Shutting Down Japantown: The Effects of WWII Internment on Japanese American Enclaves *

Martin Saavedra †
Rutgers University and NBER

Tate Twinam ‡
College of William & Mary

August 18, 2025

Abstract

During World War II, the U.S. government incarcerated all West Coast Japanese Americans – including women, children, and citizens – in internment camps. We ask how this forced displacement affected Japanese American enclaves. Using the recently digitized 1940 and 1950 full-count censuses, we measure changes in the racial composition of neighborhoods across 14 major cities. We find that internment reduced the Japanese American population of enumeration districts within the exclusion zone by 25–50% relative to their 1940 levels, and that these individuals were replaced by African American in-movers in a nearly 1-to-1 fashion. Outside the exclusion zone, new Japanese American enclaves formed, but did not approach the scale of their historic West Coast counterparts.

JEL codes: R23, N12, J15
Keywords: Japanese Americans, Internment Camps, Little Tokyo, Japantown, Chinatown, Immigrant Enclaves, Forced Displacement.

*We are grateful for feedback from conference and seminar participants at the Vanderbilt Economic History Research Network meeting, the Southern Economic Association meeting, and Rutgers University. We thank Jack Campbell, Katherine Kivimaki, Elise Mikailov, and William Welch for excellent research assistance. All errors are our own.

†Department of Economics, Rutgers University, 208b New Jersey Hall, 75 Hamilton St., New Brunswick, NJ, 08901. E-mail: martin.saavedra@rutgers.edu.

‡Department of Economics, College of William & Mary, Chancellors Hall, 300 James Blair Dr., Williamsburg, VA, 23185. E-mail: tatwinam@wm.edu.

1 Introduction

Immigrants, particularly those belonging to ethnic and religious minorities, frequently cluster in well-defined enclaves, a pattern observed across many sending and receiving countries (Abramitzky and Boustan, 2017). Some of these communities are so well-established and historically stable that they appear on official maps.[1] Despite their prominence and longevity, quantitative work on the persistence and resilience of ethnic enclaves remains limited.

In particular, the response of immigrant and minority enclaves to episodes of forced displacement remains an open question. Wars and natural disasters have caused the displacement of significant civilian populations, as seen in the Syrian Civil War, Israeli–Palestinian conflict, and the aftermath of Hurricane Katrina. In other cases, the state itself engineers an exodus by deliberately targeting a minority group, as with the internment of Japanese Americans during World War II, or the current detention of Uyghur Muslims in Xinjiang, China. After immigrants are forcibly removed, what becomes of these newly vacated neighborhoods? Do they remain vacant, do other ethnic minorities move in, or do displaced groups reestablish these same enclaves when the displacing event concludes?

We address these questions in the context of the World War II incarceration of Japanese Americans in War Relocation Centers, commonly known as internment camps. Following Pearl Harbor, the U.S. military forcibly removed all Japanese Americans from the West Coast of the United States.[2] Anyone with at least one-sixteenth Japanese ancestry, including women, children, and U.S. citizens, was incarcerated in remote, barrack-style internment camps for most of the war. In this paper, we examine how internment affected Japanese enclaves (commonly known as Japantowns) both inside and outside the exclusion zone. Did Japanese Americans fully or partially reestablish their original enclaves after internment ended? If not, which groups replaced them in historic Japantowns? Did internment lead to the formation of new Japanese enclaves or the expansion of existing ones outside the exclusion zone?

[1] Examples include Little Italy, Chinatown, Koreatown, and Spanish Harlem in Manhattan, or Little Russia, Japantown, and Little Saigon in San Francisco.

[2] The exclusion zone included all of California and the western halves of Washington, Oregon, and Arizona.

To answer these questions, we digitize enumeration district maps from the 1940 and 1950 censuses for fourteen cities, including all nine mainland cities with at least 1,000 Japanese Americans in 1940. This approach allows us to measure changes in the racial composition of geographically consistent areas across thousands of urban neighborhoods. We document significant population declines in historic Japantowns within the exclusion zone and the establishment of new and smaller Japanese enclaves outside of it, a phenomenon that could be caused by internment itself or by Japanese Americans moving from their ports of entry as they assimilate. To distinguish these two channels, we construct a counterfactual for what would have occurred in Japantowns in the absence of internment.

Our identifying assumption is that Japantowns would have followed the same trajectory as similarly sized Chinatowns in the same region. Chinese Americans serve as the suitable control group because both groups arrived at the same ports of entry, lived in distinct ethnic enclaves, had comparable socioeconomic status, similar linguistic distance from English, and were frequently confused with each other by White Americans, likely resulting in comparable levels of discrimination prior to Pearl Harbor.[3] We support this assumption with three empirical exercises. First, we show that Japantowns and Chinatowns had similar population growth trajectories between 1920 and 1940. Second, we demonstrate that Chinese and Japanese Americans usually did not colocate in the same enumeration districts and that Chinatowns and Japantowns were typically geographically distinct. Third, our results remain robust when we progressively restrict the sample to enumeration districts with minimal or no overlap between the two groups (by excluding Japantowns with a single Chinese resident and vice versa).

Our results suggest that the locations of Japantowns were persistent. Enumeration districts within the exclusion zone, with the notable exception of Terminal Island in Los Angeles, retained their approximate boundaries ten years later despite the complete evacuation of Japanese Americans during the war. While the geography of Japantowns was persistent,

[3]It is important to note that while many immigrants resided in ethnic enclaves, others did not. Postel (2022) shows that Chinese Americans were not concentrated solely in Chinatowns; many were spread throughout smaller towns. Likewise, a large number of Japanese Americans lived and worked in rural agricultural communities.

internment dramatically reduced the Japanese American population in these enclaves. The population of Japantowns inside the exclusion zone shrunk by 25 to 50% relative to their 1950 counterfactual. We find that African Americans largely replaced Japanese Americans in historic Japantowns in a nearly one-to-one fashion. Lastly, we show that new Japanese enclaves formed outside the exclusion zone in cities like Denver, Salt Lake City, and Spokane. While these new clusters accommodated a significant number of Japanese Americans, they did not approach the size and scope of the historic West Coast Japantowns.

Contributions to the literature

This paper contributes to several different literatures. First, our study adds to the literature on forced displacement. Existing work typically estimates the impacts of wars, either on the displaced group or the host community, with considerably less attention given to the sending communities (Becker, 2022; Verme and Schuettler, 2021; Ruiz and Vargas-Silva, 2013).[4] Displaced refugees often experience losses in wealth, employment, educational opportunities, and social networks, which may persist over the long run (Fiala, 2015; Bauer et al., 2013). At the same time, displacement may induce some households, particularly those from agricultural communities, to relocate to urban areas with more educational and labor market opportunities (Bauer et al., 2013; Chiovelli et al., 2021). The displaced may also shift preferences, with households preferring to invest in mobile assets such as human capital rather than physical capital (Becker et al., 2020). Even in such cases, the trauma associated with displacement events may heighten stress, impair mental health, and elevate the risk of cardiovascular disease (Bauer et al., 2019; Chiovelli et al., 2021; Zilic, 2018; Haukka et al., 2017). While there is some research on the effects of mass expulsions on the sending communities, that literature has primarily focused on geographies at the level of the city (Acemoglu et al., 2011; Grosfeld et al., 2013; Chaney and Hornbeck, 2016; Testa, 2021). We are unaware of any research that examines the effects of forced displacement at levels as granular as census

[4]The most commonly studied forced displacement events are World War II in the economic history literature and modern civil wars in the development economics literature, although there are exceptions. See Becker and Ferrara (2019) and Becker (2022) for surveys.

enumeration districts, which allow us to estimate the effects at the neighborhood level.

Second, our paper contributes to the literature on ethnic enclaves. Work in this area has primarily focused on selection into enclaves and the long-run effects of exposure to these communities on economic outcomes and assimilation.[5] On the one hand, enclaves may provide social and economic support that immigrants would have otherwise lacked. On the other, enclaves may isolate immigrants from natives and slow assimilation. For these reasons, the likely effects of enclaves on immigrant outcomes is not theoretically clear and likely context dependent, with some studies finding economic gains from living in enclaves and other finding gains from leaving them (Abramitzky et al., 2024; Damm, 2009; Eriksson, 2020; Xie and Gough, 2011). There are fewer studies of enclave formation and dissolution. Abramitzky et al. (2025) show that the foundings of ethnic Catholic Churches increase the probability that an enclave forms. Evidence on the factors shaping the long-run resilience of enclaves remains limited.

Third, we contribute to the literature on the persistence of cities subjected to large shocks. This literature has mostly focused on shocks related to natural disasters or wars. Notable recent examples include Takeda and Yamagishi's (2024) analysis of the recovery of Hiroshima and Redding and Sturm's (2024) work on WWII destruction in London. Work on the persistence and resilience of ethnic enclaves is fairly limited. Some recent studies have found long-run impacts of segregated enclaves on future land values, with such enclaves being defined by indigeneity (Baldomero-Quintana et al., 2025) or class (Yamagishi and Sato, 2025). A large strain of work has analyzed neighborhood shocks affecting African Americans in the U.S., particularly shocks we could view as permanent since they involve the physical remaking of neighborhoods. These include the construction of urban freeways, housing destruction due to urban renewal (Collins and Shester, 2013), the demolition of highrise public housing projects (Aliprantis and Hartley, 2015), and destruction due to riots (Brooks et al., 2024). Our study focuses instead on the impact of removing people from neighborhoods; how ethnic enclaves evolve after temporary mass displacement episodes remains an understudied topic.

[5]There is also a larger literature on the selection of and returns to migration more generally. See Abramitzky et al. (2012), Abramitzky et al. (2014), and Abramitzky et al. (2020).

Finally, we contribute to the economic history of Japanese American immigrants and WWII internment in particular. This literature has primarily studied the impacts on the incarcerated individuals, including long-term wages (Arellano-Bover, 2018; Chin, 2005), educational attainment (Saavedra, 2015; Caudill and Mixon Jr, 2012), political engagement (Komisarchik et al., 2022), assimilation (Saavedra, 2021), and economic and geographic mobility (Shoag and Carollo, 2016; Chan, 2023). This work demonstrates that internment affected the geographic distribution of internees. For example, Chan (2023) shows that Japanese Canadians (who were subjected to a similar internment policy) shifted eastward relative to Chinese Canadians after the war. Similarly, Shoag and Carollo (2016) find that internees were more likely to reside in cities near their incarceration sites, and Arellano-Bover (2018) estimates that internment increased 1960 wages, with a possible mechanism being migration toward cities with better job opportunities. However, although internment clearly influenced individual locations, its effect on Japantowns themselves remains unknown. For instance, internment camps could influence where any particular internee resettled without necessarily changing the Japanese population of any particular enclave. Likewise, a general eastward migration of Japanese Americans could occur while Japantowns remain predominantly Japanese. It is even less clear if internment affected Japantowns outside of the exclusion zone, as newly released internees may have located in nearby Japantowns or elsewhere. Lastly, we are unaware of any quantitative evidence of which ethnic or racial groups replaced Japanese Americans in the evacuated Japantowns. Historians and journalists have noted the multiethnic evolution of particular Japantowns (see, e.g., Kurashige (2007) on Los Angeles and Hartlaub et al. (2024) on San Francisco), but it is unclear if this was a direct product of internment or a more general phenomenon affecting many minority neighborhoods during the Great Migration.

2 Background

Japanese Americans began arriving in the United States in the late 19th century, first settling in Hawaii and later on the West Coast of the mainland. While many lived in rural areas

and worked in agriculture, others resided in Japanese enclaves known as Little Tokyos or Japantowns. Most Japantowns were located on the West Coast, in cities like Los Angeles, San Francisco, and Seattle, which had Japanese American populations of 23,331, 6,986, and 5,312, respectively. The most notable non–West Coast Japantown was in New York, which had a Japanese population of 1,665.[6]

Anti-Asian sentiment was widespread in the American West well before Pearl Harbor. The first major wave of Asian immigrants were predominantly from China, arriving during the California Gold Rush. They were immediately greeted with hostility. In 1853, a Chinese man named Ling Sing was murdered by a White man in front of several Chinese witnesses. The killer's conviction was later voided by the California Supreme Court, who declared that those of Chinese descent were ineligible to testify against a White person. In 1890, San Francisco passed the Bingham Ordinance, which banned Chinese Americans from living or working in the city outside of a small undesirable area mostly occupied by slaughterhouses. The goal was to eliminate the city's well-established Chinatown; the Board of Health had declared the neighborhood a "Chinese cancer" which "must be cut out of the heart of our city" (Trauner, 1978; Shah, 2001).[7]

After the Chinese Exclusion Act in 1882, more Japanese, Korean, and Filipino immigrants began to arrive. They faced a similar reaction. In 1905, the Japanese and Korean Exclusion League was formed with the goal of restricting immigration and access to employment for these groups; the group later changed their name to the more expansive Asiatic Exclusion League (Daniels, 1988, pg. 118). In 1906, the San Francisco School Board ordered Japanese students to attend Chinese schools, to ensure that White children in public schools would not associate "with pupils of the Mongolian race" (Daniels, 1988, pg. 120). In 1913, California prohibited Japanese immigrant farmers from owning land (Daniels, 1988, pg. 139). Prior to World War II, the discrimination faced by Japanese Americans was broadly similar to that faced by other Asian American groups. On that point, Higham (2002, pg. 25) writes that

[6]No other cities outside of the West Coast had more than 400 Japanese residents in 1940.

[7]This effort was unsuccessful, as the ordinance was struck down by the Circuit Court of the United States for the Northern District of California (McClain, 1990).

"Americans have never maintained that every European [immigrant] endangers American civilization...But opponents of Oriental folk have tended to reject them one and all." Likewise, Daniels (2004, pg. 4) says that "to most Americans in the late nineteenth and early twentieth century, all Asian immigrants seemed alike and alike seemed to present a threat to the American standard of living and the racial integrity of the nation."

On December 7, 1941, the Empire of Japan launched a surprise attack on the United States Naval Base at Pearl Harbor. Nearly 3,000 Americans were killed, most of whom were U.S. sailors. In the days that followed, the United States declared war on Japan, Germany, and Italy. The FBI arrested hundreds of Japanese American community leaders. American newspapers began openly encouraging discrimination against Japanese Americans, the use of anti-Japanese slurs became widespread, and vendors sold "Japanese Hunting License" cards (which carried no legal authority). Several documented cases of violence against Japanese Americans occurred in the following weeks.

In February 1942, President Roosevelt signed Executive Order 9066, which granted the War Department authority to designate any area of the United States as a military zone and to exclude individuals from those zones. The order did not specify any particular region or target any specific group. In March 1942, General John DeWitt declared the West Coast – including most of California, Oregon, Washington, and Arizona – as Military Zones 1 and 2, from which Japanese Americans were required to report for evacuation to "relocation centers." Japanese Hawaiians were not incarcerated in internment camps. They accounted for roughly one-third of the population of Hawaii, and it was believed that incarcerating them would lead to severe labor shortages. Japanese Americans living east of the exclusion zone were also not subject to incarceration, although some voluntarily entered the camps to accompany family members. Those who remained outside the camps often lived under heightened scrutiny and faced restrictions such as curfews.

Evacuees were permitted to bring only what they could carry and were required to make arrangements for their remaining belongings on short notice, often within just a few days. As a result, many were forced to sell their property at fire-sale prices or abandon it altogether.

The federal government established the War Relocation Authority (WRA) to detain and manage the forced relocation of Japanese Americans. Ultimately, over 120,000 Japanese Americans were held in WRA custody during the war.

By the summer of 1942, all individuals of Japanese ancestry had been evacuated from Japantowns in West Coast cities. Internees were initially brought to "assembly centers," which were repurposed racetracks and fairgrounds used to temporarily house them while more permanent "relocation centers," or internment camps, were under construction. The assembly centers were never intended to house people. During the summer and fall of 1942, most internees were transferred from the assembly centers to relocation centers. There were ten relocation centers spread across eight states, including: Topaz (Utah), Poston (Arizona), Gila River (Arizona), Granada (Colorado), Heart Mountain (Wyoming), Jerome (Arkansas), Manzanar (California), Rohwer (Arkansas), Minidoka (Idaho), and Tule Lake (California). These centers were located in remote areas of the United States and operated as isolated communities. Each camp had a hospital and a school, although resources were often scarce. Japanese Americans worked in the camps but were paid below market wages. The camps were enclosed by barbed wire and guarded by armed personnel.

The camps became overcrowded almost immediately. The War Relocation Authority permitted a limited number of "low-risk" internees to leave, such as college students who had been admitted to institutions outside the exclusion zone. A limited work-release program was also established. To assess the level of risk posed by internees, the WRA issued the "loyalty questionnaire" in 1943. The questionnaire asked whether internees would forswear allegiance to the Emperor of Japan and whether they were willing to serve on combat duty in the United States military. Military-aged males who answered affirmatively to both questions were typically assigned to the 442nd Regimental Combat Team, a segregated, all-Japanese American unit in the U.S. Army. Those who answered negatively were sent to the Tule Lake relocation center, which was converted into a maximum-security camp.

In December 1944, the Supreme Court ruled that while internment was a permissible exercise of the President's wartime powers, the WRA could not continue to detain "admittedly

loyal" Japanese Americans. That same month, the exclusion order on the West Coast was lifted, marking the beginning of the end of internment. Most internees left the camps over the following months, although the last camp did not close until 1946.

After internment, Japanese Americans faced the decision of where to resettle. Some returned to the West Coast, to their former homes or neighborhoods. Many moved to large cities without established Japanese enclaves, such as Chicago or Spokane.[8] Others settled in communities near their former incarceration sites. A small number relocated to Japan. The WRA encouraged Japanese Americans to assimilate and avoid forming enclaves after the war. Historical accounts suggest that Japanese enclaves did re-establish themselves to some extent. However, during the war, other minority groups – often Black and Latino – had moved into neighborhoods previously known as Little Tokyos and Japantowns (Daniels, 1988; Kurashige, 2007; Hirahara and Knatz, 2015). Internees received limited compensation for property lost during the evacuation process. However, most estimates suggest they were paid as little as ten cents on the dollar. The U.S. government did not issue an official apology for internment until 1988, after which each surviving internee received $20,000 in reparations.

