The Impact of the Chinese Exclusion Act on the U.S. Economy *

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Abstract

This paper examines the economic effects of the 1882 Chinese Exclusion Act, which banned Chinese immigration to the United States, across U.S. counties between 1860 and 1940. The Act reduced the size of the Chinese population and employment in all major economic sectors, and lowered the quality of jobs among the Chinese who remained. Contrary to the expectations of its proponents, the Act also reduced the employment and income of white workers, both native and foreign born ones, and had sharp negative effects on manufacturing and agriculture. The negative impact of the Act was concentrated in the western United States, where the majority of Chinese immigrants lived in 1880, and persisted until at least 1940.

Keywords: Immigration, Growth, Productivity
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1 Introduction

In 1882, the U.S. government enacted the first ban of voluntary immigration of an entire group based on the country of origin or ethnicity. The Chinese Exclusion Act banned individuals born in China from entering the United States and existing Chinese on U.S. soil from re-entering the country or obtaining citizenship. The Act was widely popular in the United States. A central motivation was economic, as many believed that reducing the number of Chinese immigrants would relax resource constraints and improve economic opportunities for white workers. This economic motivation was reinforced by xenophobic fears of the "yellow peril" and strategic political considerations. Indeed, supporting the Act likely increased politicians' popularity among the non-Chinese population, and came at the cost of losing very few, if any, votes, since the Chinese-born individuals were less than 1% of total U.S. population at the time.

The economic impact of the Exclusion Act is *ex ante* ambiguous, even for white workers.[1] On the one hand, it can reduce economic competition from Chinese immigrants, thereby raising wages and employment among white workers. On the other hand, it can lower overall economic prosperity because of the loss of labor and skills, especially if Chinese and white workers are complements in production. Although Chinese workers were a negligible share of the U.S. population at the time, they often represented a non-trivial segment of the workforce in several western counties. Hence, whether the net effect of the Act was positive or negative is an empirical question.

Perhaps surprisingly, very little is know about the impact of the Act on non-Chinese workers and aggregate economic production. In this paper, we seek to fill this gap, evaluating the effects of the Exclusion Act on U.S. economic development as well as on population size, employment, and income of Chinese, white, and all groups. We estimate a *difference-in-differences* (DD) regression, combining: variation in the implementation of the Act over time; and, cross-county variation in the intensity of treatment from differences in the size of the Chinese population share prior to the Act. Specifically, we compare the evolution of economic outcomes, before and after the Chinese Exclusion Act, between counties with the 1880 Chinese population share above and below the sample median.

To account for time invariant differences across counties, we include county fixed effects. To control for changes over time that affect all counties within a state similarly,

[1] In 1880, 92% of the population in the western U.S. was white.

we include state by Census decade fixed effects. Since many earlier Chinese immigrants worked on the Transcontinental railroad and mining, the baseline estimates also control for whether a county was connected to a railroad, and for whether it ever had a mine interacted with decade fixed effects. Causal inference assumes that, conditional on the controls, the economic outcomes of interest would have evolved along parallel trends in counties with a high and a low historical presence of Chinese.

The analysis proceeds as follows. First, we examine the effects of the Act on the Chinese. Consistent with historical narratives that the Act stopped new immigration from China and caused many Chinese workers to leave the U.S., we find that the Act dramatically reduced the size of the Chinese population and labor force. The decline in labor supply occurred in all major sectors – manufacturing, mining, railroads and agriculture – and involved both skilled and unskilled workers. Moreover, the Act led to a steep decline in the income of Chinese workers.[2]

Second, we examine the non-Chinese and total population. We find that the Act had negative effects for all other workers – white and non-white. The Act had a negative impact on population size, labor supply and incomes in all major economic sectors and across skill levels. We do not find positive effects on any economic outcome for any group of workers. Thus, our analysis suggests that the Act worsened the economic well-being of all workers in the western U.S. Our estimates are quantitatively large: relative to counties with below-median 1880 Chinese share, counties with above-median share experienced an approximate decline of 40% in total population and 50% in total labor force.

The dynamic estimates show that there are no pre-trends, and the trend-break occurs soon after the introduciton of the Act. This supports the parallel trends assumption and reduces concerns that our estimates are confounded by spurious correlations. The dynamic estimates also show that the effects persisted over time, until the end of our sample in 1940.

We conduct several additional robustness checks to address the concern of potentially confounding influences from omitted variables. First, we document that results are unchanged if we control for the impact of the Exclusion Act on adjacent counties. This addresses the concern that the main estimates are confounded by geographic spillovers and relocation from counties with high 1880 Chinese share to low 1880 Chinese share.[3]

[2]The U.S. Census of Population did not collect wages prior to 1940. We follow the literature (Abramitzky et al., 2014), and proxy for income using occupational income scores, which assign to an individual the median income of his job category in 1950.

[3]For example, our estimates may be biased if the Act induced labor or firms to move from counties with high pre-Act Chinese population shares to counties with low pre-Act Chinese population shares.

Second, we show that our estimates are robust to the inclusion of interactions between year dummies and a large number of pre-Act county features. The latter include the 1880 share of non-Chinese immigrants, 1880 population, and 1880 labor force in manufacturing and in agriculture. These robustness exercises address the concern that the 1880 Chinese population share was correlated with other characteristics that influenced long-run economic growth. Finally, in order to assuage concerns that our estimates may be driven by specific observations, we omit counties with 1880 shares of Chinese population at the extreme tails of the distribution, and replicate the analysis by excluding San Francisco county from our sample. We present additional robustness tests in the Appendix.

One of the interesting features of the context we study is the structural transformation away from agriculture towards manufacturing. During the early parts of this transformation, rural productivity grew faster than urban productivity (Eckert and Peters, 2022). To understand how this interacts with the exclusion of the Chinese, we compare counties in the eastern United States, which had virtually no Chinese immigrants in 1880, to otherwise similar counties in the U.S. West that had a Chinese share in 1880 above the sample median. We find that these eastern counties did not experience the same decline as their western analogues after the Act. In contrast, they prospered and grew.

To shed more light on the economic impact of the dramatic demographic change due to the Chinese Exclusion Act, we examine economic production and other indicators of performance. We find that the Act reduced manufacturing output and wages, the number of manufacturing establishments, and the number of mines. This suggests that the depopulation triggered by the Act led to the closure of entire manufacturing and mining establishments, which is consistent with our finding that the Act reduced the number of people working in all sectors and of all skill levels.

We also find that the Act reduced the average value of agricultural inputs: farm land, livestock, and farm machinery, as well as the use of fertilizers. One interpretation for these results is that depopulation reduced demand for agricultural goods (food), thereby lowering the value of agricultural inputs – land, livestock and capital. Another possibility is that the Act reduced the quality of farm land, since Chinese workers were important contributors to complex land improvement projects (e.g., drainage of swamps).[4]

Taken together, the results show that the Chinese Exclusion Act did not lead to any tangible improvement in the economic circumstances of other workers. In fact, the opposite happened, as the loss of skilled and unskilled Chinese workers triggered a cascade

[4]Chang (2003) discusses instances of Chinese workers draining swamps and conducting other engineering activities, often along railroads, that improved farmland.

of negative economic effects for the economy at large. Our findings imply that Chinese labor was a complement to the labor of natives and other groups. The magnitudes of our findings might be specific to the context of our study. However, the key insight that the loss of economically productive immigrant labor can lead to negative economic consequences if immigrants complement natives is generalizable.

