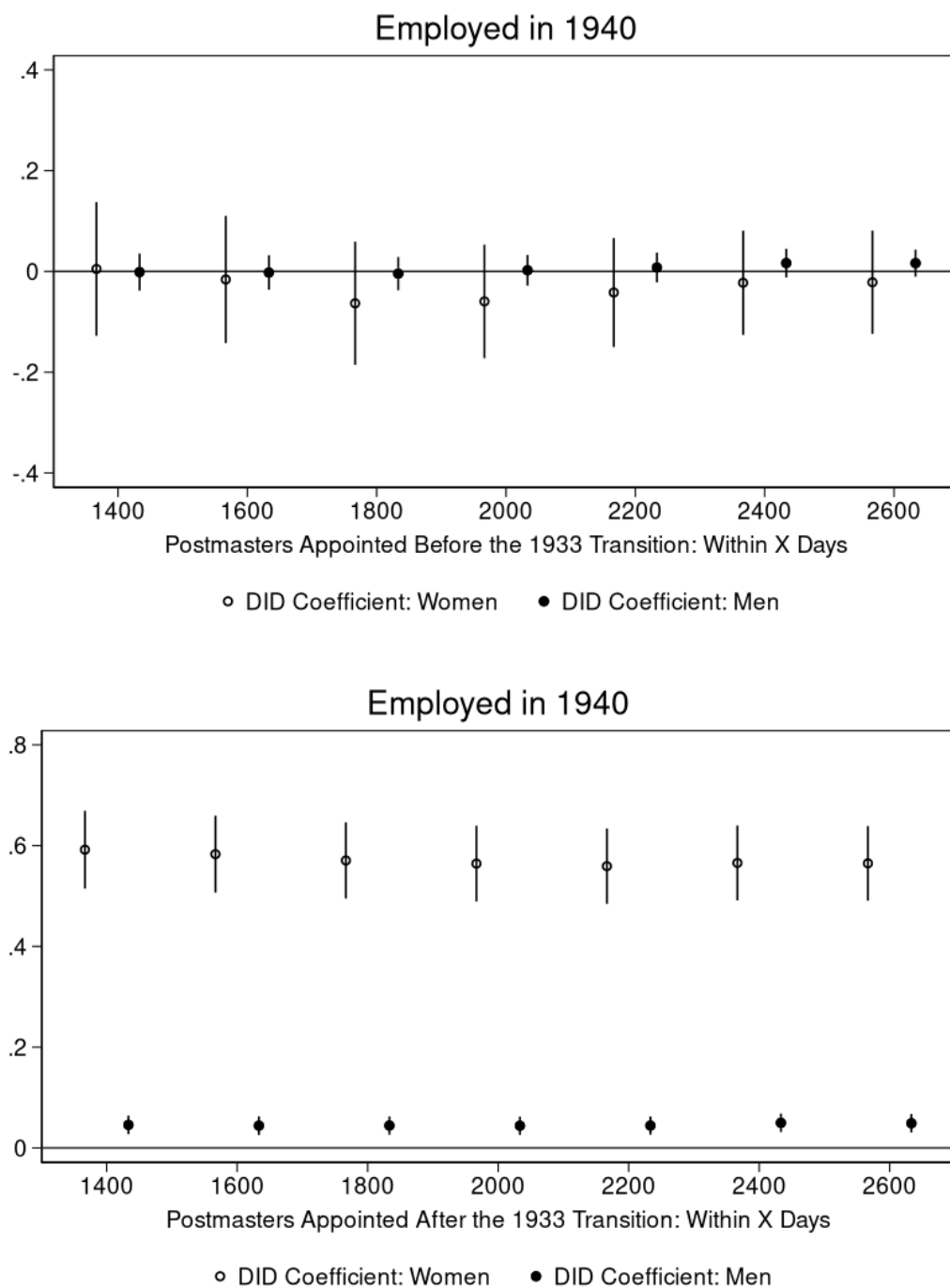
The figure shows RD Results between postmasters appointed just before and after the 1933 presidential transition for women (left column) and men (right column). The outcome variables are the number of hours worked per week, whether the postmaster was self-employed in 1940, and whether the postmaster was a family worker in 1940. The sample is linked data between postmaster appointments and the 1940 complete-count census. The running variable is the standardized distance between the initial appointment and the 1933 presidential transition dates. Data are plotted in quantile-spaced bins, and each bin contains roughly 40 observations. Data are re-weighted by inverse probability weights.