3 Data

To understand changes in the settlement patterns of Japanese Americans, we construct constant-boundary neighborhood maps for all of the cities in our sample. Our primary data source is the 1940 and 1950 full-count census microdata from IPUMS (Ruggles et al., 2024). We merge these data with digitized enumeration district (ED) maps for fourteen cities.[9] The locations of these cities, along with internment camps, can be seen in Appendix Figure A.1. Nine of these cities are within the exclusion zone, and seven are in California: San Francisco, Los Angeles, San Jose, Oakland, Stockton, Berkeley, and Sacramento. Portland, OR, and

[8] Chicago and Spokane respectively had 234 and 221 Japanese American residents in 1940.

[9] The 1940 enumeration district maps for Brooklyn, Chicago, Los Angeles, Manhattan, Oakland, San Francisco, and Seattle were drawn from the Urban Transition Historical GIS Project (Logan and Zhang, 2018). The remaining 1940 maps and all of the 1950 maps were newly digitized for this project. For New York City, only Brooklyn and Manhattan are included; these boroughs accounted for the majority of the city's population and 92% of its Japanese American population in 1950.

Seattle, WA, are also in the exclusion zone. Outside the exclusion zone, we include data from five cities: Spokane, WA; Salt Lake City, UT; Denver, CO; New York, NY; and Chicago, IL.

Our sample includes the nine mainland U.S. cities with the largest Japanese populations in 1940. Focusing on the 67 West Coast cities identified in the census, we capture all eight with at least 1,000 Japanese residents, and 90% of city enumeration districts where Japanese Americans made up at least 10% of the population.[10] The cities in our sample that fall outside of the exclusion zone were chosen because they received the largest influxes of internees after the war; our sample includes the eleven largest Japanese American populations circa 1950, including every city in the continental U.S. with more than 700 Japanese American residents. Table 1 shows how the Japanese American population changed in our sample cities between 1940 and 1950. For cities within the EZ, the change in the Japanese American population ranged from -17% to -71%. Outside the EZ, gains ranged from 5% to 2,376%.

Table 1: Japanese American population in sample cities

	1940	1950	Change
		Inside EZ	
Berkeley, CA	1,312	842	-36%
Los Angeles, CA	23,331	11,736	-50%
Oakland, CA	1,800	528	-71%
Portland, OR	1,701	1,324	-22%
Sacramento, CA	2,957	1,211	-59%
San Francisco, CA	5,312	2,530	-52%
San Jose, CA	434	352	-19%
Seattle, WA	6,986	5,811	-17%
Stockton, CA	1,260	396	-69%
		Outside EZ	
Chicago, IL	378	9,361	2,376%
Denver, CO	321	2,500	679%
New York, NY	2,032	2,132	5%
Salt Lake City, UT	359	1,690	371%
Spokane, WA	275	1,003	265%

Notes: Table depicts the Japanese American population in each of our sample cities in 1940 and 1950, as well as the percentage change over that decade. New York, NY includes only Manhattan and Brooklyn, capturing 92% of the city's Japanese American population in 1950.

[10]This includes 88% (83%) of EDs with at least 100 (50) Japanese American residents.

Table 2 presents summary statistics for exclusion zone EDs from the perspective of each group represented in our data. The unit of observation is a 1940 enumeration district; each column contains the average values of the row variables weighted by the ED population of the relevant group. To ensure geographic consistency, we map 1950 enumeration districts to their 1940 counterparts. When district boundaries change between census years, we fractionally assign individuals from 1950 to 1940 districts based on the proportion of overlapping land area.[11]

Table 2: Summary statistics: Group weighted average characteristics for enumeration districts in the exclusion zone

	Japanese American	Chinese American	Other Asian American	Black	White
	1940 characteristics				
Dist. to CBD (miles)	3.64	0.92	2.64	2.99	3.92
Med. HH income	26.99	25.29	26.28	23.61	30.38
% renters	0.77	0.90	0.84	0.68	0.60
% high school or higher	0.28	0.20	0.27	0.24	0.37
Population	1,272	1,465	1,368	1,193	1,299
Density	7,772	33,601	10,403	6,308	6,391
% Japanese American	0.22	0.04	0.08	0.04	0.01
% Chinese American	0.03	0.48	0.05	0.01	0.00
% Other Asian American	0.02	0.02	0.07	0.01	0.00
% Black	0.07	0.03	0.05	0.51	0.01
% White	0.66	0.43	0.75	0.43	0.97
	1950 characteristics				
Population	1,475	1,346	1,463	1,488	1,672
Density	8,079	27,564	10,465	7,505	6,636
% Japanese American	0.06	0.02	0.03	0.01	0.01
% Chinese American	0.02	0.35	0.04	0.01	0.01
% Other Asian American	0.01	0.01	0.01	0.00	0.00
% Black	0.24	0.10	0.18	0.72	0.05
% White	0.66	0.53	0.75	0.26	0.94
N	3,146	3,146	3,146	3,146	3,146

Notes: Each column reflects the average value of each row characteristic across exclusion zone EDs, weighted by the population of the relevant group (denoted by column). Median household income based on 1950 LIDO score. Density is persons per square kilometer.

[11] Appendix Figure A.2 shows how ED boundaries shifted between 1940 and 1950 for the cluster of EDs around Seattle's historic Japantown. ED boundaries were often very similar from year to year, with earlier EDs simply subdivided in the next decade to account for population growth. This helps limit the degree of measurement error induced by the areal interpolation needed to obtain constant-boundary units of observation.

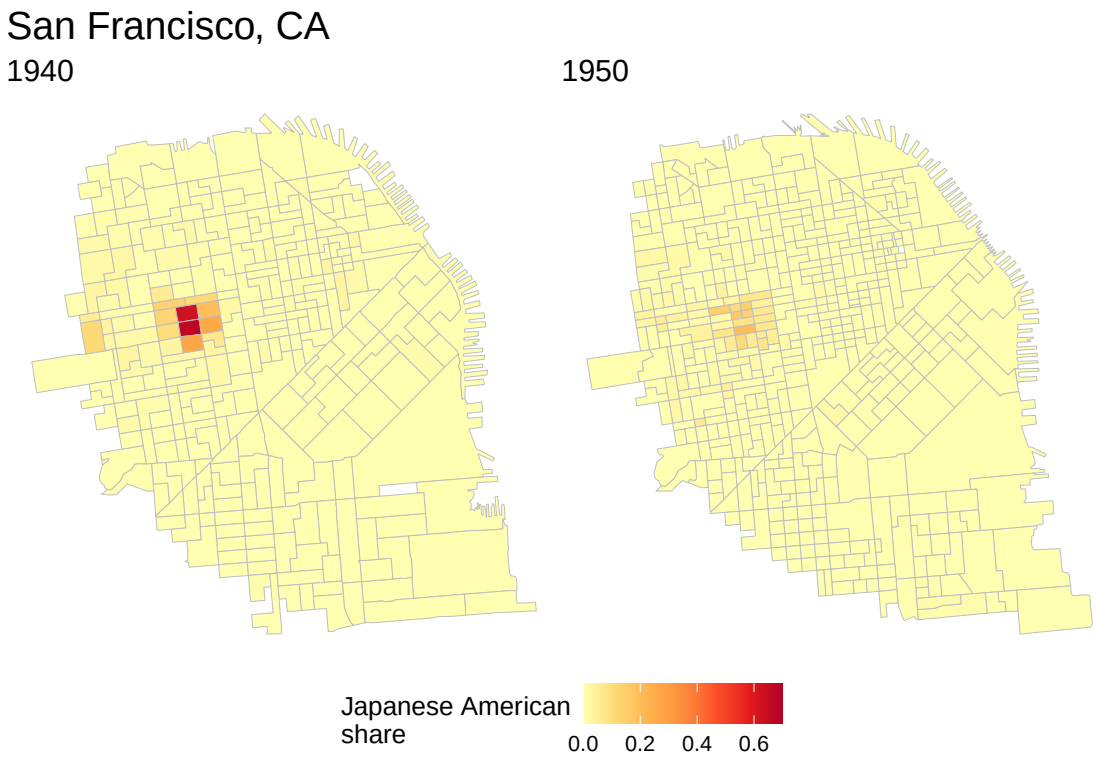
Our final sample includes 11,182 enumeration districts, 28% of which lie within the exclusion zone. Whites constitute the largest group, followed by African Americans. Japanese Americans slightly outnumber Chinese Americans, although the difference is small. Other Asian Americans represent the smallest group. Black Americans were the most segregated minority group, with the average individual living among 51% own-race neighbors in 1940, followed closely by Chinese Americans at 48%. The typical Japanese American lived in a neighborhood that was 22% Japanese, 5% Chinese/Other Asian American, and 7% Black. By 1950, the Japanese share had fallen to 6%, while the Black share rose to 24%, almost perfectly offsetting this decline; the White/Chinese/Other Asian American population shares remained roughly the same. Japanese EDs were lower income[12] and had more renters and fewer high school graduates than the EDs typically experienced by Whites. Japanese neighborhoods were comparable to Chinese/Other Asian neighborhoods in terms of income, but had a slightly lower renter share and somewhat higher average level of education. Japanese neighborhoods tended to be somewhat more dense than Black or White neighborhoods, but much less dense (and farther from downtown) than Chinese/Other Asian neighborhoods. There was considerable variation in the total Japanese population across enumeration districts. Although the average district had only 4.2 Japanese Americans in 1940, the maximum was 1,574, approximately one standard deviation above the average total population of 1940 enumeration districts.

4 Empirical Illustration: San Francisco and Los Angeles

We illustrate our data and core argument using the cases of San Francisco and Los Angeles. Figure 1 maps the Japanese American population in San Francisco by enumeration district in 1940 and 1950. In 1940, two enumeration districts had majority Japanese populations, and neighboring districts also exhibited above-average Japanese populations. By 1950, however, the Japanese population in these districts had declined significantly. While the historic

[12]Estimated incomes are based on LIDO scores, a proxy for historical income; see Saavedra and Twinam (2020).

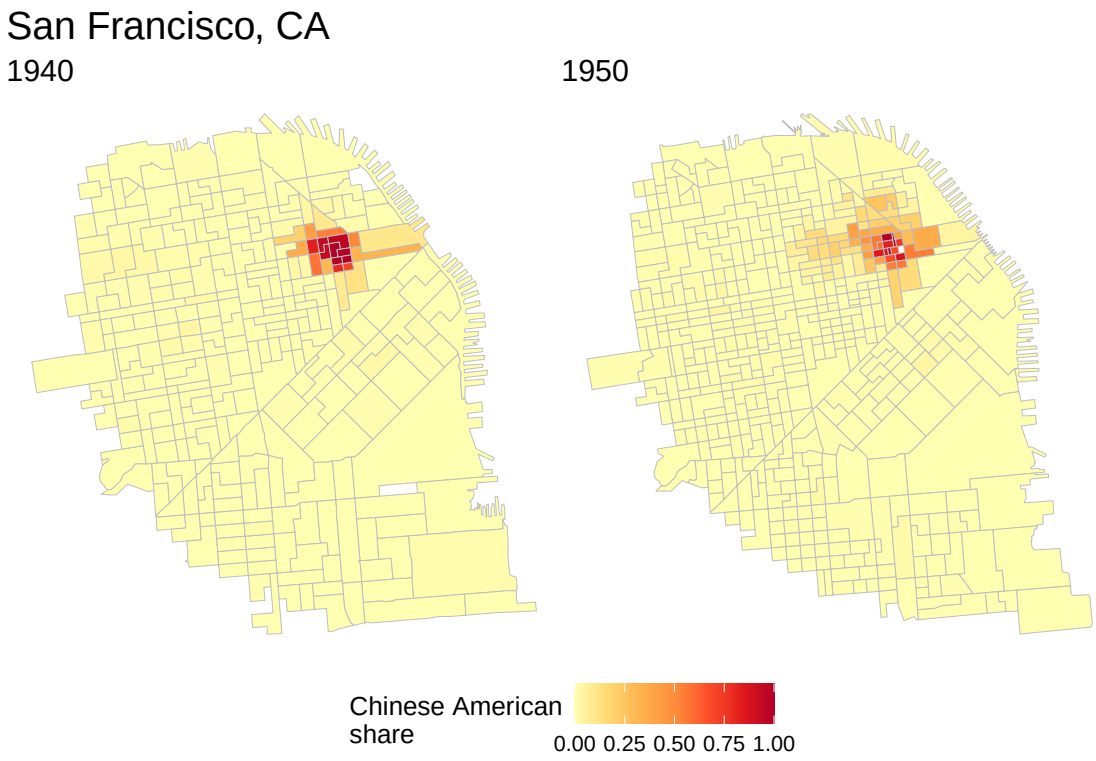
Figure 1: Map of the Japanese American share in San Francisco



Japantown continued to have an above-average Japanese population, Japanese Americans were now a minority in that area.

Even in the absence of mass evacuation, Japantown's population may have declined. Immigrant groups often assimilate over time, moving away from their ports of entry and out of ethnic enclaves. To measure such secular trends, we examine Chinatowns as a comparison. Figure 2 maps the Chinese population in San Francisco in 1940 and 1950. As expected, we observe a secular decline, though it is considerably smaller than the decline observed in Japantown. Moreover, the two neighborhoods are physically separated by enumeration districts with low Chinese and Japanese American populations. This physical separation suggests that Chinatown in San Francisco was likely unaffected by the exodus from Japantown and thus serves as a suitable control for quantifying the secular decline that would have occurred absent internment. Comparing the magnitudes of the population declines in Japantown and

Figure 2: Map of the Chinese American share in San Francisco

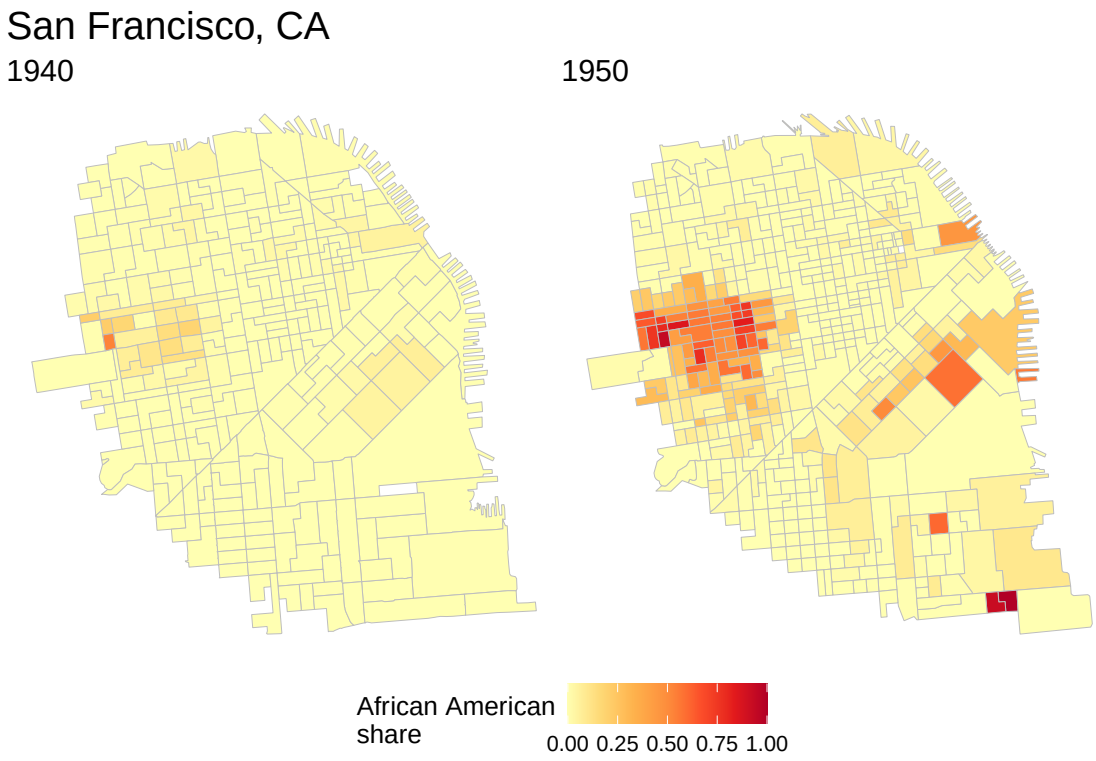


Chinatown suggests that internment explains most, but not all, of the Japanese population decline observed by 1950.

If Japanese Americans left Little Tokyo because of internment, who filled those vacancies? In most cases, Black households migrating westward from the South filled the void. Figure 3 maps African American population shares in San Francisco in 1940 and 1950. In 1940, small pockets of African Americans lived near Japantown, and African Americans constituted a minority group within Japantown itself.

During the 1940s, the character of the Great Migration changed, with many more African Americans moving to the West Coast to take advantage of employment opportunities associated with wartime production and labor shortages. The government did not provide sufficient housing for all of these workers, and in many cases the housing that was built discriminated against African Americans (Rothstein, 2017). This led many to settle in whatever

Figure 3: Map of the Black share in San Francisco



neighborhoods provided the least resistance, resulting in previously non-Black neighborhoods experiencing significant racial transition.[13] The greatest increase in African American population share in San Francisco was concentrated around its historic Japantown.