Our paper provides empirical evidence that reducing immigration worsens the economic outcomes of native workers and the overall economy. As such, we add to the large empirical literature studying the impact of immigration on a wide range of outcomes, with some papers finding negligible or positive effects on natives' outcomes (e.g., Card, 2001; Card 2009; Ottaviano and Peri 2012; Chassambouli and Peri 2015; Foged and Peri 2016; Sequeira et al. 2020; Tabellini, 2020) and others finding negative effects (e.g., Borjas 2003; Borjas 2005). Our findings also contribute to the literature that studies the effects of in- and out-migration on overall economic activity, productivity, and growth (Burchardi et al., 2020; Chaney and Hornbeck, 2016; Desmet et al., 2018; Peters, 2021).

In addition, we complement a growing literature that evaluates the impact of immigration restrictions on internal migration, natives' outcomes, and on the aggregate economy. Abramitzky et al. (2022) and Clemens et al. (2018) find that the Immigration Acts of the 1920s and the end of the Bracero program in 1964, respectively, did not benefit native workers in any meaningful way. Our results are consistent with, though stronger than, those in these works, as we document that the Chinese Exclusion Act had a steep, negative effect for all workers (including native whites). In this respect, our findings resonate with those obtained by Moser and San (2019), who show that the immigration quotas of the 1920s lowered American science and invention, not only by excluding foreign born scientists but also reducing productivity of the native born ones.

Finally, our paper is related to a recent strand of the literature that analyzes the effects of the Chinese Exclusion Act on the economic and social assimilation of Chinese immigrants and their descendants (Chen and Xie, 2020; Chen, 2015).[5]

The rest of the paper is organized as follows: Section 2 discusses the historical background. Section 3 presents the empirical strategy. Section 4 describes the data. Section 5 presents the results. Section 6 offers concluding remarks.

[5]Since our first draft in January 2022, we have learned about a related study by Hoi (2022), who examines the impact of the Act on directly exposed native workers. Our focus is broader, as we consider not only directly exposed, but all workers, and study the effects of Chinese exclusion on several economic indicators – from labor supply to income and wages to productivity – and across sectors.

2 Historical Background

2.1 Chinese Immigrants Before 1882

The Act was the first U.S. policy that banned voluntary immigration of an entire group, and effectively kept Chinese immigration at negligible levels until the Immigration and Nationality Act of 1965. Chinese immigrants first arrived in large numbers to the United States in the 1850s during California's gold rush. From 1870 to 1880, a total of 138,941 Chinese immigrants entered the U.S., which made up around 4.3% of all immigrants during the period (Lee, 2003, p.25). Like other immigrants, the Chinese sought better economic opportunities and a chance to escape political chaos at home. In China, opportunities for upward mobility were limited by the official examination system and widespread corruption (Chang 2003, pp. 7-9). The Opium Wars (1839-1842, 1856-1860) and the Taiping Rebellion (1850-1864) furthered caused tremendous suffering – famine, poverty – and turmoil (Spence 1990, pp. 168-175). Although the Qing government opposed its citizens leaving the country, it did little to stop emigration in practice. Emigrants left mostly through the southern port of Guangzhou (Canton) and arrived to California.

To come to America, most Chinese immigrants were in one way or another dependent on the Six Companies, an organization of Chinese merchants in America (Spence 1990, p. 205). In exchange for organization fees, the Six Companies would arrange for a number of services for Chinese immigrants, including temporary lodging, basic healthcare, and assurances that their remains would be sent back to China in the event of an untimely death. In addition, for those who did not have the money to make the voyage to America, which was around six times the average Chinese per capita income at the time, the Six Companies would loan them the money under a form of labor debt contract (Cloud and Galenson 1987,Galenson 1984).[6] It was common for families and villages to pool together their money to send one person to the United States, who would then use the saved earning to bring over other (Chang 2003, p. 18). The organization of the emigration process led Chinese immigrants in the U.S. to having strong social networks, which likely contributed to their success in building businesses.

Since the main port of entry in the United States on the West Coast was San Francisco, most Chinese lived in California and gradually diffused to other nearby states. The

[6]The Six Companies had an agreement with steamship companies such that the companies would not sell a ship ticket to a Chinese person unless they could produce a certificate from the Six Companies stating that they had repaid their debt. As most Chinese immigrants during this time intended to return home after accumulating some wealth, this was usually a good enough incentive for people to not run away after coming to America (Cloud and Galenson 1987)

Chinese made up around a quarter of all immigrants in California in 1880, followed by the Irish (22%) and the Germans (14%). Most immigrants from China were men. Many were young and single. Those who were married did not bring their spouses with them when they first arrived.

In 1880, about a quarter of the Chinese were employed in some sort of mining. Agriculture and laundering services were the next largest employers of Chinese people, accounting for another ten percent each. Although initially many Chinese came to the US to work on the construction of the First Transcontinental Railroad, its completion in 1869 meant that by 1880 the rail industry only accounted for about 4.5% of Chinese employment. Chinese immigrants comprised of both skilled and unskilled workers. They often – but not exclusively – worked in establishments owned and managed by other Chinese immigrants. Chinese manufacturers of shoes and hats, cigars, for example, dominated the sector in the Western U.S. during this period.

The demand for Chinese labor was very high from American employers. They were seen as a valuable and low cost source of skilled and unskilled labor by mining companies. Experience in railroad construction and mining gave Chinese men useful skills for other large engineering projects. For example, good at dynamiting and transporting large masses of materials, the Chinese built much of the roads along the north Pacific Coast in the 1870s and 1880s. Chinese workers were able to complete physically arduous and complex tasks such as the drainage of agricultural lands and the construction of other land-improvement infrastructure. These were projects that the U.S. government was previously unable to complete because of the lack of willing and able workers. They also worked in lumber mills and made up a significant portion of the labor force in salmon canneries (Pfaelzer, 2008, p. 140). Chinese businesses and workers were seen a key source of tax revenue for local governments, which had few sources of funds during this period. The Chinese were also strategically taxed higher than other workers (Kanazawa 2005).

2.2 Anti-Chinese Sentiments and the Chinese Exclusion Act

Hostility towards the Chinese grew as more and more Chinese arrived and a widespread economic depression during the 1870s made jobs scarce (Pfaelzer, 2008). The Chinese were popularly perceived as unskilled or low skilled labor, and many were concerned that Chinese workers took employment opportunities away from and competed down the wages for other workers. Historians estimate that there were four workers per every job in 1871 in California, but Chinese workers were producing 50-75% of the state's boots and shoes; and in 1882, 50-75% of farm labor in some counties was Chinese (Chan, 1986, p. 51-78).