Figure A8: RD Results on Years of Education of Children of Postmasters Appointed Just Before and Just After the 1933 Presidential Transition



The figure shows RD Results on years of education of children of postmasters appointed just before and after the 1933 presidential transition. The outcome variable is years of education accomplished. The sample is children of postmasters who are linked between postmaster appointments and the 1940 complete-count census. The sample is further restricted to those who were between 6 and 18 years old in 1940. The number of observations from left to right and from up to down is 508, 540, 2966 and 3144. The running variable is the standardized distance between the initial appointment and the 1933 presidential transition dates. Data are plotted in quantile-spaced bins, and each bin contains roughly 20 observations. Data are re-weighted by inverse probability weights.

Figure A9: DID Estimates By Gender - Postmasters v.s Their Neighbors



The figures show the DID estimates between postmasters and their neighbors. The sample is the census tree linked data. The figure above compares postmasters appointed before the 1933 presidential transition and their neighbors (by gender), and the figure below compares postmasters appointed after the 1933 presidential transition and their neighbors (by gender). Each dot plots the DID coefficient from a separate regression that restricts the sample to postmasters appointed within 1400/1600/1800/2000/2200/2400/2600 days of the 1933 presidential transition date. Neighborhood and education fixed effects are included.

Figure A10: Civil Service Exams Requirements for Postmasters

Subjects.	Weights.
1. Accounts and arithmetic (this test includes a simple statement of a postmaster's monthly money-order account in a prepared form, furnished the candidate in the examination, and a few problems comprising addition, subtraction, multiplication, division, percentage, and their business applications).....	3
2. Penmanship (a test of ability to write legibly, rated on the specimen shown in the subject of letter writing).....	1
3. Letter writing (this subject is intended to test the candidate's ability to express himself intelligently in a business letter on a practical subject).....	1
4. Business training, experience and fitness (under this subject, full and careful consideration is given to the candidate's business training and experience. The rating is based upon the candidate's sworn statements of his personal history, as verified after inquiry by the commission. It must be clearly shown that the candidate has demonstrated ability in meeting and dealing satisfactorily with the public).....	5
Total.....	10

2. The money-order transactions at Avon, Mass., post office for the month of May, 1914, were as follows:

Money-order fund on hand May 1, \$18. May 1, transferred from postal account to money-order account, \$27. May 2, paid money order, \$39.06. May 3, issued money order for \$49.50. May 5, issued money order, \$80.91. May 6, paid money order, \$7.29. May 7, issued money order, \$18.27. May 8, paid money order, \$27.81. May 9, issued money order, \$63. May 10, paid money order, \$19.80. May 12, paid money order, 81 cents. May 13, issued money order, \$4.77. May 14, paid money order, \$9.27. May 15, issued money order, \$29.07. May 16, paid money order, \$9.72. May 17, issued money order, \$9.72. May 19, issued money order, \$57.24. May 20, paid money order, 99 cents. May 21, issued money order, 72 cents. May 22, paid money order, \$45. May 23, issued money order, \$36. May 24, paid money order, \$2.97. May 26, paid money order, \$7.29. May 27, issued money order, \$72. May 28, paid money order, \$9.72. May 29, issued money order, \$4.59. May 30, postmaster deposited in the United States depository to the credit of the Post Office Department \$90, and received a certificate of deposit. May 31, issued money order, \$46.89. May 31, postmaster credited himself for errors as per auditor's circular, \$1.62.

Make an itemized statement of the postmaster's money-order account in the form provided, and balance and close the statement.

Schedule of fees over and above the amount of the order which the postmaster must collect from the public for the Government on issue of money orders.

For orders from \$0.01 to \$2.50.....	3 cents.	For orders from \$30.01 to \$40.00.....	15 cents.
For orders from \$2.51 to \$5.00.....	5 cents.	For orders from \$40.01 to \$50.00.....	18 cents.
For orders from \$5.01 to \$10.00.....	8 cents.	For orders from \$50.01 to \$60.00.....	20 cents.
For orders from \$10.01 to \$20.00.....	10 cents.	For orders from \$60.01 to \$75.00.....	25 cents.
For orders from \$20.01 to \$30.00.....	12 cents.	For orders from \$75.01 to \$100.00.....	30 cents.