As similar story played out in Los Angeles, which had two large and distinct Japanese American communities. The first, Little Tokyo, was adjacent to downtown. In 1940, the four EDs surrounding this area had over 1,400 Japanese residents and only 20 Black residents. These are highlighted in Appendix Figure A.3. By 1950, the Japanese American population fell to 584, while the African American population rose to 2,423; this was the result of a northward expansion of an existing Black neighborhood between 1940 and 1950, as can be seen in Appendix Figure A.4. Black business owners and community leaders began to refer

[13]This kind of racial transition occurred in many neighborhoods; however, Japanese American enclaves were disproportionately likely to experience this phenomenon. Appendix Table B.2 shows that 44% of Japanese American enclaves experienced significant African American in-migration; that number is 9% for all of the EDs in our sample, 8% for all EDs in the exclusion zone, and 13% for Chinese American enclaves.

to this neighborhood as Bronzeville (Kurashige, 2007). As is visible in Appendix Figure A.5, this northward expansion stopped just short of the existing Chinatown enclave adjacent to Japantown.

The second major Japanese enclave in Los Angeles was a fishing community on Terminal Island, which can be seen in Appendix Figure A.6. The core ED of this settlement had 1,547 Japanese American residents in 1940, accounting for 96% of its population. The entire Japanese American population of the island was forceably displaced by the U.S. Navy shortly after EO 9066 was issued, leaving the island a "ghost town" (Hirahara and Knatz, 2015, pg. 267). As their homes and businesses had been bulldozed in the interim, no Japanese Americans had returned to Terminal Island by 1950. Black and Latino workers moved in to occupy the vacated cannery jobs still available (Hirahara and Knatz (2015, pg. 270) and Appendix Figure A.7).

5 Identification

The empirical approach outlined heuristically in the previous section relies on comparing Japanese and Chinese enclaves over time. This section formalizes the assumptions required for this approach to identify a causal impact of WWII incarceration on Japanese neighborhoods. Let P_{itr} denote the observed population of race $r \in \{J, C\}$ (Japanese and Chinese American) in enumeration district i and census year $t \in \{1940, 1950\}$. Define the potential population $P^1_{i,1950,r}$ as the 1950 population of race r in enumeration district i under the enacted internment policy. Thus, $P^1_{i,1950,r} = P_{i,1950,r}$ for all i, including those outside the West Coast. In contrast, define $P^0_{i,1950,r}$ as the potential population in the absence of any incarceration policy, whether on the West Coast or elsewhere.

Our identification strategy hinges on three assumptions, which we detail below.

Assumption 5.1 *Japanese American internment did not affect the Chinese population in any enumeration district:* $P^1_{i,1950,C} = P^0_{i,1950,C} = P_{i,1950,C}$.

Assumption 5.1 may initially appear prohibitively strong. If Japanese and Chinese Amer-

icans tended to live in the same neighborhoods, internment could have created vacancies in Chinatowns as well. If African Americans filled these vacancies, Chinese residents may have migrated in a process analogous to "White flight," a phenomenon that might not have occurred absent internment. Similarly, internment could have influenced Chinese migration by opening new job opportunities for non-Japanese Asians.

We address this concern in two ways. First, we estimate specifications restricting the analysis to enumeration districts with limited (or no) overlap between Chinese and Japanese populations. A Chinese enclave without Japanese residents is less likely to have been affected by internment, thus providing a credible comparison for what would have occurred in Japantowns absent internment.

Second, we demonstrate that Japanese and Chinese Americans co-located within the same enumeration districts less frequently than Japanese Americans and other potential control groups, such as other Asian Americans. Appendix Figure B.1 presents a correlation matrix of 1940 enumeration district populations by race. The correlation between Chinese and Japanese Americans in 1940 is 0.067, approximately one-fifth of the correlation between Japanese Americans and other Asian Americans (0.318), and less than one-sixth of the magnitude of the negative correlation between White and Black populations (–0.444). Given that Chinese and Japanese Americans were frequently confused with one another by the White population yet exhibited minimal correlation in enclave locations, Chinese Americans serve as an effective comparison group.[14]

Our second assumption states that, in the absence of internment, the Japanese population would have evolved similarly to the Chinese population. Some preliminary evidence for this assumption can be observed in Appendix Figure A.9, which plots pre-war trends in the isolation index for Japanese and Chinese Americans in Los Angeles, San Francisco, and Seattle, the three largest urban centers for these groups following the border closing in 1920. These groups faced similar levels of isolation over this time period, and both levels were

[14]Beyond their higher correlation in enclave location, other Asian groups may also be unsuitable as controls because Filipino Americans often competed directly with Japanese Americans for employment, and thus may have been affected by Japanese internment.

trending upward in a similar fashion. Further evidence is described in Appendix C. The assumption is formally stated as:

Assumption 5.2 *In the absence of internment, the 1950 population of race r would have been a linear function of its 1940 population. The functional form may vary by geography (exclusion zone versus non-exclusion zone), but not by race.*

$$\mathbb{E}\left[P^0_{i,1950,r} \mid r, EZ, P_{i,1940,r} = p_{1940}\right] = \gamma_0^{EZ} + \gamma_1^{EZ} p_{1940}$$

Assumption 5.2 models the 1950 population of Chinese Americans in each enumeration district as a linear function of the 1940 Chinese population. The intercept term represents the expected number of Chinese Americans in 1950 in a district with zero Chinese residents in 1940 and is likely to be close to zero, given the relatively small size of the Chinese American population by 1950. When the intercept is zero, the relationship simplifies to an autoregressive process. The population gradient is allowed to vary by whether an enumeration district is inside or outside the exclusion zone, reflecting the possibility that immigrants assimilated during this period and migrated eastward from their (or their parents' or grandparents') ports of entry. Accordingly, Chinatowns on the West Coast could have lost population ($\gamma_1^1 < 1$), while those outside the exclusion zone may have gained population ($\gamma_1^0 > 1$). Because this assumption restricts gradients to be race-invariant, it enables estimation of the counterfactual Japanese American population in the absence of internment.

Our final assumption is:

Assumption 5.3 *The 1950 population of Japanese Americans in an enumeration district is a linear function of its 1940 population.*

$$\mathbb{E}\left[P^1_{i,1950,J} \mid EZ, P_{i,1940,J} = p_{1940}\right] = \delta_0^{EZ} + \delta_1^{EZ} p_{1940}$$

The linearity restrictions in Assumptions 5.2 and 5.3 can be generalized to more flexible functional forms. However, linearity fits the data well and yields a simple estimator of the

effect of Japanese American internment on the Japanese population in ethnic enclaves.

Theorem 5.1 *Under Assumptions 5.2 and 5.3, the local average treatment effect for enumeration districts with a 1940 Japanese population of p_{1940} and geography $EZ \in \{0, 1\}$ is a linear function of p_{1940}, with coefficients that depend on whether the district is in the exclusion zone:*

$$LATE(p_{1940}) = \delta_0^{EZ} - \gamma_0^{EZ} + \left(\delta_1^{EZ} - \gamma_1^{EZ}\right) p_{1940}.$$

Proof Omitting the EZ superscripts for ease of notation, we get that:

$$\begin{aligned}
LATE(p_{1940}) &= \mathbb{E}\left[P^1_{i,1950,J} - P^0_{i,1950,J} \mid P_{i,1940,J} = p_{1940}\right] \\
&= \delta_0 + \delta_1 p_{1940} - \mathbb{E}\left[P^0_{i,1950,J} \mid P^0_{i,1940,J} = p_{1940}\right] && \text{(by Assumption 5.3)} \\
&= \delta_0 + \delta_1 p_{1940} - \gamma_0 - \gamma_1 p_{1940} && \text{(by Assumption 5.2)} \\
&= (\delta_0 - \gamma_0) + (\delta_1 - \gamma_1) p_{1940}
\end{aligned}$$

The regression coefficients $\boldsymbol{\delta}$ can be estimated by regressing the 1950 Japanese American population on the 1940 population separately by geography. Given Assumptions 5.1 and 5.2, the coefficients $\boldsymbol{\gamma}$ can be similarly estimated using the Chinese American population. Hence, the local average treatment effect is identified for any value of p_{1940}.

In practice, we estimate the following regression separately by race:

$$P_{i,1950,r} = \beta_0 + \beta_1 \mathbb{1}\left[i \in EZ\right] + \beta_2 P_{i,1940,r} + \beta_3 \mathbb{1}\left[i \in EZ\right] \times P_{i,1940,r} + \Lambda^T X_i + \epsilon_{i,1940,r}, \quad (1)$$

where β_0 and $\beta_0+\beta_1$ are the intercept terms outside and inside the exclusion zone, respectively, and β_2 and $\beta_2 + \beta_3$ are the corresponding slope coefficients. The row vector X_i includes additional controls, and $\epsilon_{i,1940,r}$ is the error term. Estimating this specification for Japanese Americans yields the $\boldsymbol{\delta}$ vector, while estimating it for Chinese Americans yields the $\boldsymbol{\gamma}$ vector. We also estimate a pooled specification that includes both groups and directly identifies the differences across them.

After obtaining the estimated analogs of $\boldsymbol{\delta}$ and $\boldsymbol{\gamma}$, there are several ways to summarize

the local average treatment effects. For example, plugging in $\bar{P}_{1940,J}$ yields the treatment effect for an enumeration district with the average 1940 Japanese American population. Alternatively, we could compute a weighted sample mean, weighting each enumeration district by its 1940 Japanese population. This approach provides a more representative summary of the treatment effect in districts where Japanese Americans actually resided.

Instead, our baseline estimates omit the intercept term and focus on the difference $\delta_1^{EZ} - \gamma_1^{EZ}$, which captures how many Japanese Americans each enumeration district gained (if the difference exceeds one) or lost (if the difference is less than one) per Japanese American residing in that district in 1940. This approach ignores the intercept's contribution to the treatment effect but remains informative, as both Chinese and Japanese Americans were small minorities, and enumeration districts without any Asian Americans in 1940 generally had few (or none) in 1950. In the Appendix, we show that accounting for the intercept does not meaningfully alter the estimates for enumeration districts that were Japanese enclaves in 1940.

To see how our model relates relates to a simple 2×2 difference-in-differences estimator, notice that under our assumptions

$$\begin{aligned}
\tau_{DD} &= \mathbb{E}\left[P_{i,1950,J}\right] - \mathbb{E}\left[P_{i,1940,J}\right] - \left(\mathbb{E}\left[P_{i,1950,C}\right] - \mathbb{E}\left[P_{i,1940,C}\right]\right) \\
&= \beta_0 + \beta_1 \mathbb{E}\left[P_{i,1940,J}\right] - \mathbb{E}\left[P_{i,1940,J}\right] - \left(\gamma_0 + \gamma_1 \mathbb{E}\left[P_{i,1940,C}\right] - \mathbb{E}\left[P_{i,1940,C}\right]\right) \\
&= (\beta_0 - \gamma_0) + (\beta_1 - 1)\,\mathbb{E}\left[P_{i,J,1940}\right] - (\gamma_1 - 1)\,\mathbb{E}\left[P_{i,1940,C}\right]
\end{aligned}$$

The above equation on its own would be difficult to interpret, except for the case in which the Japantown and Chinatown were of the same size in expectation. In this case, $\mathbb{E}\left[P_{1940,J}\right] = \mathbb{E}\left[P_{1940,C}\right] = p_{1940}$, and the treatment effect simplifies to our local average treatment effect.

As a robustness check, we also estimate the model with additional controls, including city fixed effects, distance to the central business district, median LIDO score, percent foreign-born, percent recent immigrant, and percent with a high school education, as well as popula-

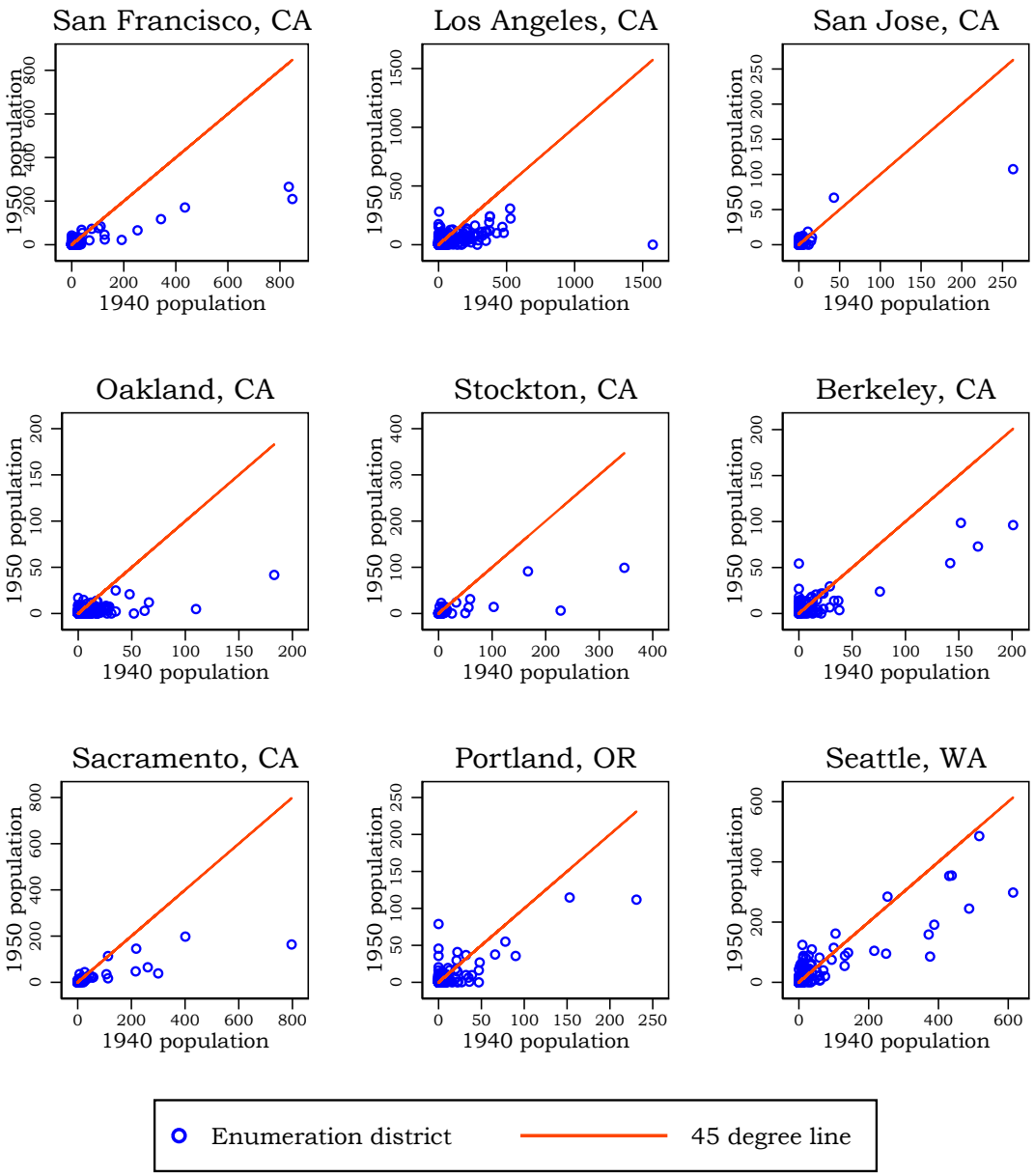
tion gradients for White and Black residents inside and outside the exclusion zone. Standard errors are clustered at the enumeration district level.

6 Main Results

The evolution of the urban Japanese American population between 1940 and 1950 is shown in Figures 4 and 5, which plot data for Japanese Americans separately by city. Each blue dot represents an enumeration district. The x-axis shows the 1940 population for a racial group, and the y-axis shows the 1950 population for that group. The solid line is a 45-degree line; dots along this line represent districts with no change in population. Every enumeration district in the exclusion zone with a sizable Japanese population experienced a decline in Japanese residents (Figure 4). Outside the exclusion zone, many dots lie above the 45-degree line, indicating substantial population growth. All cities exhibit the emergence of new enclaves, some of which had zero or only one Japanese household in 1940. Appendix Figures A.10 and A.11 present the same data in terms of population shares rather than counts and yield qualitatively similar findings.

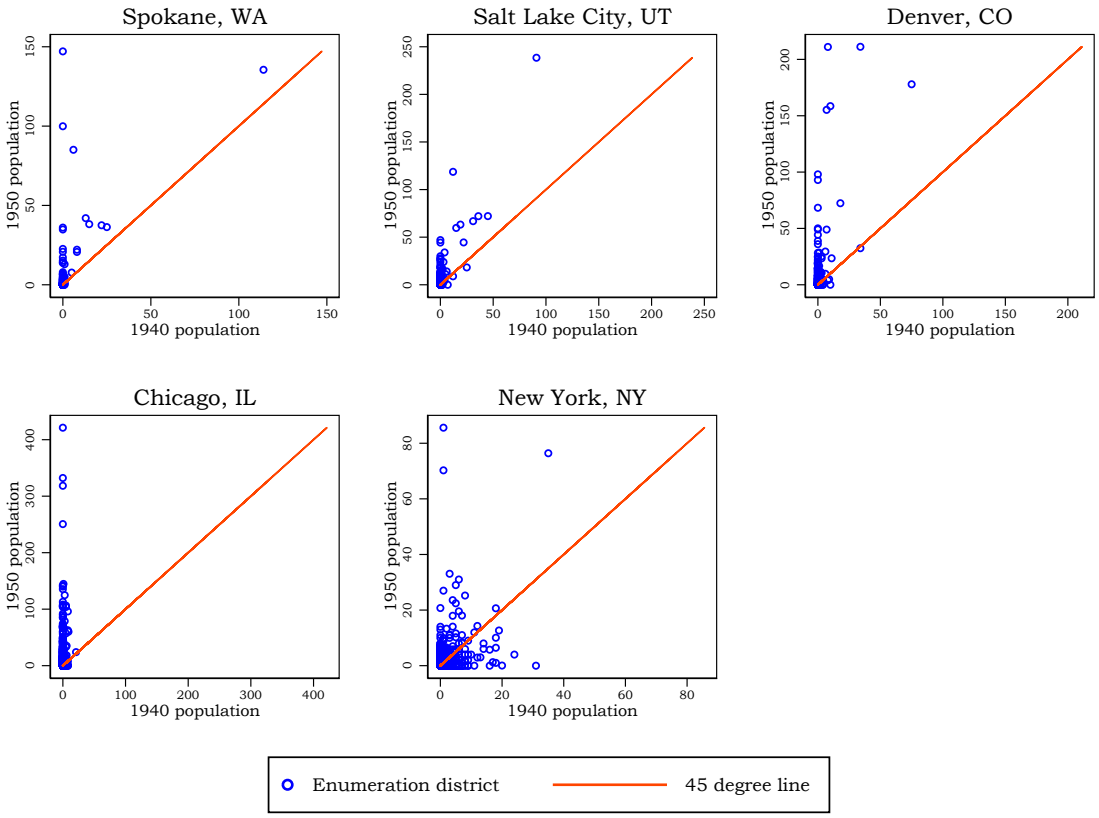
The main results and underlying intuition are presented in Figure 6. This figure pools cities inside and outside the exclusion zone and overlays red dots representing 200-quantile bins. The red dots appear roughly linear, suggesting that the 1950 population is a linear function of the 1940 population, though the slope varies considerably by geography. The top-left panel shows the Japanese population in enumeration districts within the exclusion zone, where the red dots fall below the 45-degree line, indicating substantial population loss. In contrast, outside the exclusion zone (top-right panel), the red dots lie above the 45-degree line, indicating population growth. Chinese Americans also experienced modest population loss within the exclusion zone and population gains outside it, though these changes are less pronounced. Appendix Figure A.12 presents the analogous graph for the White and Black populations. Both groups experienced growth in the exclusion zone during the 1940s, consistent with westward migration among the non-Asian American population during this period.