Many of the concerns focused on the welfare of white native workers, though hostility was also widespread among European immigrants (Chang 2003, pp. 116-7).

Economic concerns were accompanied by xenophobia. Many worried about the influence of Chinese immigrants on American culture. The Chinese were typically not Christian, spoke little English, dressed in traditional Chinese robes, and wore their hair in the traditional Manchu queue as mandated by the Qing dynasty. These stark differences led many Americans to believe that a so-called "Yellow Peril" was threatening western civilization.[7] There was a widespread belief among Americans that *all* Chinese women were prostitutes. This view was supported by the American establishment. For example, the American Medical Association conducted a study seeking to link Chinese women to higher rates of venereal disease. Despite finding no substantive evidence to support that hypothesis, the association's president still claimed that "... even boys eight and ten years old have been syphilized by these degraded wretches..." (Chang 2003, p. 123).

The combination of fears about economic competition and xenophobic sentiments, exemplified by nativist groups such as the Know-Nothings (Higham, 2002), led Congress to pass the Chinese Exclusion Act in 1882. The Act barred all Chinese people from entering the United States, except under very special circumstances (e.g., official diplomats). In addition to the restrictions on new Chinese immigrants, an amendment to the Act in 1884 expanded its scope, banning people of Chinese descent from entering the country. A further amendment in 1888 prevented immigrants arrived prior to the Act from re-entering the United States.

In practice, these legislative changes meant that no new Chinese could arrive and those who were already in the U.S. could never see their families again, unless they left the United States. Chinese remaining in the U.S. also faced increasing discrimination both through formal and informal channels. For example, the Act prevented Chinese immigrants from becoming naturalized citizens in the same way that the right had been offered to European immigrants, while local governments passed legislation that confiscated the property of the Chinese. There were also many instances of mob violence against the Chinese. These forces led many of the Chinese who stayed to live together in urban areas, where they could organize and better protect themselves. It was during this period that the first "China Town" appeared in San Francisco (in 1900).

[7] One early proponent of excluding the Chinese, Senator John F. Miller, in a speech to his fellow senators in 1881, called upon them to: "...[preserve] American Anglo-Saxon civilization without contamination or adulteration ... [from] the gangrene of oriental civilization... Why not discriminate? Why aid in the increase and distribution over ... our domain of a degraded and inferior race, and the progenitors of an inferior sort of men?" (Chang 2003, p. 130)

The Chinese Exclusion Act was initially viewed as a temporary ten-year measure. It was renewed for ten more years in 1892 with the Geary Act, and then renewed indefinitely in 1902. During the early 20th century, growing anti-immigrant sentiments developed to the point where a more far-reaching immigration restriction was passed by Congress, which, in 1917, introduced a literacy requirement and barred Southeast Asians, South Asians, and Middle Eastern people (those from the so-called "Asiatic Barred Zone") from immigrating to the United States (Goldin, 1994). In 1921 and then, more permanently, in 1924, a new ban introduced a quota on immigration, and fully banned Asian immigrants (Abramitzky and Boustan, 2017). Only in 1943, when China became America's ally in World War II, Congress finally repealed the Exclusion Act. But even then, Chinese immigration was still limited to a mere 105 people a year. It was not until the Immigration and Nationality Act of 1965 that Chinese immigrants were allowed to move to the United States in large numbers again (Lee, 2003, Ch. 3).

3 Empirical Strategy

The Chinese Exclusion Act drastically reduced the number of Chinese living in the United States. This might have had positive or negative effects for other workers, depending on the characteristics of the excluded individuals and on the degree of complementarity (or substitutability) between immigrant labor and other workers in the economy. On the one hand, the mainstream perception (among native whites) at the time was that Chinese immigrants were mostly low-skilled labor and competed with other workers. If this was true, the Act should have increased economic opportunities for other workers, especially unskilled ones. On the other hand, the Act may have depleted the Western United States of much needed (skilled and unskilled) labor, inducing firms to shut down, and causing long term negative economic consequences across many sectors. In other words, if Chinese and other workers were complements in production, the Act may have hurt other workers.

Our study aims to capture the net effect of the positive and negative forces. We examine the population, labor force, and earnings of Chinese and other workers. We also consider several measures of aggregate economic performance across sectors. To estimate the impact of the Chinese Exclusion Act, we implement a *difference-in-differences* (DD) strategy, and compare outcomes in counties that had 1880 Chinese population shares above and below the sample median (4%) before and after the 1882 Exclusion Act. The empirical strategy assumes that the ban of Chinese immigrants results in a higher loss of Chinese workers – i.e., a higher intensity treatment effect – for counties with more Chinese

immigrants prior to the ban. The baseline specification is the following:

$$Y_{ijt} = \alpha + \beta(HighChineseShare_{i,1880} \times 1\{t > 1882\}) + \Gamma X_{ijt} + \varphi_i + \xi_{jt} + \nu_{ijt} \quad (1)$$

where the outcome of interest in county i state j and year t, Y_{ijt}, is a function of: the interaction of a dummy variable that takes the value of one if the 1880 Chinese population share is above the sample median, $Chinese_{i,1880}$, and an indicator variable equal to one if the time period is after 1882; a vector of controls, X_{ijt}; county fixed effects, φ_i; and state-year fixed effects, ξ_{jt}. Standard errors are clustered at the county level.[8]

Since the Census data is observed in each decade except for 1890, the pre-post comparison of outcomes observed in 1880 or earlier versus those observed in 1900 or later includes the effect of all the follow-up legislation that occurred between 1884 and 1900 discussed in the previous section.[9]

County fixed effects control for time invariant differences across counties, such as distance to the San Francisco port. State-year fixed effects control for changes over time that affect all counties within a state similarly. This addresses the fact that economic transformation might have differed across states in ways that may be correlated with both the 1880 Chinese share and the economic outcomes of interest.

Our preferred specification also controls for whether a county was connected to a railroad in a given year and whether there was ever a mine in the county during 1850–1940. Since the latter is a time invariant measure, we interact it with year fixed effects.[10] These controls address the potential concern that the first waves of Chinese immigrants worked in mining and railroad construction, and that the economic development of these sectors may have affected the outcomes of interest even absent the Act. Moreover, the presence of a railroad can affect long run economic development for many other reasons unrelated to the Act (Donaldson and Hornbeck, 2016; Hornbeck and Rotemberg, 2021).

The main coefficient of interest is β. The identification assumption is that, absent the Act, the outcomes of interest would have evolved along parallel trends between counties with high and low 1880 Chinese population shares. In other words, we assume that conditional on fixed effects and controls, the interaction of 1880 Chinese population share in the county and the post-1882 dummy variables is uncorrelated with the error term. We

[8] To address the fact that county boundaries changed over time, we follow standard approaches in the literature (Perlman, 2016), fixing them to 1930.

[9] The 1890 U.S. Census was destroyed by a fire. As noted below, though, we were able to recover a handful of outcomes (e.g., total population) for this year using different sources.