The figure shows the requirement for postmasters in charge of Class 3 post offices and an example question that asks the candidates to calculate the fees associated with money orders received in a specific post office (United States Civil Service Commission, 1916).

Table A1: Robustness Checks on RD Estimates (Women Only) - 1940 Outcomes of Postmasters Appointed Just Before and After the 1933 Presidential Transition

	(1) Postmaster Occ	(2) Employed	(3) Weeks Worked	(4) Hours Worked	(5) Self- Employed	(6) Family Worker
<i>A. Bias-Corrected RD w. Robust Variance Estimator</i>						
RD Estimate	0.300** (0.10)	0.266** (0.09)	16.891*** (4.56)	10.242 (5.38)	-0.011 (0.05)	-0.031 (0.02)
<i>B. Epanechnikov Kernel Density</i>						
RD Estimate	0.491*** (0.07)	0.017 (0.03)	1.633 (2.31)	4.073 (3.99)	-0.341*** (0.10)	-0.010 (0.01)
<i>C. Bandwidth = 1000 Days</i>						
RD Estimate	0.358*** (0.10)	0.267** (0.09)	17.126*** (4.38)	11.629* (5.76)	-0.028 (0.05)	-0.027 (0.03)
<i>D. County-level Controls</i>						
RD Estimate	0.349*** (0.09)	0.264** (0.09)	17.189*** (4.61)	11.219* (5.69)	-0.021 (0.05)	-0.026 (0.02)
<i>E. Age Group Fixed Effects</i>						
RD Estimate	0.339*** (0.10)	0.274** (0.09)	17.347*** (4.56)	11.360* (5.21)	-0.022 (0.05)	-0.025 (0.02)
<i>F. Placebo Test</i>						
RD Estimate	-0.136 (0.09)	-0.077 (0.12)	-3.887 (6.13)	-3.863 (5.51)	0.051 (0.09)	-0.036 (0.04)
N	2464	2464	2464	2464	2464	2464
<i>G. Donut RD dropping obs appointed after the 1932 election</i>						
RD Estimate	0.516*** (0.14)	0.237* (0.10)	16.762*** (5.04)	11.293* (5.51)	-0.134 (0.10)	-0.045 (0.05)
N	2391	2391	2391	2391	2391	2391

The table reports robustness checks on RD estimates from Table 4. Panel A to Panel G report RD results with (A) bias-corrected RD estimates with robust variance estimator; (B) an Epanechnikov kernel density function; (C) bandwidth = 1000 days; (D) county-level control variables; (E) age group fixed effects; (F) a placebo test where the placebo presidential transition date is March 4th, 1926; (G) a donut RD design where observations within the distance between the election date in 1932 and the transition date in 1933 are dropped. Standard errors are clustered by the running variable. Data are re-weighted by inverse probability weights. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table A2: RD Estimates By Socioeconomic Backgrounds (Women Only) - 1940 Outcomes of Postmasters Appointed Just Before and After the 1933 Presidential Transition

	(1) Postmaster Occ	(2) Employed	(3) Weeks Worked	(4) Hours Worked	(5) Self- Employed	(6) Family Worker
<i>Panel A: Women from High Socioeconomic Backgrounds</i>						
RD Estimate	0.250 (0.19)	0.549** (0.17)	28.630*** (8.50)	18.892* (8.19)	0.085 (0.05)	-0.107 (0.07)
N	959	959	959	959	959	959
<i>Panel B: Women from Low Socioeconomic Backgrounds</i>						
RD Estimate	0.411** (0.13)	0.223 (0.13)	14.938* (7.05)	11.332 (8.11)	-0.085 (0.07)	0.017 (0.01)
N	1399	1399	1399	1399	1399	1399

The table reports RD Results between women postmasters appointed just before and after the 1933 presidential transition by their socioeconomic backgrounds. Women's socioeconomic backgrounds are imputed based on their first names following the procedures shown in Olivetti and Paserman, 2015. High socioeconomic backgrounds are defined as having fathers whose occupational ranks were above the 75th percentile in 1900. The outcome variables are whether one reported postmaster being their occupation in 1940, whether they were employed in 1940, the number of weeks worked per year in 1939, the number of hours worked per week, whether the postmaster was self-employed in 1940, and whether the postmaster was a family worker in 1940. Standard errors are clustered by the running variable. Data are re-weighted by inverse probability weights. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table A3: RD Estimates (Women Only) - 1940 Household Outcomes of Postmasters Appointed Just Before and After the 1933 Presidential Transition