Figure 4: The Japanese American population in exclusion zone cities



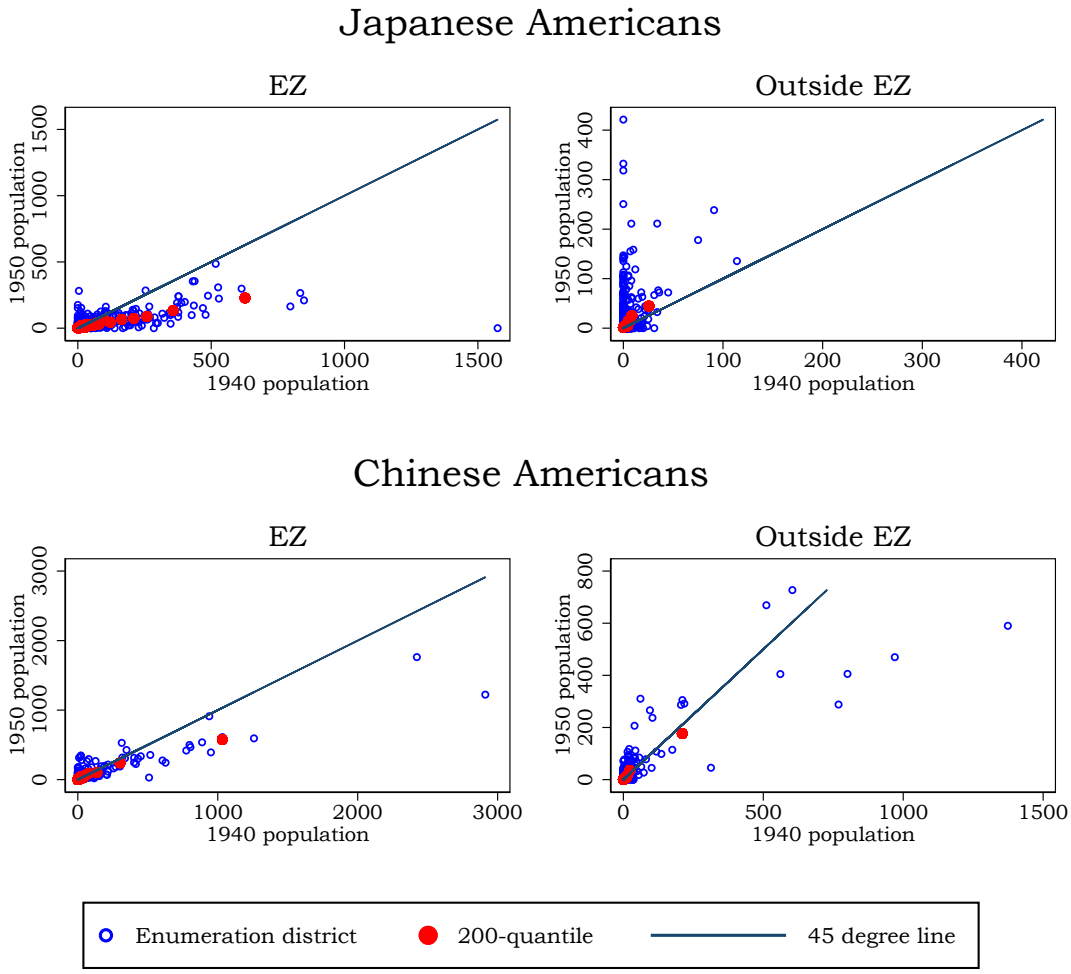
Notes: Each observation is a 1940 enumeration district. Population counts in 1950 are assigned by using consistent boundaries and assigns residents proportional to area when a 1950 ED overlaps with two or more 1940 EDs. Population counts come from the full count censuses from IPUMs.

Figure 5: The Japanese American population in cities outside the exclusion zone



Notes: Each observation is a 1940 enumeration district. Population counts in 1950 are assigned by using consistent boundaries and assigns residents proportional to area when a 1950 ED overlaps with two or more 1940 EDs. Population counts come from the full count censuses from IPUMs.

Figure 6: Binned population counts by race and exclusion zone status



Notes: Each observation is a 1940 enumeration district. Population counts in 1950 are assigned by using consistent boundaries and assigns residents proportional to area when a 1950 ED overlaps with two 1940 EDs. Population counts come from the full count censuses from IPUMs.

Table 3 presents the main results. Even-numbered columns include additional enumeration district-level controls, and columns (3) and (4) add controls for population gradients of other racial groups. Panel A reports how the Japanese population evolved both inside and outside the exclusion zone. The results indicate that, outside the exclusion zone, there were approximately 1.8 Japanese Americans in 1950 for every Japanese person in a district in 1940 – an increase of 0.8 individuals. Within the exclusion zone, the effect decreases by 1.5 people. These estimates allow for both an internment effect and a broader eastward movement of Japanese Americans away from their ports of entry, which likely would have occurred even absent internment.[15]

To isolate the effect of internment, we estimate the same relationship for Chinese Americans. For every Chinese American in an enumeration district outside the exclusion zone in 1940, there were approximately 0.6 Chinese Americans in 1950. Within the exclusion zone, the relationship is essentially the same.

To estimate the treatment effect, we take the difference between the Japanese and Chinese coefficients. These results are presented in Panel C. Outside the exclusion zone, there were 1.2 additional Japanese Americans in 1950 for every Japanese American in 1940. Within the exclusion zone, there were 0.25 fewer Japanese Americans per 1940 resident. Under the assumption that Japanese migration patterns would have mirrored those of Chinese Americans in the absence of internment, these estimates represent the causal effect of internment.

A natural concern is whether Chinese Americans were truly unaffected by the internment process. This concern is particularly salient if Chinese Americans tended to co-locate with Japanese Americans in the same enumeration districts, as discussed in the Methodology Section. Table 4 re-estimates the model from Column (1) of Table 3, sequentially dropping enumeration districts based on varying degrees of overlap between Japanese and Chinese Americans in 1940. Column (2) excludes districts where the smaller of the two groups ex-

[15]Appendix Table B.3 presents the same specifications for White, Black, and other Asian Americans. The White population was stable outside the exclusion zone but increased within it. The Black population remained approximately stable outside the exclusion zone and increased inside it. The other Asian American population declined in both regions, likely reflecting substitution for Japanese American agricultural workers outside of urban areas.

Table 3: The effect of internment on Japanese American enclaves

	(1)	(2)	(3)	(4)
	Panel A: Japanese population in 1950			
1940 Japanese pop	1.762***	1.652***	1.747***	1.628***
	(0.283)	(0.270)	(0.0630)	(0.0631)
1940 Japanese pop × EZ	-1.469***	-1.367***	-1.453***	-1.341***
	(0.294)	(0.279)	(0.0631)	(0.0632)
R^2	0.350	0.376	0.351	0.380
N	10,805	10,805	10,805	10,805
	Panel B: Chinese population in 1950			
1940 Chinese pop	0.555***	0.545***	0.555***	0.545***
	(0.0771)	(0.0766)	(0.0771)	(0.0768)
1940 Chinese pop × EZ	-0.00929	-0.00806	-0.0102	-0.00908
	(0.111)	(0.110)	(0.111)	(0.110)
R^2	0.842	0.847	0.842	0.847
N	10,805	10,805	10,805	10,805
	Panel C: Differences from the pooled regression			
Effect outside of the EZ	1.207***	1.107***	1.192***	1.082***
	(0.294)	(0.281)	(0.293)	(0.278)
Effect in the EZ	-0.252**	-0.252**	-0.251**	-0.249**
	(0.112)	(0.112)	(0.113)	(0.112)
Additional ED controls	N	Y	N	Y
Other race gradients	N	N	Y	Y

Notes: Each observation is an enumeration district and is weighted by the total 1940 population of that district. The difference in the main effect measures the effect per 1940 Japanese resident for EDs outside of the exclusion zone. The effect in the exclusion zone is also measured per Japanese resident in 1940, and is the sum of the Japanese-Chinese difference in the main effect and the difference in the interaction term. Addition controls include: city dummies, distance from the central business district, median LIDO score, percent foreign born, percent recent immigrant, and the percent with a high school education. All controls are measured in 1940. Other race gradients include the White and Black populations in 1940 and their interactions with the exclusion zone indicator. Statistical significance: $*p < 0.1$, $**p < 0.05$, $p***< 0.01$.

ceeds 50 individuals; Column (3) lowers this threshold to 10 individuals; and Column (4) excludes any district with even a single Chinese and Japanese resident. As we move from the unrestricted to the most restrictive specification, the estimated treatment effect increases in magnitude. The results suggest that, outside the exclusion zone, enumeration districts gained about 1.2 Japanese Americans for each Japanese resident in 1940, very similar to the previous table. Within the exclusion zone, internment reduced the Japanese population by 0.53 individuals per 1940 resident, double the previous estimate. From Panel B, it is apparent that the difference in the exclusion zone effect is driven in part by a more stable Chinese population in districts with few Japanese Americans.

7 Japanese American Internment and the Great Migration

The previous section establishes that the evacuated residents of Japantowns did not return in sufficient numbers to reestablish their enclaves to pre–World War II levels. This raises the question: What became of historic Japantowns? Did these neighborhoods simply decline in population, or were Japanese Americans replaced by others? If so, by whom?

From the 1910s to the 1930s, millions of African Americans migrated from the American South to cities in the North and Midwest, with particularly large inflows to Chicago, Baltimore, Detroit, and Cleveland. During the Second Great Migration, typically dated to 1940, African Americans also began moving in large numbers to Western cities, including those with historic Japantowns such as San Francisco and Los Angeles. At the same time, Black households were not the only group to migrate westward in large numbers. Western cities offered higher incomes, and World War II generated substantial demand for manufacturing labor, particularly in munitions plants and shipyards. As a result, the White population in Western cities also increased significantly.

Let $P^0_{i,1950,B}$ and $P^0_{i,1950,W}$ denote the potential Black and White populations in 1950 in the absence of the internment policy. Additionally, let $\mathbf{P}_{i,t}$ represent the vector of observed populations for the four racial groups – White, Black, Chinese, and Japanese – and define $\mathbf{p}$ as a particular realization of that vector. To estimate these counterfactual populations, we

Table 4: The effect of internment on Japanese enclaves dropping EDs with overlapping populations

	(1)	(2)	(3)	(4)
	Panel A: Japanese population in 1950			
1940 Japanese pop	1.762***	2.123***	1.905***	1.746***
	(0.283)	(0.214)	(0.356)	(0.358)
1940 Japanese pop × EZ	-1.469***	-1.871***	-1.695***	-1.563***
	(0.294)	(0.230)	(0.369)	(0.374)
R^2	0.350	0.281	0.172	0.122
N	10,805	10,773	10,647	9,856
	Panel B: Chinese population in 1950			
1940 Chinese pop	0.555***	0.555***	0.555***	0.561***
	(0.0771)	(0.0772)	(0.0772)	(0.0931)
1940 Chinese pop × EZ	-0.00929	-0.0114	0.119	0.153
	(0.111)	(0.112)	(0.0871)	(0.0958)
R^2	0.842	0.841	0.856	0.893
N	10,805	10,773	10,647	9,856
	Panel C: Differences from the pooled regression			
Effect outside of the EZ	1.207***	1.567***	1.349***	1.185***
	(0.294)	(0.228)	(0.364)	(0.370)
Effect in the EZ	-0.252**	-0.292**	-0.464***	-0.532***
	(0.112)	(0.117)	(0.107)	(0.111)
ED restriction	None	min ≤ 50	min ≤ 10	min $= 0$

Notes: Each observation is an enumeration district and is weighted by the total 1940 population of that district. The difference in the main effect measures the effect per 1940 Japanese resident for EDs outside of the exclusion zone. The effect in the exclusion zone is also measured per Japanese resident in 1940, and is the sum of the Japanese-Chinese difference in the main effect and the difference in the interaction term. The row displaying min $\leq x$ denotes the minimum of the 1940 Japanese and Chinese populations in that ED must be less than or equal x to be included in the sample. For example, Column (2) includes enumeration districts that have fewer than 10 Chinese Americans, fewer than 10 Japanese Americans, or both in 1940. It rules enumeration districts in which Chinese and Japanese overlap beyond the threshold. There are no additional controls in this table. Statistical significance: $*p < 0.1$, $**p < 0.05$, $p*** < 0.01$.

introduce two final assumptions.

Assumption 7.1 *The expected counterfactual 1950 White and Black populations are linear functions of the 1940 racial population vector* $\mathbf{P}_{i,1940}$*, with coefficients on the Chinese and Japanese American populations constrained to be equal. These linear functions may differ inside and outside the exclusion zone.*

$$\mathbb{E}\left[P^0_{i,1950,B} \mid EZ, \mathbf{P}_{i,1940} = \mathbf{p}\right] = \lambda_0^{EZ} + \lambda_W^{EZ} P_{1940,W} + \lambda_B^{EZ} P_{1940,B} + \lambda_J^{EZ} P_{1940,J} + \lambda_C^{EZ} P_{1940,C}$$

$$\mathbb{E}\left[P^0_{i,1950,W} \mid EZ, \mathbf{P}_{i,1940} = \mathbf{p}\right] = \theta_0^{EZ} + \theta_W^{EZ} P_{1940,W} + \theta_B^{EZ} P_{1940,B} + \theta_J^{EZ} P_{1940,J} + \theta_C^{EZ} P_{1940,C}$$

subject to the constraints $\lambda_J = \lambda_C$ *and* $\theta_J = \theta_C$*.*

This assumption allows for the possibility that Black and White households were more likely to move to enumeration districts where their own group was already represented. It also permits White households to have a stronger preference for same-race neighbors, reflecting greater taste-based discrimination, and to be more likely to move away from Black households (White flight). The specification allows for the Black and White populations in all enumeration districts to grow as Americans migrated westward (captured by the intercept term), and for that growth to be proportional to the existing population in each district (the sum of the remaining coefficients). The linear functional form is easily generalizable, fits the conditional expectation function well – as shown in binned scatter plots – and is straightforward to interpret.

The main restriction imposed by Assumption 7.1 is that Japanese and Chinese Americans would have had the same effect on White population growth in the absence of internment (and similarly for Black population growth). This assumption is plausible for several reasons.

First, White and Black Americans often confused Chinese and Japanese Americans. This is evidenced by a *Life Magazine* article published shortly after Pearl Harbor that explained how to distinguish the two groups using stereotypical phenotypic features. In the wake of Pearl Harbor, Chinese Americans frequently wore buttons stating "Chinese. Not Japanese." in an effort to avoid discrimination. Such behavior suggests that White and Black households

likely grouped Chinese and Japanese Americans into the same "type" in their pre–World War II discriminatory behavior.

Second, beyond the perceptions of White and Black Americans, Chinese and Japanese Americans were similar along several objective dimensions. Both groups were Asian, spoke languages with comparable linguistic distance from English, had similar economic profiles, primarily lived on the West Coast, exhibited similar geographic distributions, and comprised similar shares of the total population.

Given this assumption, we estimate the following regression separately for each race, both inside and outside the exclusion zone:

$$P_{i,1950,r} = \beta_0 + \beta_W P_{i,1940,W} + \beta_B P_{i,1940,B} + \beta_J P_{i,1940,J} + \beta_C P_{i,1940,C} + \epsilon_{i,1950,r} \qquad (2)$$

for $r \in \{W, B\}$.

In the absence of internment, and under Assumption 7.1, we would expect $\hat{\beta}_J$ to be close to $\hat{\beta}_C$. Thus, the null hypothesis $H_0 \colon \beta_J = \beta_C$ serves as a test of whether Japanese American internment affected the White and Black populations in the enumeration district.

It is important to note that our approach allows areas outside the exclusion zone to be affected by the internment policy. For example, if internment induced Japanese Americans to move eastward, the resulting inflows into enclaves that were small before World War II may have influenced where Black households settled in the postwar period. However, such effects are likely to be second-order relative to the primary effect of internment: the removal of Japanese Americans from the West Coast.