[10] We were unable to find systematic disaggregated data on the presence of mines that varied over time.

will provide evidence to support this assumption after presenting our results. Below, we also show that our findings are robust to interacting additional 1880 variables with year fixed effects, to further relax the parallel trends assumption.

4 Data

Most of our data come from the U.S. decennial censuses for the period from 1860 to 1940, made available by the Integrated Public Use Microdata Series (Ruggles et al., 2021). In addition, we use county-aggregates from the Census of Manufacturing and of Agriculture (Haines, 2010; Haines and Rhode, 2018).

The historical data reports each individual's nativity (including that of the parents), country of origin, and race. We define someone to be Chinese if their country of birth is China or if their race is Chinese. Given that Chinese immigrants started arriving in the 1850s, race and country of origin are synonymous for most Chinese adults in the U.S. in 1880. In later censuses, it is possible that U.S. born children from a parent who is Chinese and a parent who is another race choose to report her race as the other race. We will address this by examining the dynamic effects and showing a sharp change in the outcomes immediately after the Act, when this is less likely to be an issue. Moreover, inter-marriage between Chinese and other races was very low during this period.[11] Finally, such classification problem does not affect the interpretation of aggregate outcomes (or those of native white workers).

Our main sample includes the states where the Chinese population is above 1% of the total population in 1880: Arizona, California, Idaho, Montana, Nevada, Oregon, Washington, and Wyoming. When analyzing economic outcomes, such as labor supply and earnings, we further restrict attention to working age men (ages 15 to 64).[12]

We define $HighChineseShare$ to be a dummy equal to 1 if the 1880 share of Chinese individuals in county i is above the sample median (4%).

Figure 1 plots the population of Chinese immigrants and non-Chinese immigrants in the United States by decade: prior to the Chinese Exclusion Act, both populations grew in a roughly linear fashion. After the Act, the non-Chinese population continued to grow in a roughly linear fashion, while the Chinese population reversed trend. Figure 2 maps the spatial distribution of Chinese in 1880 across the counties in our sample, with darker colors corresponding to a higher Chinese share. The map shows that there was significant

[11] Over the time period 1870–1940, only 1.7% of married Chinese had a non-Chinese spouse.

[12] Results are unchanged if we use the entire U.S. and/or if we include women.

variation across counties within states in the western part of the country.

Tables 1 and 2 present descriptive statistics for the main variables for all counties in our sample (Panel A), and for the subsample of counties with high (Panel B) and low (Panel C) 1880 Chinese population share. On average, only 2% of the total population of our sample is Chinese. A comparison of the means in Panels B and C shows that there is little difference in baseline characteristics between counties with a high and low 1880 Chinese population share.

5 Results

5.1 Population and Labor Supply

We begin by presenting results for Chinese immigrants in Table 3. Columns (1) and (3) of Panel A show that the Exclusion Act drastically reduced the size of the (log) Chinese population and labor force. The coefficients, which are statistically significant at the 1% level, are -1.51 and -1.58, respectively. This implies that, after the Act, a county with 1880 Chinese population share above the median had a Chinese population and labor force approximately 80% lower than a county with 1880 Chinese share below the median.[13] Column (2) suggests that the Act also reduced the share of urban Chinese population, although the point estimate is smaller than for total population, and standard errors are large. Next, in columns (4) to (7), we examine the effects of the Act on the size of the (log) Chinese labor force in each of the major sectors – manufacturing, mining, railroads, and agriculture. In all cases, coefficients are negative and, except for agriculture, they are statistically significant at the 1% or 5% level.

In Panel B, we examine the number of Chinese workers by skill level. The Act had a negative impact on average literacy (column 1), reduced the (log) number of both skilled and unskilled Chinese workers (columns 2 and 3), as well as that of Chinese managers and proprietors (column 4).[14] In column (5), we show that the Act lowered (log) occupational income scores of Chinese workers.[15] This suggests that the Act not only reduced the

[13] Given that the dependent variable is in log, the magnitude of the coefficients can be calculated as follows: $\%\Delta y = 100 \cdot (e^{\beta} - 1)$.

[14] Skill groups are defined based on individuals' reported occupation following Katz and Margo (2014). In particular, skilled workers include: professionals, managers, craftsmen, clerical and sales occupations. Unskilled occupations include: operatives, laborers, and service workers (both private household and non-household). These groups omit workers employed in agriculture.

[15] As noted above, the U.S. Census did not collect wages prior to 1940. We thus use occupational income scores, which assign to an individual the median income of his job category in 1950 and are often interpreted as a proxy for life-time income.

number of Chinese workers, but also pushed the Chinese who remained in the U.S. in lower paid occupations.

In Tables 4 and 5, we turn to white and overall population and labor force. [16] Results are strikingly similar to those for Chinese immigrants. Panel A shows that the Exclusion Act had a large, negative effect on population and labor force. This was true for all sectors, including agriculture (where, instead, the Act had no effect for Chinese workers). As for Chinese immigrants, while the coefficient for share of urban population is negative, it is not statistically significant at conventional levels (column 2).[17] Moreover, as for Chinese immigrants, the Act reduced labor supply across all skill groups, lowered the number of managers and proprietors, and led to a decline in occupational income scores. Table A.2 presents analogous estimates for non-Chinese immigrant population.

Figures 3 and 4 examine the dynamic effects of the Chinese Exclusion Act, plotting coefficients (with corresponding 95% confidence intervals) from an equation similar to the baseline, where the 1880 Chinese share dummy is interacted with year fixed effects (rather than with the post-1882 dummy), and using 1880 as omitted category. In Figure 3, we consider population for Chinese, white natives, white non-natives and all individuals. Reassuringly, and supporting the parallel trends assumption, we find no evidence of pre-trends. Turning to the post-1880 period, we instead observe an immediate decline in the first decade after the Act.[18] Interestingly, the negative effects of the Act keep unfolding until 1920. Since then, population and labor supply remain well below their 1880 level through 1940, for both Chinese immigrants and the county as a whole. This suggests that the exclusion of Chinese immigrants had persistent effects on the economy of Western U.S. counties. Figure 4 presents similar trends for occupational income scores for the same four groups of workers.

Taken together, results in this section show that the Chinese Exclusion Act significantly reduced the number of workers from all races, all sectors and all skill levels. Moreover, the reduction in occupational income score implies that, on average, all workers were worse off. The reduction in the number of managers is consistent with an overall reduction of production (e.g., shutting down factories or factory lines) or a reorganization

[16] Variables are defined in the same way as in Table 3

[17] Note that the point estimates for total population and labor force are smaller (in absolute value) than those in Table 3. However, since total population and workforce are larger than those of the Chinese, the implied effect of the Act on population size and on overall labor supply was quantitatively larger for non-Chinese workers.

[18] As noted above, the first year after the Exclusion Act is 1900 for labor force, as the 1890 U.S. Census was destroyed in a fire. However, since data on population (total and by ethnic group) can be obtained also from Haines (2010), for population regressions, the first post-Act year is 1890.

of production (e.g., reducing the number of managers per worker). We investigate this more in the next section.