	(1) # Children	(2) # Children Under 5	(3) # Grand Children	(4) # Parents	(5) # Servants
RD Estimate	-0.048 (0.05)	0.076 (0.21)	-0.099 (0.09)	0.108 (0.06)	0.049 (0.06)
N	1933	1933	1933	1933	1933

The table reports RD estimates on 1940 household outcomes for postmasters appointed just before and after the 1933 presidential transition. The sample is restricted to married women who is the head/spouse of the household. The running variable is the distance between the initial appointment date and the presidential transition date (March 4, 1933). The outcome variables are the number of children and children under 5, the number of grandchildren, the number of parents and parents-in-law, and the number of servants. Standard errors are clustered by the running variable (Lee and Card, 2008). Data are re-weighted by inverse probability weights (Bailey et al., 2020). * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table A4: Fuzzy RD Estimates by Gender - 1940 Outcomes of Postmasters Appointed Just Before and After the 1933 Presidential Transition

	(1) Employed	(2) Weeks Worked	(3) Hours Worked	(4) Self- Employed	(5) Family Worker
<i>Panel A: Fuzzy RD Estimates on Women Postmasters</i>					
RD Estimate	0.779** (0.24)	50.641*** (11.55)	32.864** (12.29)	-0.089 (0.17)	-0.042 (0.06)
N Total	2464	2464	2464	2464	2464
<i>Panel B: Fuzzy RD Estimates on Male Postmasters</i>					
RD Estimate	0.015 (0.05)	4.200 (3.92)	8.819 (8.45)	-0.693*** (0.16)	-0.018 (0.02)
N Total	8337	8337	8337	8337	8337

The table reports fuzzy RD Results between postmasters appointed just before and after the 1933 presidential transition for women (Panel A) and men (Panel B). The outcome variables are whether they were employed in 1940, the number of weeks worked per year in 1939, the number of hours worked per week, whether the postmaster was a family worker in 1940, and whether the postmaster was self-employed in 1940. Control variables include age, age squared, whether one was native-born/married/migrated during the last five years, and farm/urban status. It additionally reports clustered standard errors by the running variable, the number of effective observations, and the optimal bandwidth. Data are re-weighted by inverse probability weights.

* for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$

Table A5: DID Estimates on Employment Between Women Postmasters and Their 1920 Women Neighbors (5-Page and 10-Page Range)

<i>Bandwidth</i>	Outcome: Employed					
	1400	1600	1800	2000	2200	2400
<i>Panel A: Women PM App. Before the 1933 Transition v.s. Neighbors (± 5 Pages)</i>						
$PM_i \times Post_t$	-0.001 (0.07)	-0.016 (0.06)	-0.057 (0.06)	-0.053 (0.05)	-0.039 (0.05)	-0.022 (0.05)
N Total	5557	6154	7009	8151	8678	9332
Neighborhood FE	X	X	X	X	X	X
Education FE	X	X	X	X	X	X
<i>Panel B: Women PM App. Before the 1933 Transition v.s. Neighbors (± 10 Pages)</i>						
$PM_i \times Post_t$	0.000 (0.06)	-0.012 (0.06)	-0.052 (0.06)	-0.047 (0.05)	-0.033 (0.05)	-0.017 (0.05)
N Total	9465	10460	11902	13806	14685	15643
Neighborhood FE	X	X	X	X	X	X
Education FE	X	X	X	X	X	X

The table reports DID estimates on the employment outcome between women who were appointed postmasters before the 1933 presidential transition and their women neighbors (who were never appointed postmasters). Different columns indicate different samples of women postmasters (and their neighbors) who were appointed within 1400/1600/1800/2000/2200/2400 days of the 1933 presidential transition. Neighbors are defined as women who were within a 5- or 10-page range as recorded in the 1920 complete-count census data. Neighborhood and Education fixed effects are included. Data are re-weighted by inverse probability weights. * for $p < 0.05$, ** for $p < 0.01$, *** for $p < 0.001$