Table 5 shows that within the exclusion zone, there was close to one-to-one replacement of Japanese Americans by Black Americans. Columns (1) and (2) present the results for enumeration districts within the exclusion zone, while Columns (3) and (4) present the results for districts outside the exclusion zone. The even-numbered columns include additional controls. The estimates suggest that for every Japanese American who was evacuated, the Black population increased by 0.5 individuals. This estimate is similar to the upper bound of the internment effect on the 1950 Japanese population, indicating near one-to-one replace-

Table 5: The effect of internment on the 1950 Black population

	Inside EZ		Outside EZ	
	(1)	(2)	(3)	(4)
1940 Black pop	1.635***	1.489***	1.052***	0.948***
	(0.0728)	(0.0734)	(0.0393)	(0.0535)
1940 White pop	-0.00533	0.00672	-0.0173*	-0.00272
	(0.00611)	(0.00739)	(0.00966)	(0.00741)
1940 Chinese pop	-0.00980	-0.100***	-0.00318	-0.00357
	(0.0128)	(0.0235)	(0.0446)	(0.0480)
1940 Japanese pop	0.465***	0.398***	1.715	1.151
	(0.151)	(0.150)	(1.128)	(1.036)
R^2	0.517	0.560	0.722	0.730
N	3,146	3,129	7,706	7,676
Treatment effect $(\hat{\beta}_J - \hat{\beta}_C)$	0.474***	0.498***	1.718	1.155
	(0.156)	(0.153)	(1.125)	(1.033)
Additional ED controls	N	Y	N	Y

Notes: Statistical significance: $*p < 0.1$, $**p < 0.05$, $p***< 0.01$.

ment. There is no evidence of a corresponding effect outside the exclusion zone. Comparable estimates for the White population appear in Table 6. There is no evidence that Japanese American internment increased the 1950 White population in historic Japantowns, either inside or outside the exclusion zone. Appendix Table B.2 shows the rate at which enumeration districts experienced significant racial transition as a result of the Great Migration. Across our whole sample, 9% experienced substantial Black in-migration between 1940 and 1950. For districts with a sizable Japanese population in 1940, that number is 44%, while the same rate for comparable Chinese enclaves is only 13%.

8 Post-war Japanese American Enclave Formation

After the war, many of the Japanese Americans unwilling or unable to return to their former homes resettled in major cities outside the exclusion zone. Table 1 shows the sizable gains in Japanese population accruing to cities like Chicago, Denver, Salt Lake City, and Spokane.

Table 6: The effect of internment on the 1950 White population

	Inside EZ		Outside EZ	
	(1)	(2)	(3)	(4)
1940 Black pop	0.0708	-0.232	-0.0549	0.0372
	(0.225)	(0.251)	(0.0356)	(0.0284)
1940 White pop	1.688***	1.583***	0.976***	0.957***
	(0.169)	(0.171)	(0.0486)	(0.0525)
1940 Chinese pop	0.302***	0.725***	-0.369***	-0.0254
	(0.111)	(0.205)	(0.120)	(0.0949)
1940 Japanese pop	0.232	0.834**	-2.138	-1.228
	(0.172)	(0.324)	(1.530)	(1.506)
R^2	0.441	0.531	0.619	0.656
N	3,146	3,129	7,706	7,676
Treatment effect $(\hat{\beta}_J - \hat{\beta}_C)$	-0.0699	0.109	-1.769	-1.202
	(0.139)	(0.365)	(1.547)	(1.510)
Additional ED controls	N	Y	N	Y

Notes: Statistical significance: $*p < 0.1$, $**p < 0.05$, $p***< 0.01$.

Many who resettled colocated with other Japanese, forming new enclaves. Appendix Figure A.8 shows the locations of some of these neighborhoods. They tended to form in areas adjacent to the downtowns of these cities, mirroring the pattern of previous Japanese enclaves on the West Coast.

Table 7 describes the characteristics of these newly-formed enclaves, contrasting their development with that of the pre-war Japantowns inside the exclusion zone. The first column shows the demographics of enumeration districts inside the exclusion zone with a significant Japanese American population before the war. The typical Japanese American in these 1940 enclaves lived in a neighborhood that was about 34% Japanese, 9% Black, and 30% first-generation immigrants. Over 5,500 Japanese Americans lived in majority-Japanese enumeration districts. By 1950, these neighborhoods would only be 10% Japanese and 20% first-generation immigrants, with the Black share rising to 32%. No majority-Japanese districts remained.

The second column shows the same demographics for districts outside the exclusion zone

Table 7: Summary statistics: Japanese American enclaves in 1940 vs. 1950

	Inside EZ, 1940 basis	Outside EZ, 1950 basis
	1940 characteristics	
Dist. to CBD (miles)	3.57	2.58
Med. income	1,972	2,200
Population	1,276	1,265
Density	8,366	13,582
% Japanese American	0.34	0.01
% Chinese American	0.04	0.00
% Other Asian American	0.03	0.00
% Black	0.09	0.01
% White	0.50	0.97
% first-gen. immigrant	0.30	0.15
	1950 characteristics	
Med. income	3,855	2,794
Population	1,332	1,476
Density	8,873	15,800
% Japanese American	0.10	0.17
% Chinese American	0.03	0.00
% Other Asian American	0.01	0.00
% Black	0.32	0.13
% White	0.54	0.69
% first-gen. immigrant	0.20	0.15
N	93	348

Notes: Summary statistics in the first (second) column are weighted by the 1940 (1950) Japanese American population. Sample restricted to enumeration districts with at least 30 Japanese residents making up at least 10% of the population. Median income based on 1950 LIDO score. Density is persons per square kilometer.

with a significant Japanese population following the war. The typical Japanese American in these enclaves in 1950 lived in a neighborhood that was about 17% Japanese, 69% White, and 15% first-generation immigrants. Before the war, these neighborhoods were almost entirely White and had a comparable immigrant population. Thus, the new post-war Japanese enclaves were less heavily Japanese and overall less diverse than the pre-war exclusion zone enclaves. None of these enumeration districts transitioned to being majority-Japanese by 1950, indicating that significant Japantowns did not reemerge inside or outside the exclusion zone following internment.

9 Evidence from Linked Data

The main analysis of this paper relies on the 1940 and 1950 full-count censuses. We aggregate the repeated cross-sections into an enumeration-district panel. As an alternative, we could link individuals from the 1940 to the 1950 census using names, birth year, and birthplace (Abramitzky et al., 2021). Our approach has several advantages over linking for answering our primary questions. Individual record linkage requires matching on imperfectly recorded information (e.g., age and birthplace) and on information that can change over time (e.g., household composition or names). Asian American names were probably more likely to be misspelled or Americanized over time than those of the general population. Enumeration districts, by contrast, were carefully recorded on census schedules, and their maps are well documented. Thus, we can consistently link districts, but only imperfectly link individuals, which is especially costly in our context because urban Asian enclaves were often small.

Linked census data nevertheless allows us to address a richer set of questions. For example, did former West Coast Japantown residents drive growth in the Mountain West? Were the residents who reestablished smaller enclaves in Los Angeles and San Francisco after World War II the same Japanese Americans who had lived there before internment? Because these are questions about individuals, rather than places, they can only be answered using linked data, as using repeated cross-sections rather than panels to measure individual changes can be misleading (Abramitzky et al., 2014).

To address these questions, we use data from the Multigenerational Longitudinal Panel (MLP) project published by IPUMS (Helgertz et al., 2025). The sample includes Japanese and Chinese Americans observed in the 1940 census who are linked to their 1950 records. We further restrict to individuals residing in one of our exclusion-zone sample cities in 1940. We then compute race-specific transition probabilities for city of residence between 1940 and 1950.

Figure 7 plots these probabilities for those living in Los Angeles, San Francisco, and Seattle in 1940. The horizontal axis reports the probability that a Chinese resident observed in 1940 is found in a different city in 1950; the vertical axis shows the analogous probability

for Japanese residents. Points on the 45-degree line indicate cities where both groups have similar transition probabilities. Cities in states overlapping the exclusion zone (Arizona, California, Oregon, and Washington) are shown in red; all others are blue. Because the probabilities of remaining in the same city are large, both axes are plotted on a log scale.[16]

The data show that many Japanese American internees returned to West Coast cities after internment. Others relocated to enclaves outside the exclusion zone, most notably Chicago. Chinese Americans were more likely to remain in the same city (although the difference appears small on the graph because of the log scale). When Chinese Americans did move, they were more likely to move from one West Coast city to another.

What made the stayers (or returners) unique? Table 8 regresses an indicator for being observed in the same city in both 1940 and 1950 on individual demographics in 1940. Japanese Americans in the exclusion zone were 15 percentage points less likely to be observed in the same city than Chinese Americans. Both homeownership and being foreign-born predict remaining in the same city, consistent with deeper ties to enclaves being an important draw for returners. Columns (2) and (3) restrict the sample to Japanese and Chinese Americans, respectively. Homeownership is especially predictive of returning to the same city for Japanese Americans, while the estimates for foreign-born status are similar (suggesting that this effect is not driven by internment itself). Years of schooling and marital status do not predict being observed in the same city between 1940 and 1950.

Some of these differences between Japanese and Chinese Americans may predate internment. To test the effect of internment more directly, we estimate a simple difference-in-differences specification. In this regression, each observation is a link (either 1930–1940 or 1940–1950):

$$Stayer_{irt} = \beta_0 + \beta_1 \mathbb{1}[r = \text{Japanese}] + \beta_2 \mathbb{1}[t = 1950] + \beta_3 \mathbb{1}[r = \text{Japanese}] \times \mathbb{1}[t = 1950] + \epsilon \quad (3)$$

where the first indicator equals one if the link is Japanese American in the first census year;

[16] If one race has a transition probability of at least 0.002 and the other has a transition probability of 0, we set the latter to 0.0001 and add a small amount of random noise so the markers remain visible. Our interpretation is robust to alternative thresholds.

Table 8: Selection into returning

	(1)	(2)	(3)
Japan	-0.152***		
	(0.0240)		
Log income	-0.0190*	-0.0163	-0.0148
	(0.00974)	(0.0110)	(0.0169)
Owns home	0.0339*	0.0692***	-0.00967
	(0.0192)	(0.0232)	(0.0338)
Foreign born	0.390***	0.339***	0.453***
	(0.0199)	(0.0254)	(0.0259)
Age	-0.00692*	-0.0104**	0.00599
	(0.00365)	(0.00505)	(0.00544)
Age squared	0.000102**	0.000157***	-0.0000360
	(0.0000433)	(0.0000574)	(0.0000674)
Female	-0.0406***	-0.0186	-0.0468*
	(0.0149)	(0.0171)	(0.0246)
Years of schooling	-0.00319	0.000312	-0.00272
	(0.00222)	(0.00368)	(0.00219)
Married	-0.00704	-0.0174	0.0131
	(0.0165)	(0.0215)	(0.0225)
Observations	6759	4257	2502
Race	Both	Japanese	Chinese

Notes: The sample includes individuals linked from 1940 to 1950 in the MLP data. All regressors are measured in 1940. Statistical significance: $*p < 0.1$, $**p < 0.05$, $p***< 0.01$.

Table 9: The effect of internment on staying

	(1)	(2)	(3)	(4)
	Panel A			
Treatment	-0.0772***	-0.0935***	-0.121***	-0.0461***
	(0.00769)	(0.00759)	(0.00990)	(0.0119)
Observations	53876	53876	30533	23343
Subsample	All	All	Female	Male
With controls	No	Yes	Yes	Yes
	Panel B			
Treatment	-0.0610***	-0.170***	-0.0809***	-0.103
	(0.0110)	(0.0153)	(0.0141)	(0.103)
Observations	23343	13681	16423	429
Subsample	Under 18	18-34	35-64	Over 65
With controls	Yes	Yes	Yes	Yes

Notes: Controls include dummies for the nine exclusion zone cities, sex, age, and age squared. Each observation is an MLP link. Statistical significance: $*p < 0.1$, $**p < 0.05$, $p*** < 0.01$.

the second equals one for 1940–1950 links (zero for 1930–1940 links). The interaction equals one for Japanese American links in 1940–1950, who were exposed to internment between the two censuses. The sample is limited to our nine exclusion-zone cities.

The results are reported in Table 9. The estimates are similar across demographic subsamples and imply a 4–17 percentage point reduction in the probability of being observed in the same city. The fact that these estimates are generally smaller than the estimates using unlinked data suggests that exclusion not only reduced the share of Japantown residents who stayed, but also reduced inflows of Japanese Americans who would otherwise have moved into these enclaves.

10 Conclusion and Discussion

This study documents the neighborhood impacts of a large scale, racially motivated episode of forced displacement inflicted on Japanese Americans by the U.S. government in the 1940s. We find that Japanese ethnic enclaves, which had been growing prior to WWII, experienced

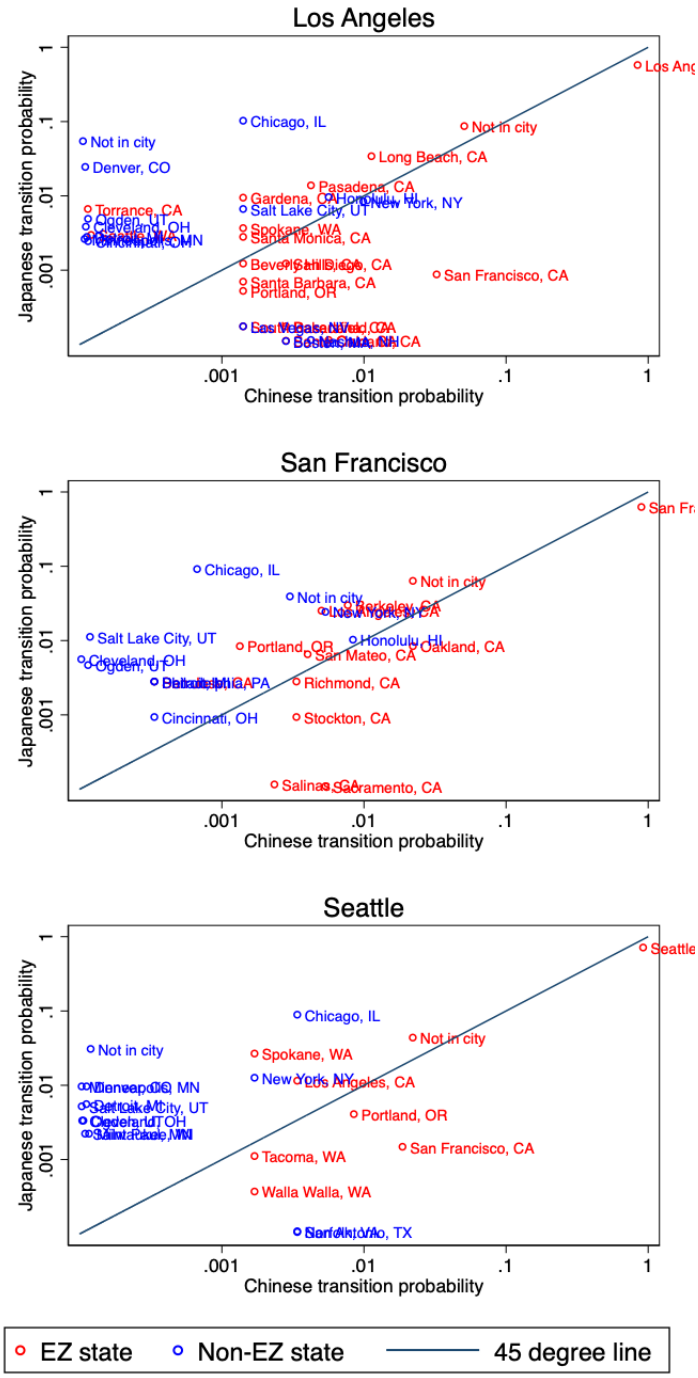
dramatic demographic changes as a result of this temporary shock. Relative to the expectations established by Chinese American enclaves, these enclaves lost 25-50% of their Japanese American residents between 1940 and 1950. Despite this, their total population typically grew somewhat, driven by a large influx of African Americans in search of available housing in cities largely hostile to their presence. To the best of our knowledge, we are the first to document this aspect of the Great Migration quantitatively.

Where did these displaced Japanese Americans go? We show that new (albeit smaller) Japanese enclaves were established outside of the exclusion zone as part of large eastward migration. These enclaves formed in close by cities like Spokane, in the Mountain West (Denver, Salt Lake City), and in the Midwest (Chicago). These enclaves typically formed in neighborhoods that were almost entirely White, with just a small pre-existing Japanese American population. Using linked data, we are able to show that Japanese Americans (relative to their Chinese American counterparts) were far more likely to relocate to cities distant from the West Coast. We also show that first-generation Japanese Americans (nisei) were substantial more likely to return to the West Coast than the more established second- and later-generation Japanese (nisei and sansei).

This work speaks to a number of literatures. The potential of temporary shocks to have long run impacts on cities has been subject to extensive investigation. We have shown that even a short run shock to the ethnic composition of neighborhoods can induce substantial changes in the trajectory of their development. This relates directly to the distinct literature on the role ethnic enclaves have played for immigrant communities. Our study can also be viewed as part of a broader topic, namely the role of race and racism in the development of Asian American urban communities in the United States. While much has been written about how racism has shaped urban outcomes for African Americans, its impacts on other marginalized communities have been subject to much less interrogation. This is perhaps surprising, as anti-Asian sentiment resulted in many West Coast communities pioneering some of the earliest attempts to institutionalize racism through property ownership laws and land use regulation (Shertzer et al., 2022).

This study also yields many open questions. Regarding the pronounced demographic shifts seen in West Coast Japantowns, one could ask to what extent these were historically contingent on the circumstances of the Great Migration. Would Japantowns fully reemerge in the absence of coinciding migration patterns? What impact did these newly diverse, multiethnic neighborhoods have on the outcomes of returners? Likewise of interest, what motivated individual migration decisions after internment? How did people choose a destination city, particularly one outside of the exclusion zone? What role did family and social networks play in influencing this choice? And what were the long-run consequences of these choices? We hope to address some of these questions in future work.