The fact that labor force for all races declined in manufacturing, mining, and railroads is consistent with Chinese workers being complements to natives and workers of other races in production. In this sense, it is interesting to note that the Act had little effect on Chinese workers in agriculture, but nonetheless reduced the number workers from other races in the sector. There exist at least two, non-mutually exclusive, explanations for this. The first one is that the decline in total population reduced demand for food production from nearby areas. The second one is that the Chinese were critical in land improvement projects such as draining swamps, such that the Act reduced the amount of arable land. Data limitations prevent us from examining this directly. However, below we examine farm land value and other agricultural variables.

5.2 Aggregate Economic Outcomes

To shed more light on the drivers of the results estimated in Section 5.1, we begin by examining the impact of the Exclusion Act on the manufacturing sector, and present results in Panel A of Table 6.[19] Column (1) focuses on (the log of) average wages, which are reported at the county level and cannot be disaggregated by nativity or race. The negative coefficient indicates that the Act reduced average manufacturing wages. Column (2) documents that, in line with the decline in the number of workers we found earlier, (the log of) total manufacturing output declined as well. The estimates are statistically significant at the 1% level, and suggest that, after the Act, manufacturing wages and output were, respectively, 11% and 60% lower in a county with the 1880 Chinese population share above median, compared to a county with the 1880 Chinese population share below the median.

Column (3) shows that, after the Act, counties with the 1880 Chinese share above median had 61% less establishments than counties with 1880 Chinese share below median. Since the 1880 average number of establishments per county was 35, this implies that, after the Act, counties with 1880 Chinese population share above the median had approximately 21 fewer establishments than counties with 1880 Chinese population share below the median. The estimate in column (4) indicates that there is no change in the number of workers per establishment, consistently with the results of column (3) and of Table 5, showing that labor supply fell in all sectors (including manufacturing). These results,

[19] The number of observations differs from that in the main sample above because data from the Census of Manufacturing is not available for all counties and years.

together with our earlier findings on the reduction in workers of all sectors and skill levels, suggest that the Act and the subsequent exodus of Chinese workers led to the closure of factories.

Next, in column (5), we turn to the mining sector, which, as of 1880, employed approximately 24% and 12% of the Chinese and the total population in our sample. Since we do not have detailed data on mining output, we use an admittedly crude proxy for whether there is any mine in a county during each decade. This is a dummy variable that equals one if county i in year t has a share of labor force in mining above the sample median. The negative coefficient (statistically significant at the 1% level) suggests that the Act reduced the presence of mines across U.S. counties. Again, this resonates with historical accounts of mine owners expressing concerns that the loss of Chinese labor would force them to shutter their mines.

We have so far shown that the Chinese Exclusion Act had a negative effect on labor supply in all sectors, and reduced productivity and output in manufacturing as well as the probability that counties had active mines. In Panel B of Table 6, we turn to the agricultural sector. As shown above, while the Act had no effect on Chinese labor supply in agriculture, it reduced that of other workers in this sector (Tables 4 and 5). Consistent with the overall drop in labor supply in agriculture, column (1) documents that the Act lowered the (log of the) value of farm land. Columns (2) to (5) show that the Act reduced the (log) value of livestock, the (log of the) value of farm machinery, and (log) average expenditures on fertilizer. The estimates are statistically significant at the 1% level in columns (2) and (4), and at the 5% level in column (5). One interpretation for these results is that the Act lowered the demand for farm products, and led to a corresponding reduction in the value of farm inputs. Another possibility, not in contrast with the previous one, is that the Chinese Exclusion Act reduced the quality of farm land (e.g., from the loss of Chinese workers doing major land improvement), since other inputs are likely to complement land.

Figures 5 and 6 present the dynamic estimates. As in Section 5.1, we find no evidence of pre-trends and we observe a sudden decline in all outcomes from 1890 onwards.

5.3 Robustness Tests

An important caveat to the interpretation of our estimates is the possibility of geographic spillovers and spatial relocation. For instance, if the Act caused workers and economic activity to move from counties with a high Chinese share in 1880 to counties with a low Chinese share, our results might be confounded by such relocation effect. We address

this concern by interacting the average 1880 Chinese share in adjacent counties with our main independent variable. The logic is that, since moving costs increase with distance, on average, workers and firms should be more likely to relocate to nearby counties. Thus, if our results capture relocation to other surrounding counties that have a low Chinese share, controlling for Chinese share in those areas should attenuate our negative findings. Reassuringly, Table 7 shows that the main interaction estimates remain unchanged.[20]

The dynamic estimates reported in Figures 3–6 support the parallel trends assumption, and assuage concerns that our results may be driven by spurious correlations. Nevertheless, one may still be concerned that the 1880 location of Chinese immigrants is correlated with other factors that might influence economic development. For this reason, in Table 8, we replicate our main analysis controlling for the 1880 share of non-Chinese immigrants interacted with year fixed effects (Panel I) and controlling for the 1880 population, and labor force in manufacturing and agriculture, interacted with year fixed effects (Panel II). Moreover, we drop counties with a Chinese population share above or below the 1st and the 99th percentiles (Panel III), or omit San Francisco county (Panel IV). Reassuringly, results are in line with those reported in Tables 3–6.[21]

In addition, in Table A.3 we replicate the main results by including also women in the sample, while in Tables A.4 and A.5 we estimate population-weighted regressions in Panel A, and use Conley (1999) adjusted standard errors to account for potential spatial correlation in Panel B. In all cases, results remain similar to the ones presented in Sections 5.1 and 5.2. In Table A.6, we also verify that results are unchanged when interacting year fixed effects with: *i)* a measure of county market access (Hornbeck and Rotemberg, 2021) measured in 1870; *ii)* distance to New York, the main port of entry for European immigrants; and, *iii)* a dummy equal to one if a county had ever received a homestead until 1880.

Finally, another concern is that our results may be due to pure chance, especially given the limited number of counties part of our main sample. We address this by randomly permuting the independent variable, $HighChineseShare_{i,1880}$, across counties 1,000 times. This allows us to simulate results from randomly assigning whether a county had a share of Chinese population in 1880 above or below the median, and compare the distribution of these estimates to the actual ones presented in Sections 5.1 and 5.2. Figure A.1 shows that our estimates are unlikely to be generated by chance.

[20]Results, not shown for brevity, are similar when replacing the average Chinese share in adjacent counties with that calculated over other counties in the same state.

[21]Results, not reported for brevity, are also robust to interacting year dummies with many other variables, such as 1880 population density, manufacturing output, farm value, and geographic coordinates.

5.4 Placebo Exercise

As noted in the Introduction, allowing counties to be on differential trends based on the size of their 1880 agricultural employment is particularly important because, between 1880 and 1920, the U.S. economy experienced structural transformation, which led to stronger wage and employment growth in initially rural counties (Eckert and Peters, 2022). Panel II of Table 8 reduces concerns that our estimates pick up the spurious correlation between agricultural employment and Chinese settlements in 1880. To more directly tackle this concern, we perform a placebo exercise, focusing on non-Western counties.

Specifically, we first select the best predictors of the Chinese immigrant share in our Western counties using a LASSO procedure.[22] Then, we use these variables to predict the 1880 Chinese immigrant share in non-Western counties, where the actual Chinese population was virtually zero. Finally, we replicate our baseline specification on this sample. Results, reported in Table 9, indicate that non-Western counties with a high (predicted) Chinese share in 1880 did not experience a decline in labor force, manufacturing output and number of establishments, or value of farm land. If anything, the opposite is true, suggesting that counties outside of the West with a higher (predicted) Chinese share had higher, rather than lower, growth potentials. These patterns are inconsistent with the possibility that the 1880 Chinese immigrants share were negatively correlated with the baseline agricultural share, *and* that this correlation is responsible for the decline in economic activity estimated in our main analysis above.

6 Conclusion

The Chinese Exclusion Act of 1882 was introduced both to respond to xenophobic sentiments of the time and to protect the economic livelihoods of white and native workers from Chinese immigrants, who were thought to exert negative pressure on the wages of low skilled workers. However, our analysis shows that the Act failed to achieve its economic goals. Chinese workers were employed in occupations of all skill levels at the time of the Act. Their *en-mass* departure led to an across-the-board economic decline.

[22]LASSO selects the following variables: proxy for mine, non-Chinese immigrant share, employment share in agriculture, mining, railroads, and manufacturing, and the interaction between distance from a major port (San Francisco for the West, New York City for the non-West sample) and a dummy indicating whether the county is connected to the railroad. The variables not selected are: distance from ports, total population, population density, rural population share, average occupational income score, share of literate individuals, manufacturing output, value of farm land, a dummy indicating whether the county is connected to the railroad, and the interaction between the latter and the proxy for having a mine.

Manufacturing establishments and mines closed, agricultural land and inputs decreased in values, wages declined, and the population and labor supply of all groups diminished.

Our findings support the notion, discussed by a recent literature, that the Exclusion Act was responsible for the retardation of economic growth in the U.S. West. They are also consistent with the growing body of empirical studies showing the value of immigrants to early 20th century economic growth in the United States (Sequeira et al. 2020; Ager and Hansen, 2017; Moser and San 2019) and documenting that immigration restrictions often failed to increase employment and wages among native workers (Abramitzky et al., 2022; Clemens et al., 2018).

References

Abramitzky, R., Ager, P., Boustan, L., Cohen, E., and Hansen, C. (2022). The Effect of Immigration on Local Labor Markets: Lessons from the 1920s Border Closure. *American Economic Journal: Applied*.

Abramitzky, R. and Boustan, L. P. (2017). Immigration in american economic history. *Journal of Economic Literature*, 55(4):1311–1345.

Abramitzky, R., Boustan, L. P., and Eriksson, K. (2014). A Nation of Immigrants: Assimilation and Economic Outcomes in the Age of Mass Migration. *Journal of Political Economy*, 122(3):467–506.

Ager, P. and Hansen, C. (2017). Closing Heaven's Door: Evidence from the 1920s U.S. Immigration Quota Acts. Discussion papers of business and economics, University of Southern Denmark, Department of Business and Economics.

Borjas, G. (2003). The Labor Demand Curve is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market. *The Quarterly Journal of Economics*, 118(4):1335–1374.

Borjas, G. (2005). The labor-market impact of high-skill immigration. *American Economic Review*, 95(2):56–60.

Burchardi, K. B., Chaney, T., Hassan, T. A., Tarquinio, L., and Terry, S. J. (2020). Immigration, innovation, and growth. Technical report, National Bureau of Economic Research.

Card, D. (2001). Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration. *Journal of Labor Economics*, 19(1):22–64.

Card, D. (2009). Immigration and Inequality. *American Economic Review*, 99(2):1–21.

Chan, S. (1986). *This Bittersweet Soil: The Chinese in California Agriculture, 1860-1910*. Chinese in California Agriculture, 1860-1910. University of California Press.

Chaney, E. and Hornbeck, R. (2016). Economic dynamics in the malthusian era: evidence from the 1609 spanish expulsion of the moriscos. *The Economic Journal*, 126(594):1404–1440.

Chang, I. (2003). *The Chinese in America : a narrative history*. Viking New York.

Chassambouli, A. and Peri, G. (2015). The Labor Market Effects of Reducing the Number of Illegal Immigrants. *Review of Economic Dynamics*, 18(4):792–821.

Chen, J. (2015). The Impact of Skill-Based Immigration Restrictions: The Chinese Exclusion Act of 1882. *Journal of Human Capital*, 9(3):298 – 328.

Chen, S. and Xie, B. (2020). Institutional discrimination and assimilation: Evidence from the chinese exclusion act of 1882.

Clemens, M. A., Lewis, E. G., and Postel, H. M. (2018). Immigration restrictions as active labor market policy: Evidence from the mexican bracero exclusion. *American Economic Review*, 108(6):1468–87.

Cloud, P. and Galenson, D. (1987). Chinese immigration and contract labor in the late nineteenth century. *Explorations in Economic History*, 24(1):22–42.

Conley, T. G. (1999). GMM estimation with cross sectional dependence. *Journal of econometrics*, 92(1):1–45.

Desmet, K., Nagy, D. K., and Rossi-Hansberg, E. (2018). The geography of development. *Journal of Political Economy*, 126(3):903–983.

Donaldson, D. and Hornbeck, R. (2016). Railroads and american economic growth: A âmarket accessâ approach. *The Quarterly Journal of Economics*, 131(2):799–858.

Eckert, F. and Peters, M. (2022). Spatial structural change. Working Paper 30489, National Bureau of Economic Research.

Foged, M. and Peri, G. (2016). Immigrants' Effect on Native Workers: New Analysis on Longitudinal Data. *American Economic Journal: Applied Economics*, 8(2):1–34.

Galenson, D. (1984). The Rise and Fall of Indentured Servitude in the Americas: An Economic Analysis. *The Journal of Economic History*, 44(1):1–26.

Goldin, C. (1994). The political economy of immigration restriction in the united states, 1890 to 1921. In *The regulated economy: A historical approach to political economy*, pages 223–258. University of Chicago Press.

Haines, Michael, F. P. and Rhode, P. (2018). United States Agriculture Data, 1840 - 2012. https://doi.org/10.3886/ICPSR35206.v4. Inter-university Consortium for Political and Social Research.

Haines, M. R. (2010). Historical, Demographic, Economic, and Social Data: The United States, 1790-2002 [dataset]. https://doi.org/10.3886/ICPSR02896.v3. Inter-university Consortium for Political and Social Research.

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

Hoi, D. (2022). The Hinge of the Golden Door: Labor Market Impacts of Immigrant Exclusion. Working paper.