Figure 7: Transition probability in the MLP links



Notes: Locations inside the exclusion zone are highlighted in red, while those outside are depicted in blue. Both the y- and x-axis are on log scales. To allow the plotting of cities with transition probabilities of zero, such cities are bottom coded to 0.0001 plus random noise to allow the labels to be legible (these are the cities on the far left). See the text for details.

References

Abramitzky, Ran and Leah Boustan, "Immigration in American economic history," *Journal of economic literature*, 2017, *55* (4), 1311–1345.

_ , _ , and Dylan Shane Connor, "Leaving the enclave: Historical evidence on immigrant mobility from the industrial removal office," *The Journal of Economic History*, 2024, *84* (2), 352–394.

_ , _ , and Katherine Eriksson, "Europe's tired, poor, huddled masses: Self-selection and economic outcomes in the age of mass migration," *American Economic Review*, 2012, *102* (5), 1832–1856.

_ , _ , and _ , "A nation of immigrants: Assimilation and economic outcomes in the age of mass migration," *Journal of Political Economy*, 2014, *122* (3), 467–506.

_ , _ , and _ , "Do immigrants assimilate more slowly today than in the past?," *American Economic Review: Insights*, 2020, *2* (1), 125–141.

_ , _ , and Osea Giuntella, "Enclaves and Assimilation in the Age of Mass Migration: Evidence from Ethnic Catholic Churches," Technical Report, National Bureau of Economic Research 2025.

_ , _ , Katherine Eriksson, James Feigenbaum, and Santiago Pérez, "Automated linking of historical data," *Journal of Economic Literature*, 2021, *59* (3), 865–918.

Acemoglu, Daron, Tarek A Hassan, and James A Robinson, "Social structure and development: A legacy of the Holocaust in Russia," *The Quarterly Journal of Economics*, 2011, *126* (2), 895–946.

Aliprantis, Dionissi and Daniel Hartley, "Blowing it up and knocking it down: The local and city-wide effects of demolishing high concentration public housing on crime," *Journal of Urban Economics*, 2015, *88*, 67–81.

Arellano-Bover, Jaime, "Displacement, Diversity, and Mobility: Career Impacts of Japanese American Internment," *Working paper*, 2018.

Baldomero-Quintana, Luis, L Guillermo Woo-Mora, and Enrique De la Rosa-Ramos, "Infrastructures of race? Colonial indigenous segregation and contemporary land values," *Regional Science and Urban Economics*, 2025, *110*, 104065.

Bauer, Thomas K, Matthias Giesecke, and Laura M Janisch, "The impact of forced migration on mortality: evidence from German pension insurance records," *Demography*, 2019, *56* (1), 25–47.

_ , Sebastian Braun, and Michael Kvasnicka, "The economic integration of forced migrants: Evidence for post-war Germany," *The Economic Journal*, 2013, *123* (571), 998–1024.

Becker, Sascha O, "Forced displacement in history: Some recent research," *Australian Economic History Review*, 2022, *62* (1), 2–25.

_ **and Andreas Ferrara**, "Consequences of forced migration: A survey of recent findings," *Labour Economics*, 2019.

_ **, Irena Grosfeld, Pauline Grosjean, Nico Voigtländer, and Ekaterina Zhuravskaya**, "Forced migration and human capital: Evidence from post-WWII population transfers," *American Economic Review*, 2020, *110* (5), 1430–1463.

Brooks, Leah, Jonathan Rose, and Stan Veuger, "Destruction, Policy, and the Evolving Consequences of Washington, DC's 1968 Civil Disturbance," *Review of Economics and Statistics*, 2024, pp. 1–45.

Caudill, Steven B and Franklin G Mixon Jr, "Human capital investment and the internment of Japanese Americans during WWII: A public choice approach," *International Journal of Applied Economics*, 2012, *9* (1), 1–14.

Chan, Jeff, "Forced displacement and migrants' location choices: Evidence from the Japanese-Canadian experience during World War II," *Journal of Economic Behavior & Organization*, 2023, *211*, 206–240.

Chaney, Eric and Richard Hornbeck, "Economic dynamics in the Malthusian era: evidence from the 1609 Spanish expulsion of the Moriscos," *The Economic Journal*, 2016, *126* (594), 1404–1440.

Chin, Aimee, "Long-run labor market effects of Japanese American internment during World War II on working-age male internees," *Journal of Labor Economics*, 2005, *23* (3), 491–525.

Chiovelli, Giorgio, Stelios Michalopoulos, Elias Papaioannou, and Sandra Sequeira, "Forced displacement and human capital: Evidence from separated siblings," Technical Report, National Bureau of Economic Research 2021.

Collins, William J and Katharine L Shester, "Slum clearance and urban renewal in the United States," *American Economic Journal: Applied Economics*, 2013, *5* (1), 239–273.

Damm, Anna Piil, "Ethnic enclaves and immigrant labor market outcomes: Quasi-experimental evidence," *Journal of Labor Economics*, 2009, *27* (2), 281–314.

Daniels, Roger, *Asian America: Chinese and Japanese in the United States since 1850*, University of Washington Press, 1988.

_ , *Prisoners without trial: Japanese Americans in World War II*, Macmillan, 2004.

Eriksson, Katherine, "Ethnic enclaves and immigrant outcomes: Norwegian immigrants during the Age of Mass Migration," *European Review of Economic History*, 2020, *24* (3), 427–446.

Fiala, Nathan, "Economic consequences of forced displacement," *The Journal of Development Studies*, 2015, *51* (10), 1275–1293.

Grosfeld, Irena, Alexander Rodnyansky, and Ekaterina Zhuravskaya, "Persistent antimarket culture: a legacy of the pale of settlement after the holocaust," *American Economic Journal: Economic Policy*, 2013, *5* (3), 189–226.

Hartlaub, Peter, Nami Sumida, John Blanchard, Lea Suzuki Suzuki, and Stephanie Zhu, "Here's how SF's Japantown was devastated by mass incarceration," *San Francisco Chronicle*, 2024.

Haukka, Jari, Jaana Suvisaari, Matti Sarvimäki, and Pekka Martikainen, "The impact of forced migration on mortality: a cohort study of 242,075 Finns from 1939–2010," *Epidemiology*, 2017, *28* (4), 587–593.

Helgertz, Jonas, Nesile Ozder, Steven Ruggles, John Robert Warren, Catherine A. Fitch, J. David Hacker, Matt A. Nelson, Joseph P. Price, Evan Roberts, and Matthew Sobek, "IPUMS Multigenerational Longitudinal Panel: Version 2.0 [dataset]," *Dataset*. Minneapolis, MN: IPUMS 2025.

Higham, John, *Strangers in the land: Patterns of American nativism, 1860-1925*, Rutgers University Press, 2002.

Hirahara, Naomi and Geraldine Knatz, *Terminal Island: Lost Communities on America's Edge*, Angel City Press, 2015.

Komisarchik, Mayya, Maya Sen, and Yamil R Velez, "The political consequences of ethnically targeted incarceration: Evidence from Japanese American internment during World War II," *The Journal of Politics*, 2022, *84* (3), 1497–1514.

Kurashige, Scott, *The shifting grounds of race: Black and Japanese Americans in the making of multiethnic Los Angeles*, Princeton University Press, 2007.

Logan, John R and Weiwei Zhang, "Developing GIS Maps for US Cities in 1930 and 1940," in "The Routledge Companion to Spatial History," Routledge, 2018, pp. 229–249.

McClain, Charles J, "In re Lee Sing: The First Residential-Segregation Case," *Western Legal History*, 1990, *3*, 179.

Postel, Hannah Melissa, "Records of Exclusion: Chinese Immigration in Historical Perspective." PhD dissertation, Princeton University 2022.

Redding, Stephen J and Daniel M Sturm, "Neighborhood effects: Evidence from wartime destruction in London," Technical Report, National Bureau of Economic Research 2024.

Rothstein, Richard, *The color of law: A forgotten history of how our government segregated America*, Liveright Publishing, 2017.

Ruggles, Steven, Matt A. Nelson, Matthew Sobek, Catherine A. Fitch, Ronald Goeken, J. David Hacker, Evan Roberts, and J. Robert Warren, "IPUMS Ancestry Full Count Data: Version 4.0 [dataset]," 2024.

Ruiz, Isabel and Carlos Vargas-Silva, "The economics of forced migration," *The Journal of Development Studies*, 2013, *49* (6), 772–784.

Saavedra, Martin, "School quality and educational attainment: Japanese American internment as a natural experiment," *Explorations in Economic History*, 2015, *57*, 59–78.

_ , "Kenji or kenneth? pearl harbor and japanese-american assimilation," *Journal of Economic Behavior & Organization*, 2021, *185*, 602–624.

_ **and Tate Twinam**, "A machine learning approach to improving occupational income scores," *Explorations in Economic History*, 2020, *75*, 101304.

Shah, Nayan, *Contagious divides: Epidemics and race in San Francisco's Chinatown*, Vol. 7, Univ of California Press, 2001.

Shertzer, Allison, Tate Twinam, and Randall P Walsh, "Zoning and segregation in urban economic history," *Regional Science and Urban Economics*, 2022, *94*, 103652.

Shoag, Daniel and Nicholas Carollo, "The Causal Effect of Place: Evidence from Japanese-American Internment," *SSRN Working Paper*, 2016.

Takeda, Kohei and Atsushi Yamagishi, "The economic dynamics of city structure: evidence from Hiroshima's recovery," Technical Report, LSE CEP Discussion Paper #1988 2024.

Testa, Patrick A, "The economic legacy of expulsion: Lessons from post-war Czechoslovakia," *The Economic Journal*, 2021, *131* (637), 2233–2271.

Trauner, Joan B, "The Chinese as medical scapegoats in San Francisco, 1870-1905," *California History*, 1978, *57* (1), 70–87.

Verme, Paolo and Kirsten Schuettler, "The impact of forced displacement on host communities: A review of the empirical literature in economics," *Journal of Development Economics*, 2021, *150*, 102606.

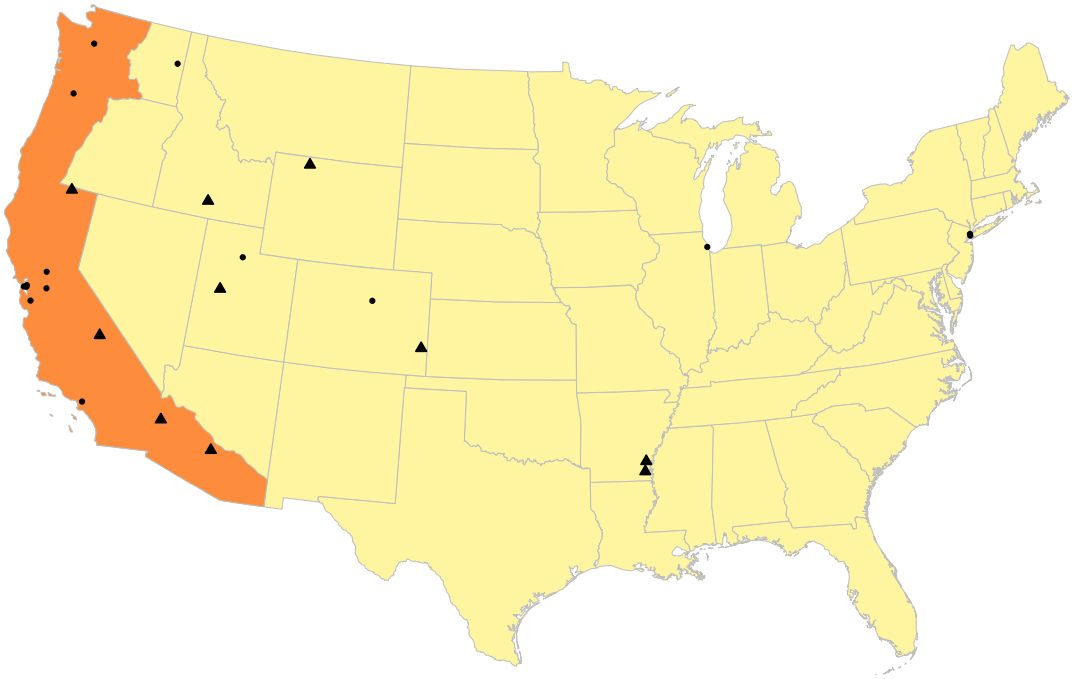
Xie, Yu and Margaret Gough, "Ethnic enclaves and the earnings of immigrants," *Demography*, 2011, *48* (4), 1293–1315.

Yamagishi, Atsushi and Yasuhiro Sato, "Persistent Stigma in Space: 100 Years of Japan's Invisible Race and Their Neighborhoods," *Review of Economics and Statistics*, 2025, pp. 1–46.

Zilic, Ivan, "Effect of forced displacement on health," *Journal of the Royal Statistical Society Series A: Statistics in Society*, 2018, *181* (3), 889–906.

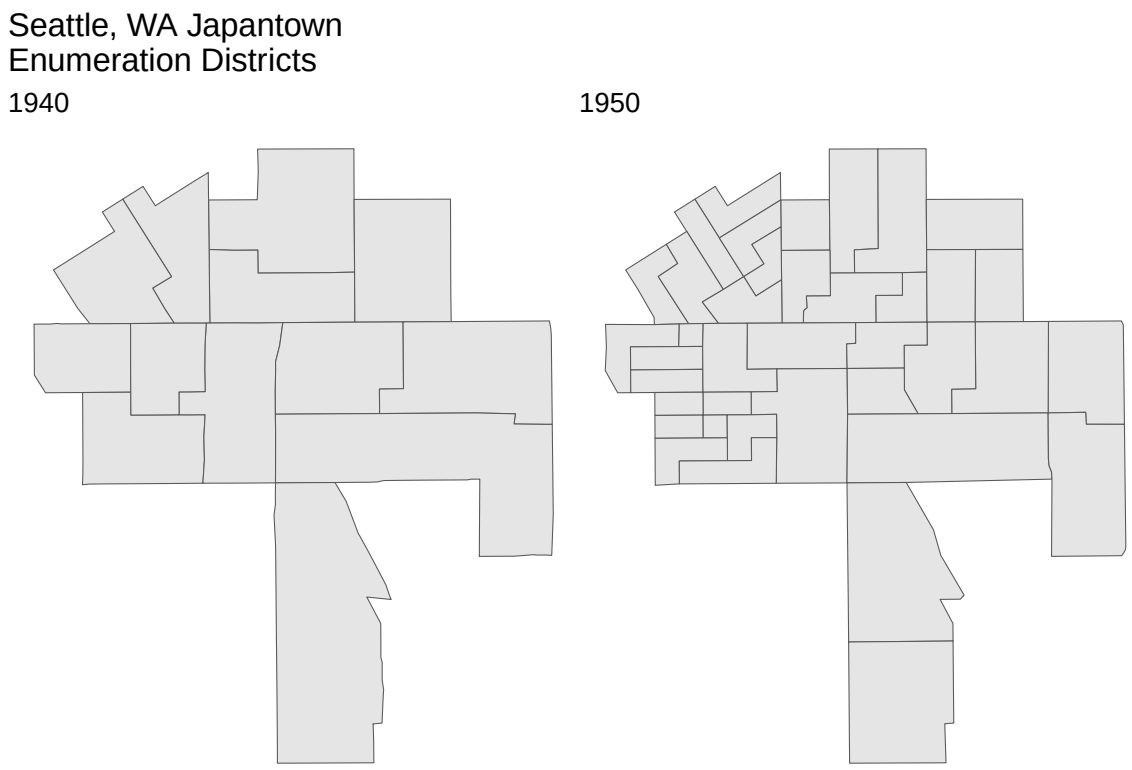
A Appendix Figures

Figure A.1: Exclusion Zone Map



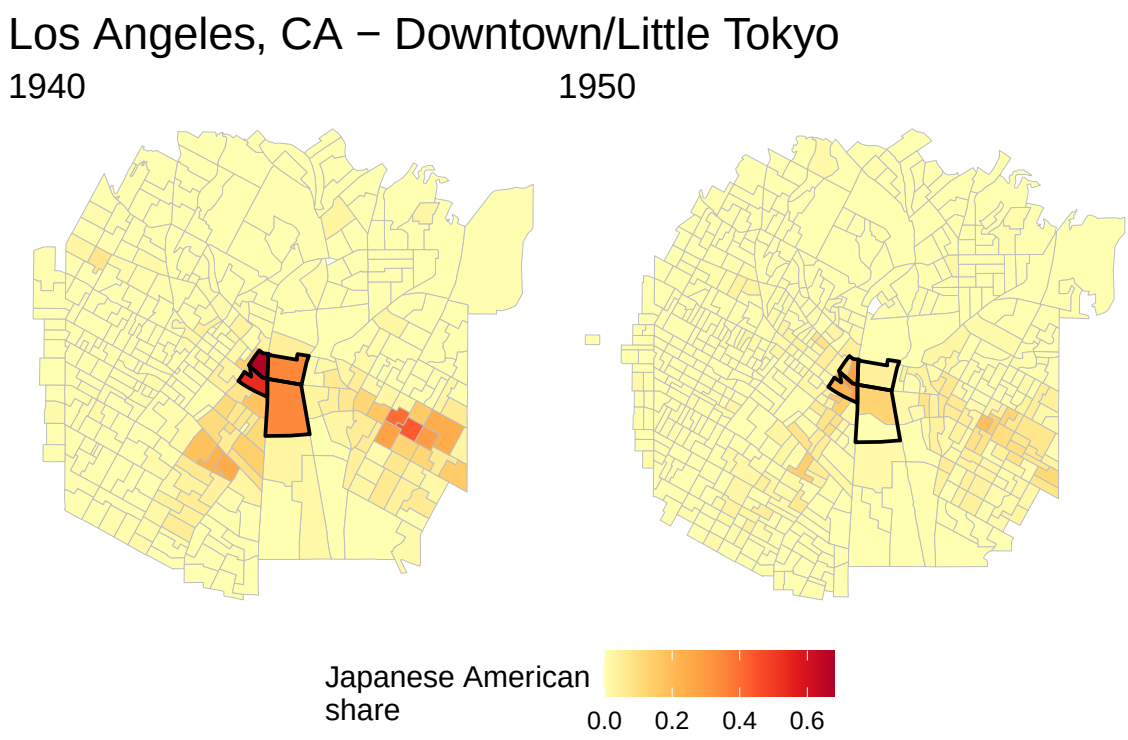
Notes: Exclusion zone depicted in orange. Cities in our sample are denoted by circles; internment camp locations are denoted by triangles.