Hornbeck, R. and Rotemberg, M. (2021). Railroads, market access, and aggregate productivity growth. *University of Chicago Booth School of Business, mimeo*.

Kanazawa, M. (2005). Immigration, Exclusion, and Taxation: Anti-Chinese Legislation in Gold Rush California. *The Journal of Economic History*, 65(3):779–805.

Katz, L. F. and Margo, R. A. (2014). Technical change and the relative demand for skilled labor: The united states in historical perspective. In *Human capital in history: The American record*, pages 15–57. University of Chicago Press.

Lee, E. (2003). *At America's Gates: Chinese Immigration During the Exclusion Era, 1882-1943*. University of North Carolina Press.

Moser, P. and San, S. (2019). Immigration, science, and invention: Evidence from the 1920s quota acts. *Unpublished manuscript*.

Ottaviano, G. and Peri, G. (2012). Rethinking the Effect of Immigration on Wages. *Journal of the European Economic Association*, 10(1):152–197.

Perlman, E. R. (2016). *Connecting the periphery: three papers on the developments caused by spreading transportation and information networks in the nineteenth century United States*. PhD thesis, Boston University.

Peters, M. (2021). Market size and spatial growth-evidence from germanyâs post-war population expulsions. Technical report, National Bureau of Economic Research.

Pfaelzer, J. (2008). *Driven Out: The Forgotten War Against Chinese Americans*. University of California Press.

Ruggles, S., Flood, S., Foster, S., Goeken, R., Pacas, J., Schouweiler, M., and Sobek, M. (2021). IPUMS USA: Version 11.0 [dataset]. https://doi.org/10.18128/D010.V11.0. IPUMS.

Sequeira, S., Nunn, N., and Qian, N. (2020). Immigrants and the Making of America. *Review of Economic Studies*, 87(1):382–419.

Spence, J. D. (1990). *The search for modern China*. W.W. Norton '|&' Co New York.

Tabellini, M. (2020). Gifts of the immigrants, woes of the natives: Lessons from the age of mass migration. *The Review of Economic Studies*, 87(1):454–486.

Tables

Table 1: Summary Statistics: Chinese Population and Labor Force

	A. All Counties			B. 1880 Chinese Share >= Median			C. 1880 Chinese Share < Median		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
A. Chinese Population 1880									
Chinese Population Share	231	0.06	0.08	115	0.12	0.09	116	0.01	0.01
using race definitition only	231	0.06	0.08	115	0.12	0.09	116	0.01	0.01
using country of origin definition only	231	0.06	0.08	115	0.11	0.09	116	0.01	0.01
Age	209	30.94	4.25	115	32.27	3.55	94	29.30	4.47
Male Share	209	0.95	0.07	115	0.96	0.06	94	0.95	0.07
Chinese/All Immigrant	231	0.21	0.18	115	0.35	0.16	116	0.08	0.07
B. Chinese Labor Force 1880 (Men 15-64 Only)									
Chinese/All LF	231	0.12	0.12	115	0.21	0.11	116	0.03	0.03
Chinese/All Mfg	224	0.06	0.12	115	0.09	0.15	109	0.02	0.05
Chinese/All Mining	201	0.22	0.29	112	0.32	0.31	89	0.10	0.19
Chinese/All Railroad	173	0.21	0.30	98	0.26	0.33	75	0.15	0.25
Chinese/All Agric	231	0.02	0.04	115	0.04	0.06	116	0.01	0.01
Chinese/All Skilled	231	0.03	0.05	115	0.05	0.07	116	0.00	0.01
Chinese/All Unskilled	231	0.23	0.19	115	0.38	0.16	116	0.09	0.08
Chinese/All Managers	231	0.05	0.08	115	0.09	0.10	116	0.01	0.02
Chinese/All Literate	231	0.10	0.10	115	0.17	0.10	116	0.02	0.03

Notes: Observations are at the county and year level. The data are from U.S. Census of 1880.

Table 2: Summary Statistics: Population, Labor Force, and Economic Outcomes

	A. All Counties			B. 1880 Chinese Share >= Median			C. 1880 Chinese Share < Median		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
A. Population									
Total Population	1,854	21,188.42	97,559.85	945	19,927.97	54,748.91	909	22,498.78	127,687.26
Urban Share	1,854	0.16	0.24	945	0.18	0.26	909	0.14	0.21
Immigrant Share	1,852	0.20	0.11	943	0.23	0.12	909	0.17	0.09
Age	1,641	28.05	3.33	839	28.80	3.28	802	27.26	3.20
Male Share	1,641	0.60	0.08	839	0.62	0.08	802	0.59	0.08
White Share	1,852	0.93	0.10	943	0.92	0.09	909	0.94	0.11
Chinese Share	1,854	0.02	0.05	945	0.04	0.06	909	0.01	0.01
Other Races Share	1,641	0.05	0.09	839	0.04	0.06	802	0.06	0.11
B. Labor Force (Men 15-64 Only)									
Total Labor Force	1,641	7,579.19	32,164.88	839	7,352.50	19,638.70	802	7,816.32	41,408.17
Mfg. Share of Labor Force	1,641	0.10	0.10	839	0.11	0.10	802	0.09	0.10
Mining Share of Labor Force	1,641	0.10	0.15	839	0.13	0.17	802	0.06	0.10
Railroad Share of Labor Force	1,641	0.05	0.07	839	0.05	0.07	802	0.05	0.07
Agric. Share of Labor Force	1,641	0.37	0.20	839	0.32	0.19	802	0.42	0.19
Share Skilled	1,641	0.25	0.10	839	0.25	0.10	802	0.24	0.09
Share Unskilled	1,641	0.36	0.17	839	0.41	0.17	802	0.31	0.15
Share Managers	1,641	0.06	0.03	839	0.07	0.02	802	0.06	0.03
Share Literate	1,410	0.94	0.08	724	0.94	0.06	686	0.93	0.09
C. Productivity									
Income Score	1,641	20.72	2.75	839	21.37	2.68	802	20.05	2.67
Mfg. Total Output	1,476	148,893.51	948,468.07	757	153,196.02	651,739.47	719	144,363.62	1,183,537.93
Value of Farm Land	1,240	163,082.51	337,723.53	625	164,076.89	294,784.96	615	162,071.97	376,619.51
Connected to Railroad	1,611	0.65	0.48	833	0.66	0.47	778	0.63	0.48

Notes: Observations are at the county and year level. The data are from U.S. Censuses between 1860 and 1940.