Figure A.2: 1940 and 1950 Enumeration District Boundary Changes



Notes: Figure illustrates changes in enumeration district boundaries for the cluster of EDs in Seattle centered around the city's historic Japantown; this area is now referred to as the Chinatown–International District. Includes all Seattle EDs with at least 30 Japanese Americans and a Japanese American population share of at least 10%.

Figure A.3: Map of the Japanese American share in Little Tokyo, Los Angeles



Notes: 1940 EDs encompassing historic Japantown outlined in black. In 1940, this area had 1,413 Japanese American residents and 20 Black residents. By 1950, these numbers were 584 and 2,423, respectively.

Figure A.4: Map of the Black share in Little Tokyo, Los Angeles

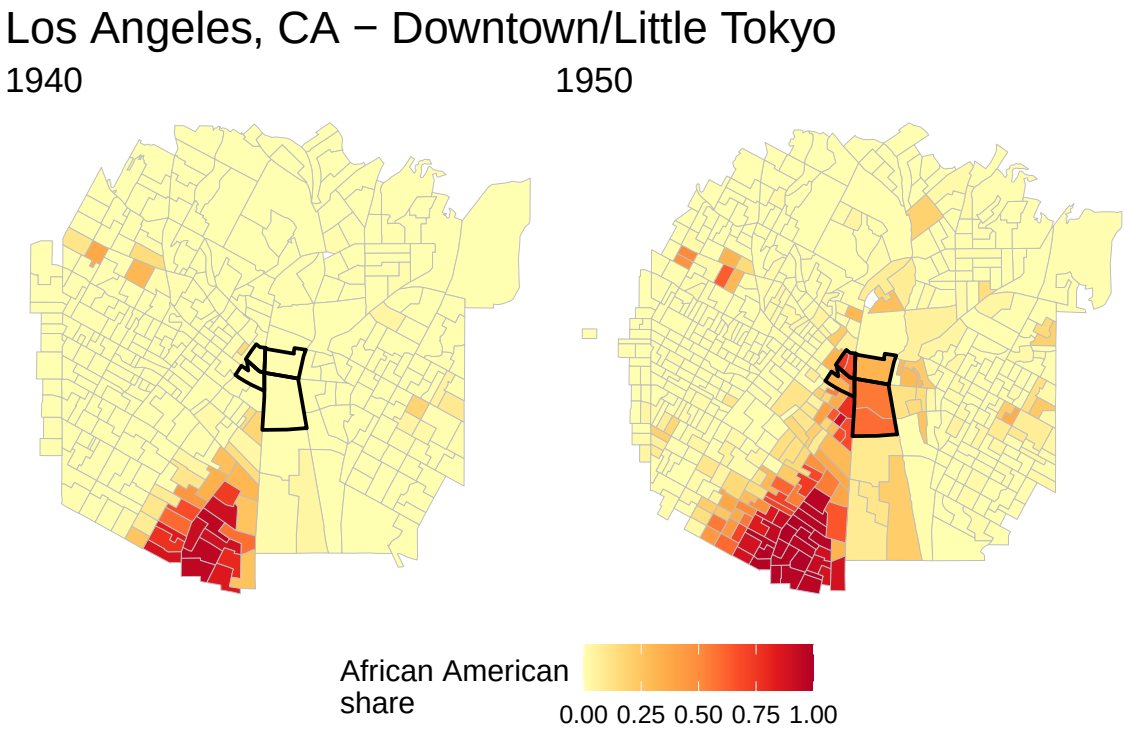
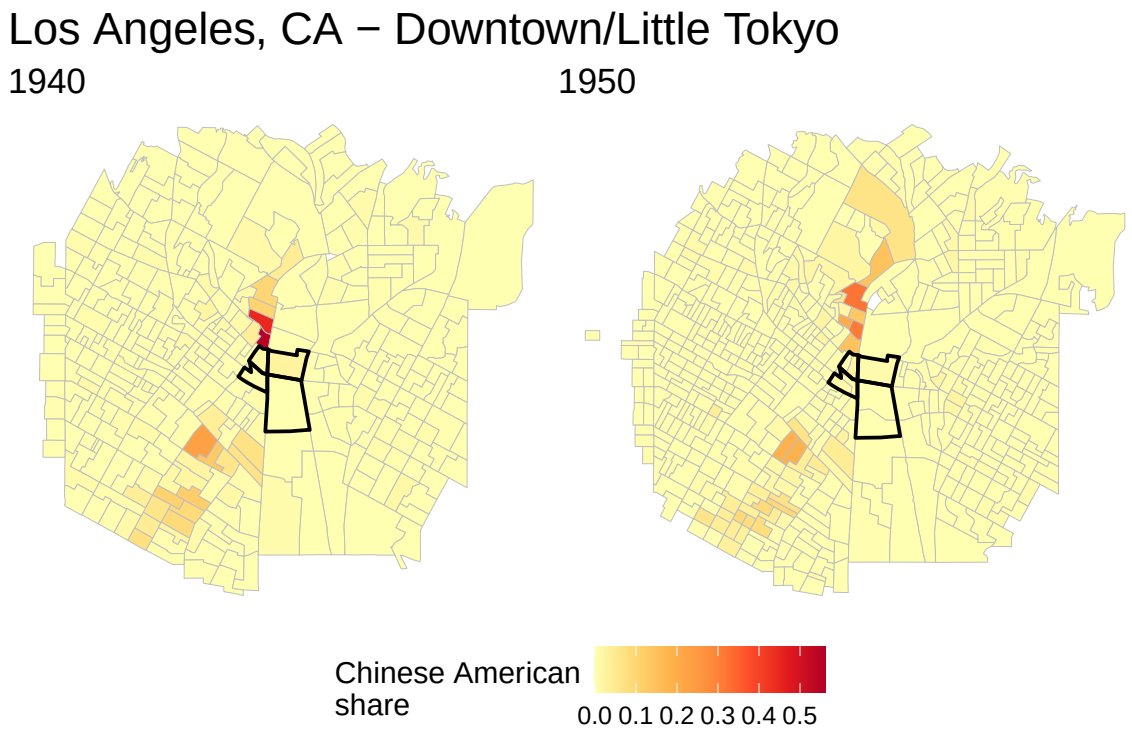
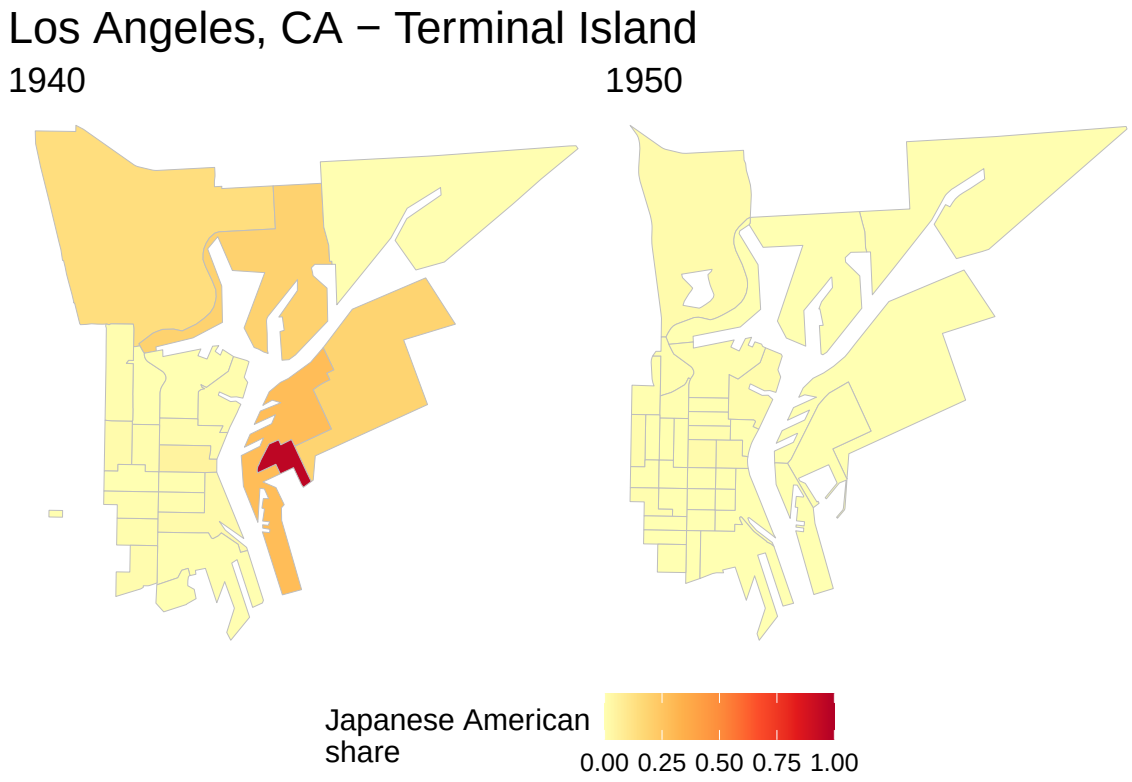


Figure A.5: Map of the Chinese American share in Little Tokyo, Los Angeles



Notes: In 1940 (1950), EDs outlined in black had 50 (35) Chinese American residents.

Figure A.6: Map of the Japanese American share in Terminal Island, Los Angeles



Notes: Terminal Island community. In 1940, core ED had 1,547 Japanese American residents (96% of its population) and no Black residents. The portion of the island in Los Angelese (depicted) had only 4 Black residents. By 1950, the island had 153 Black residents and no Japanese Americans.

Figure A.7: Map of the Black share in Terminal Island, Los Angeles

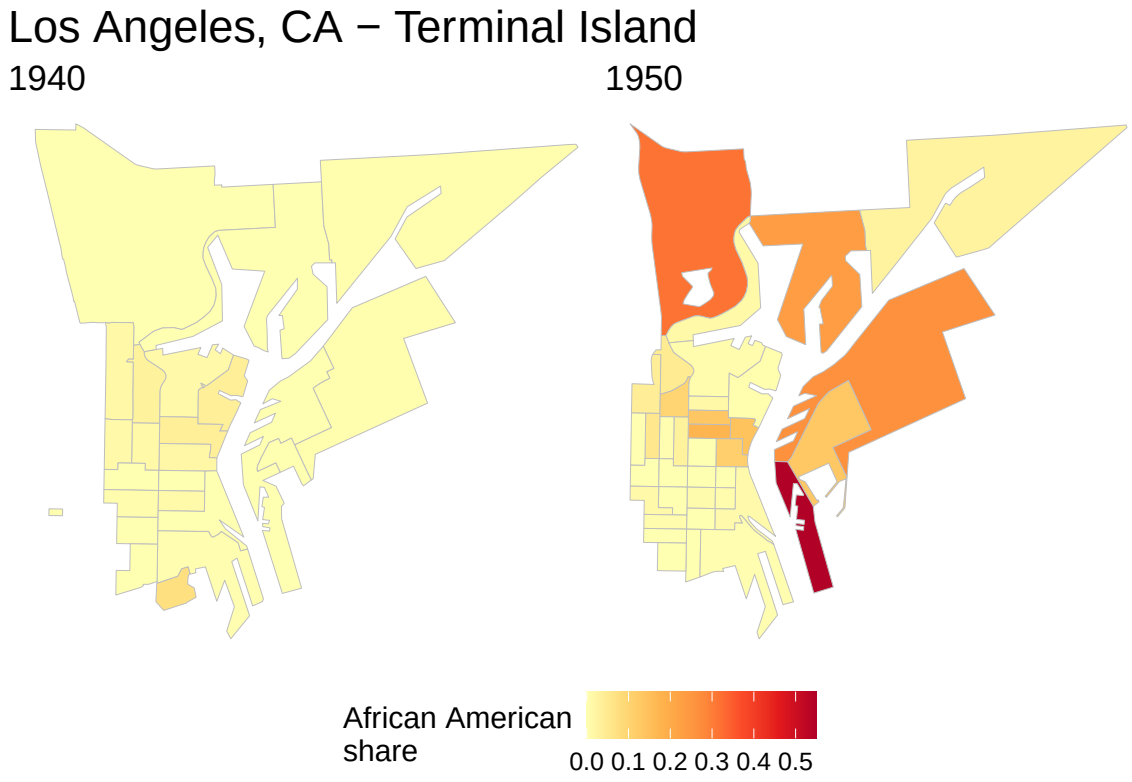


Figure A.8: Formation of new Japanese American enclaves in cities outside the exclusion zone

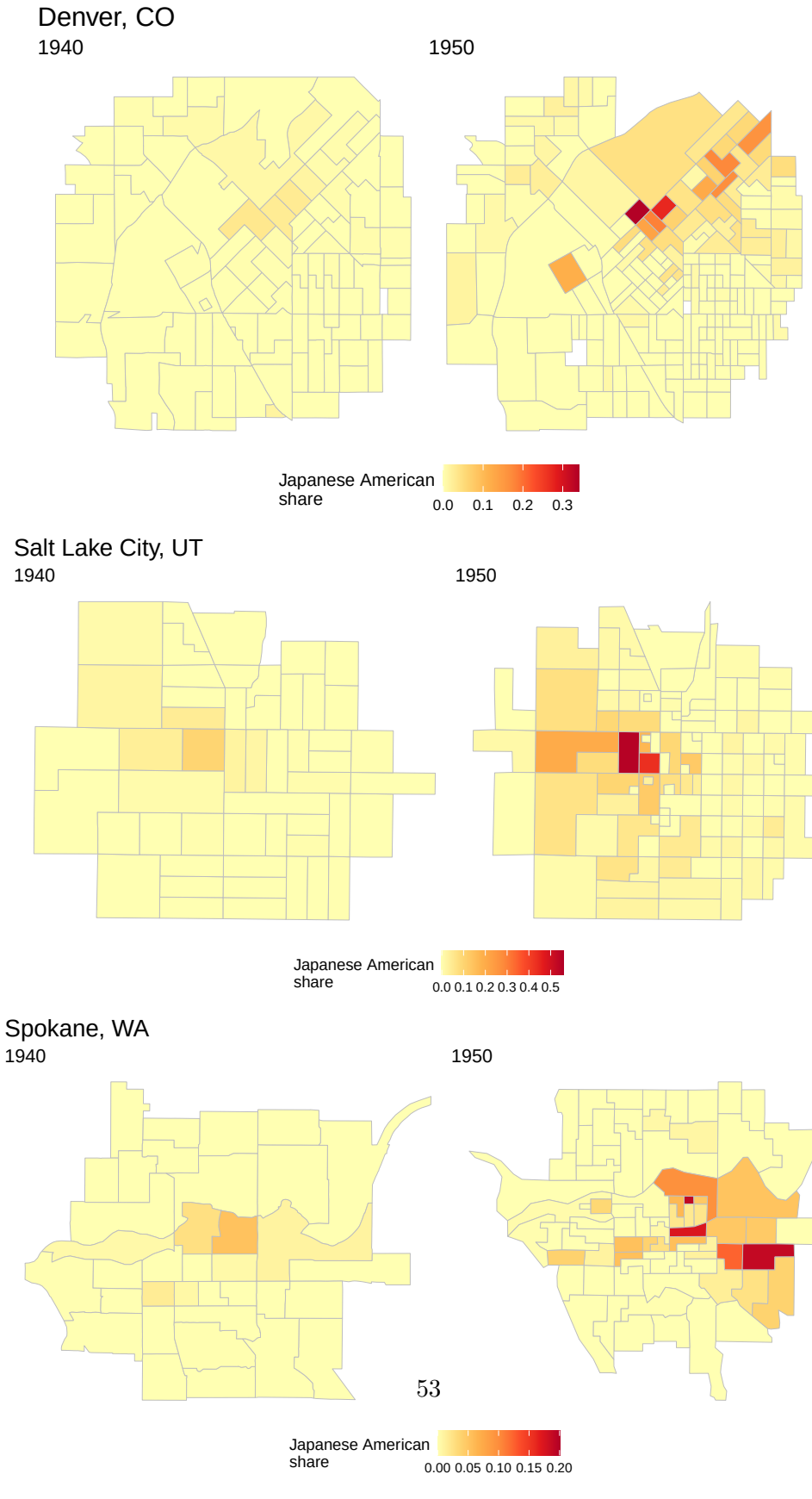
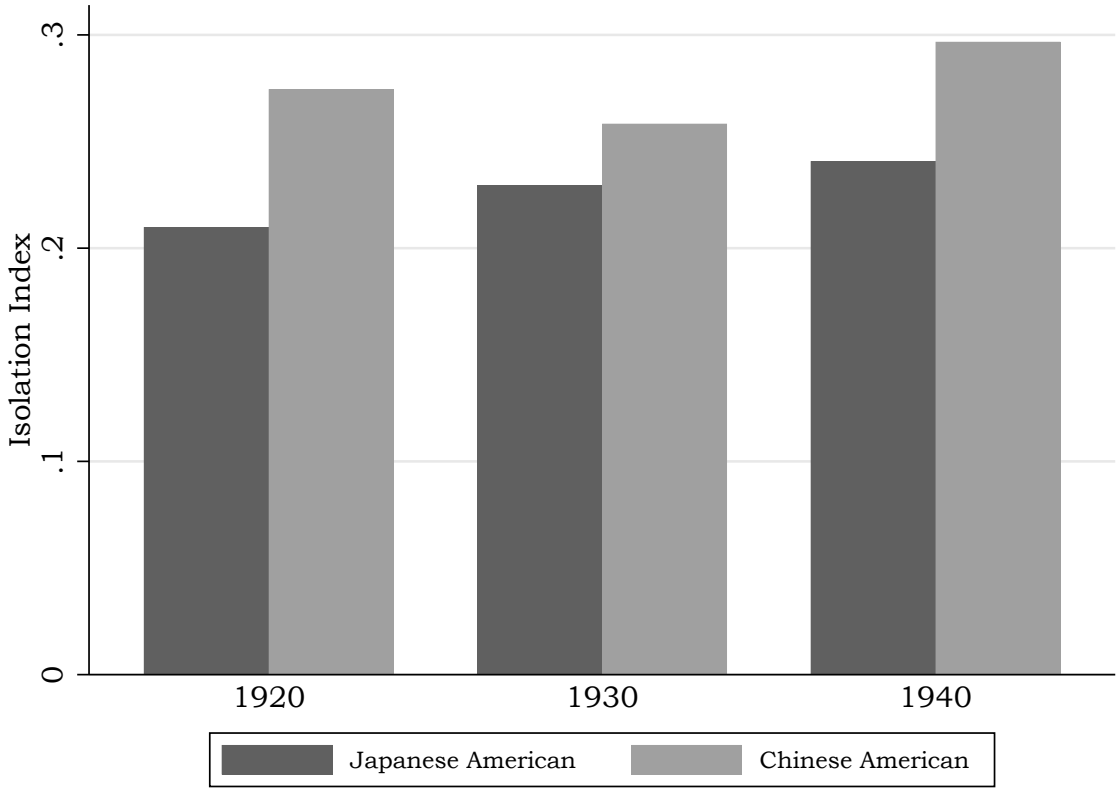
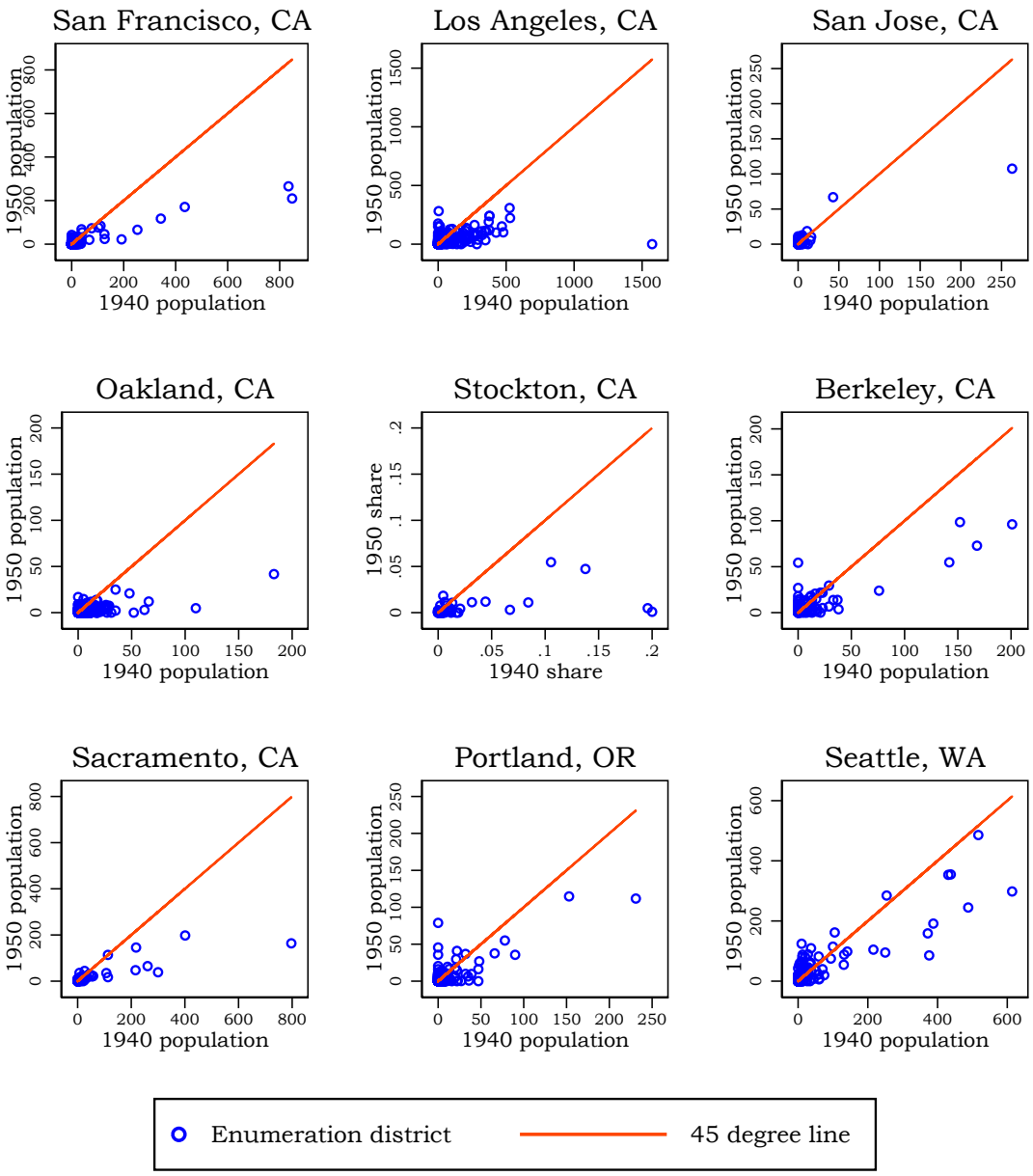


Figure A.9: Isolation index trends for Chinese and Japanese Americans



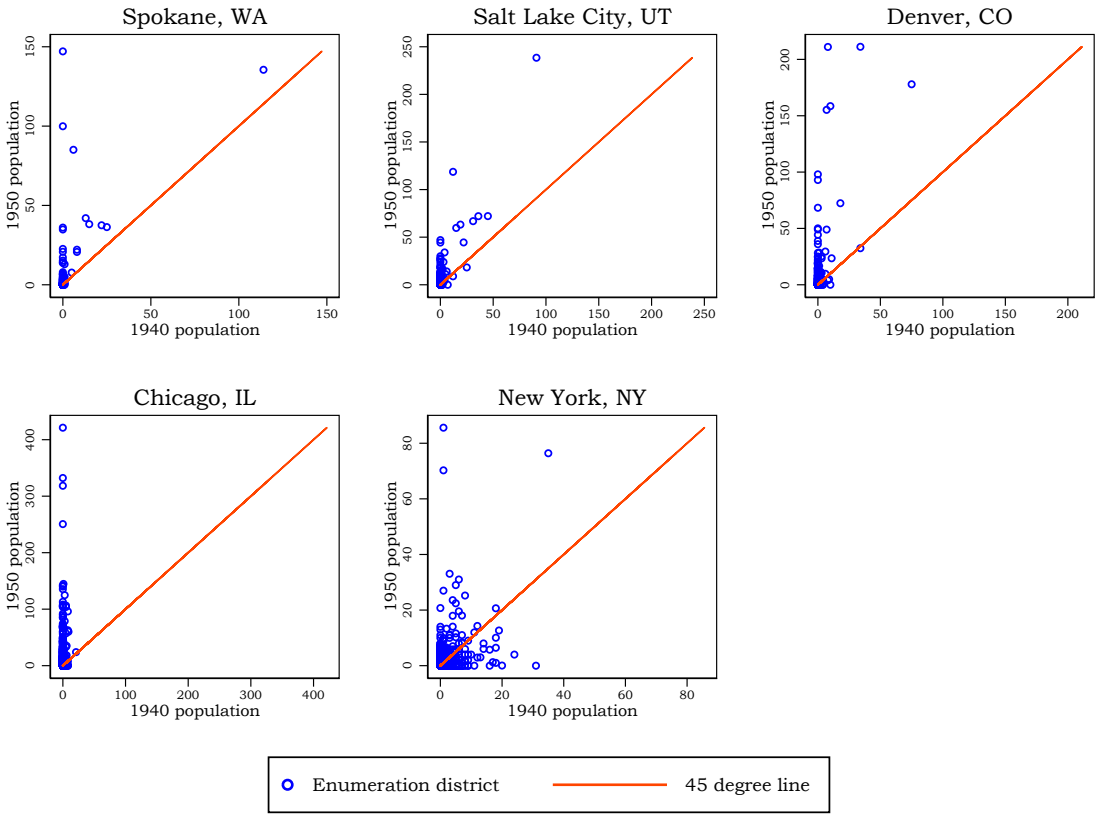
Notes: ED-level isolation index for Chinese and Japanese Americans in Los Angeles, San Francisco, and Seattle.

Figure A.10: The Japanese American population share in exclusion zone cities



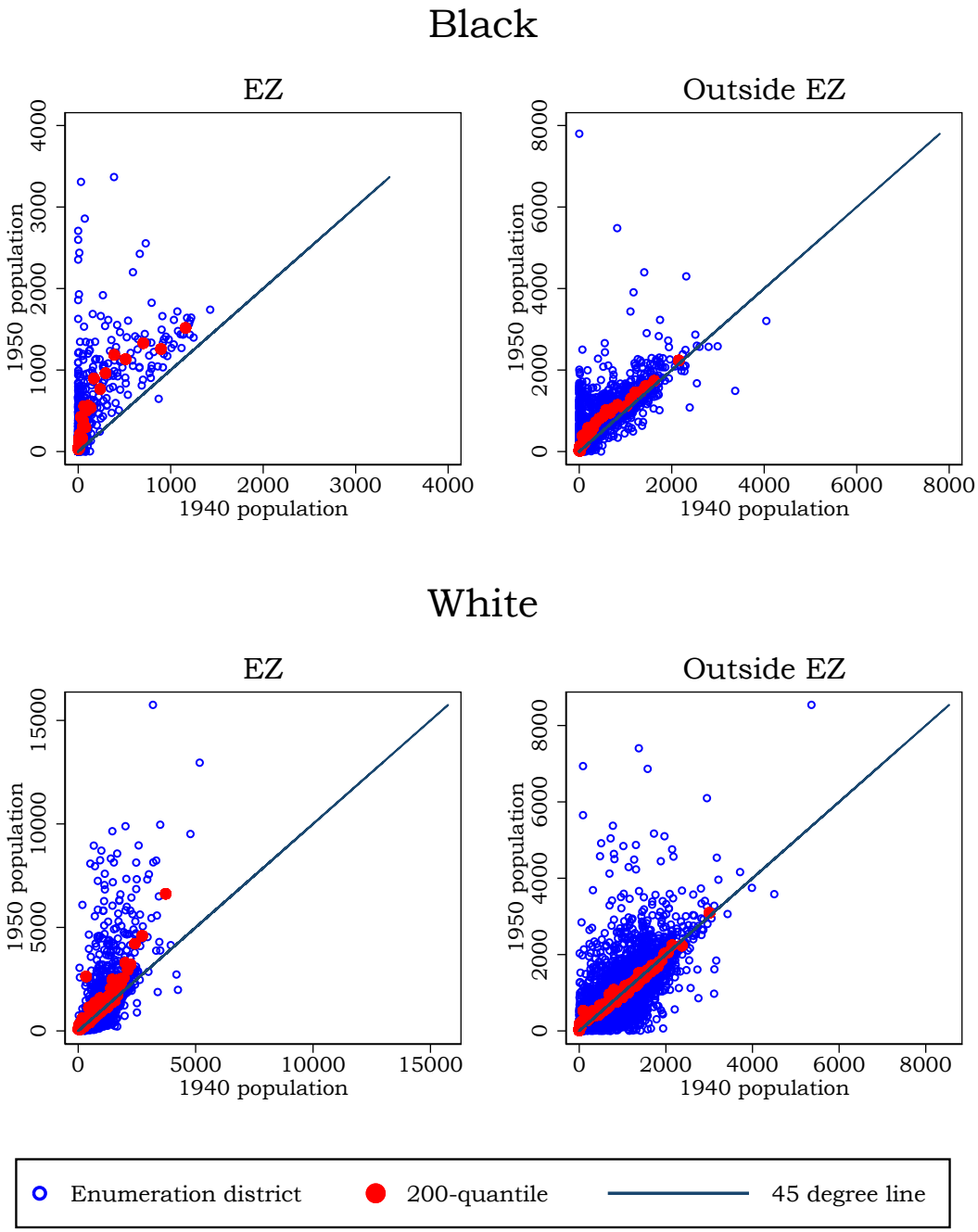
Notes: Each observation is a 1940 enumeration district. Population counts in 1950 are assigned by using consistent boundaries and assigns residents proportional to area when a 1950 ED overlaps with two or more 1940 EDs. Population counts come from the full count censuses from IPUMs.

Figure A.11: The Japanese American population share in cities outside the exclusion zone



Notes: Each observation is a 1940 enumeration district. Population counts in 1950 are assigned by using consistent boundaries and assigns residents proportional to area when a 1950 ED overlaps with two or more 1940 EDs. Population counts come from the full count censuses from IPUMs.

Figure A.12: Binned population counts by race and exclusion zone status



Notes: Each observation is a 1940 enumeration district. Population counts in 1950 are assigned by using consistent boundaries and assigns residents proportional to area when a 1950 ED overlaps with two 1940 EDs. Population counts come from the full count censuses from IPUMs. One White enumeration district with a population of 40,000 in 1950 is dropped.

B Appendix Tables

Table B.1: Correlation matrix of the racial groups by enumeration district

Variables	Japanese	Chinese	Other Asian	White	Black
Japanese	1.000				
Chinese	0.067	1.000			
Other Asian	0.318	0.129	1.000		
White	-0.050	-0.073	0.001	1.000	
Black	0.001	-0.010	-0.002	-0.444	1.000

Notes: Each observation is an enumeration district. Cells displays the sample correlation between the 1940 population.

Table B.2: Share of EDs experiencing large influx of African American in-movers

	% with large Black in-migration	N
All EDs	0.09	11,182
EDs in EZ	0.08	3,146
Japanese enclaves	0.44	94
Chinese enclaves	0.13	64

Notes: First row utilizes all EDs in the sample; second row restricts to EDs in the exclusion zone. Third (fourth) row restricts to EDs with at least 30 Japanese (Chinese) American residents making up at least 10% of the 1940 ED population. "Large" in-migration is defined as a change in the Black population of at least 100 individuals resulting in the Black share of the ED population increasing by at least 20 percentage points between 1940 and 1950.

Table B.3: Population gradients for other races

	(1)	(2)	(3)	(4)
	Panel A: White population in 1950			
1940 white pop	0.996***	0.970***	0.976***	0.964***
	(0.0361)	(0.0452)	(0.0487)	(0.0485)
1940 white pop × EZ	0.678***	0.622***	0.713***	0.661***
	(0.158)	(0.156)	(0.176)	(0.178)
R^2	0.519	0.569	0.520	0.572
N	10,805	10,805	10,805	10,805
	Panel B: Black population in 1950			
1940 Black pop	1.065***	0.967***	1.052***	0.968***
	(0.0344)	(0.0460)	(0.0394)	(0.0485)
1940 Black pop × EZ	0.603***	0.533***	0.583***	0.516***
	(0.0813)	(0.0743)	(0.0828)	(0.0760)
R^2	0.687	0.699	0.689	0.701
N	10,805	10,805	10,805	10,805
	Panel C: Other Asian population in 1950			
1940 OA pop	0.296***	0.269***	0.291***	0.274***
	(0.0495)	(0.0468)	(0.0490)	(0.0474)
1940 OA pop × EZ	-0.188**	-0.163**	-0.214***	-0.195***
	(0.0812)	(0.0768)	(0.0735)	(0.0704)
R^2	0.091	0.147	0.142	0.189
N	10,805	10,805	10,805	10,805
Additional ED controls	N	Y	N	Y
Other race gradients	N	N	Y	Y

Notes: Each observation is an enumeration district and is weighted by the total 1940 population of that district. Addition controls include: city dummies, distance from the central business district, median LIDO score, percent foreign born, percent recent immigrant, and the percent with a high school education. All controls are measured in 1940. Other race gradients include the White, Black, Chinese, and Japanese populations in 1940 and their interactions with the exclusion zone indicator. Statistical significance: $*p < 0.1$, $**p < 0.05$, $p***< 0.01$.

C Testing the Common Gradient Assumption

The previous analysis assumes that, in the absence of internment, the 1950 Japanese population of Japantowns would have evolved similarly to how the Chinese population evolved in Chinatowns. More formally, we assume that the 1950 population of a given Asian group in enumeration districts is a linear function of its 1940 population, and that in the absence of internment, these functions would share identical parameters.

This assumption is untestable for the 1940s, but it can be tested for earlier periods. Unfortunately, precisely testing this assumption requires digitized pre-1940 enumeration district maps, which we lack for our cities. However, we can approximate this test.

Although enumeration district maps change from one census to the next, city boundaries remain relatively stable, and ethnic enclaves show high persistence in their locations within cities. Therefore, if we select enumeration districts in the top decile of Japanese population shares in any census year, we can be highly confident these districts encompass Japantown regardless of how the enumeration district maps are drawn. We repeat this procedure for the Chinese population. This approach allows us to test whether the Japanese population in a given decile in one census year is a linear function of the Japanese population in the same decile in the next census year. We can then determine if this gradient is consistent between Japanese and Chinese Americans.

We apply this method to three cities with substantial Japanese and Chinese populations: Los Angeles, San Francisco, and Seattle. In each city, from 1910 to 1940, we find that the population in a given decile for Asian groups is approximately a linear function of the decile's population from the previous census year. Additionally, the population gradients are remarkably similar for Japanese and Chinese Americans.

Figure C.1: Japanese American population share