Table 3: Effect on Chinese Individuals

	Dependent Variable						
	A. Population and Labor Force Participation						
	Pop. Total	Urban Share	LF Total	LF Mfg.	LF Mine	LF Rail	LF Agric.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent Variable Mean	*3.432*	*0.257*	*3.037*	*0.669*	*0.804*	*0.445*	*1.232*
– in 1880	*4.282*	*0.0500*	*4.182*	*1.201*	*1.890*	*1.044*	*1.608*
Post x High Chinese Share	-1.51***	-0.06	-1.58***	-0.31**	-1.45***	-0.30***	-0.13
	(0.24)	(0.04)	(0.23)	(0.15)	(0.23)	(0.11)	(0.17)
Observations	1,819	1,407	1,611	1,611	1,611	1,611	1,611
	B. Worker Skill Level and Income						
	Share Literate	Skilled	Unskilled	Managers	Income Score		
Dependent Variable Mean	*0.779*	*1.438*	*2.754*	*1.203*	*3.002*		
– in 1880	*0.717*	*1.482*	*4.094*	*1.144*	*2.973*		
Post x High Chinese Share	-0.05*	-0.94***	-1.55***	-0.70***	-0.13***		
	(0.03)	(0.20)	(0.22)	(0.19)	(0.03)		
Observations	1,213	1,611	1,611	1,611	1,368		

Notes: Observations are at the county and year level. The dependent variables in Panel A are the log of total population (col. 1), the share of urban population (col. 2), the log of the total labor force (col. 3), or the log of the labor force in the sector stated in the column headings (col. 4 - col. 7). The dependent variables in Panel B are the share of literate (col. 3), the log of total number of workers in the skill category stated in the column headings (col. 4 - col. 6), or the log of the occupational income score (col. 7). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data are from full count U.S. Censuses between 1860 and 1940. Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Effect on White Individuals

	Dependent Variable											
			Labor Supply									
	Pop	Urban Share	Total	Mfg.	Mining	Railroad	Agric.	Share Literate	Skilled	Unskilled	Managers	Income Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	A. White											
Dependent Variable Mean	*8.652*	*0.169*	*7.722*	*5.101*	*4.037*	*3.892*	*6.536*	*0.955*	*6.311*	*6.543*	*4.951*	*3.080*
– in 1880	*7.491*	*0.0498*	*6.649*	*3.928*	*3.323*	*1.821*	*5.510*	*0.933*	*5.019*	*5.531*	*3.674*	*3.028*
Post x High Chinese Share	-0.41***	-0.02	-0.54***	-0.51**	-0.68***	-0.67***	-0.39***	-0.02***	-0.60***	-0.71***	-0.62***	-0.04***
	(0.14)	(0.03)	(0.16)	(0.21)	(0.23)	(0.20)	(0.14)	(0.01)	(0.17)	(0.17)	(0.17)	(0.01)
Observations	1,817	1,611	1,611	1,611	1,611	1,611	1,611	1,385	1,611	1,611	1,611	1,611
	B. White Natives											
Dependent Variable Mean	*8.436*	*0.169*	*7.386*	*4.761*	*3.634*	*3.525*	*6.225*	*0.976*	*6.049*	*6.120*	*4.654*	*3.092*
– in 1880	*7.222*	*0.0479*	*6.198*	*3.450*	*2.771*	*1.561*	*5.130*	*0.947*	*4.618*	*4.993*	*3.243*	*3.030*
Post x High Chinese Share	-0.37**	-0.02	-0.47***	-0.50**	-0.55**	-0.57***	-0.32**	-0.02***	-0.57***	-0.62***	-0.61***	-0.04***
	(0.14)	(0.03)	(0.16)	(0.20)	(0.22)	(0.20)	(0.14)	(0.01)	(0.17)	(0.17)	(0.17)	(0.01)
Observations	1,817	1,611	1,611	1,611	1,611	1,611	1,611	1,385	1,611	1,611	1,611	1,610

Notes: Observations are at the county and year level. The dependent variables are the log of total population (col. 1), the share of urban population (col. 2), the log of the total labor force (col. 3), the log of the labor force in the sector stated in the column headings (col. 4 - col. 7), the share of literate (col. 8), the log of total number of workers in the skill category stated in the column headings (col. 9 - col. 11), or the log of the occupational income score (col. 12). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data are from full count U.S. Censuses between 1860 and 1940. Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 5: Effect on All Individuals

	Dependent Variable											
			Labor Supply									
	Pop	Urban Share	Total	Mfg.	Mining	Railroad	Agric.	Share Literate	Skilled	Unskilled	Managers	Income Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	A. All											
Dependent Variable Mean	*8.731*	*0.164*	*7.802*	*5.139*	*4.127*	*3.991*	*6.602*	*0.935*	*6.333*	*6.679*	*4.987*	*3.071*
-- in 1880	*7.581*	*0.0492*	*6.797*	*4.002*	*3.646*	*2.129*	*5.543*	*0.911*	*5.053*	*5.853*	*3.732*	*3.029*
Post x High Chinese Share	-0.49***	-0.01	-0.68***	-0.55***	-0.98***	-0.84***	-0.42***	-0.01	-0.64***	-0.96***	-0.67***	-0.05***
	(0.14)	(0.03)	(0.16)	(0.20)	(0.24)	(0.21)	(0.14)	(0.01)	(0.17)	(0.17)	(0.17)	(0.01)
Observations	1,819	1,819	1,611	1,611	1,611	1,611	1,611	1,385	1,611	1,611	1,611	1,611
	B. All Natives											
Dependent Variable Mean	*8.581*	*0.167*	*7.423*	*4.782*	*3.644*	*3.539*	*6.278*	*0.957*	*6.057*	*6.167*	*4.661*	*3.084*
-- in 1880	*7.243*	*0.0482*	*6.209*	*3.454*	*2.772*	*1.563*	*5.138*	*0.944*	*4.621*	*5.013*	*3.245*	*3.028*
Post x High Chinese Share	-0.39***	-0.02	-0.49***	-0.51**	-0.55**	-0.57***	-0.34**	-0.03*	-0.58***	-0.63***	-0.61***	-0.04***
	(0.14)	(0.03)	(0.15)	(0.20)	(0.22)	(0.20)	(0.13)	(0.01)	(0.17)	(0.16)	(0.17)	(0.01)
Observations	1,611	1,611	1,611	1,611	1,611	1,611	1,611	1,385	1,611	1,611	1,611	1,610

Notes: Observations are at the county and year level. The dependent variables are the log of total population (col. 1), the share of urban population (col. 2), the log of the total labor force (col. 3), the log of the labor force in the sector stated in the column headings (col. 4 - col. 7), the share of literate (col. 8), the log of total number of workers in the skill category stated in the column headings (col. 9 - col. 11), or the log of the occupational income score (col. 12). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data are from full count U.S. Censuses between 1860 and 1940. Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Effect on Manufacturing, Mining, and Agriculture

	Dependent Variable				
	A. Manufacturing				
	Wage	Total Output	# Establ.	Workers/ Establ.	Proxy for Mine
	(1)	(2)	(3)	(4)	(5)
Dependent Variable Mean	*2.824*	*8.942*	*72.11*	*2.063*	*0.676*
-- in 1880	*2.477*	*6.929*	*34.50*	*1.370*	*0.722*
Post x High Chinese Share	-0.12***	-0.91***	-0.93*	-0.02	-1.43***
	(0.04)	(0.27)	(0.52)	(0.10)	(0.54)
Observations	1,411	1,451	1,514	1,419	695
	B. Agriculture				
	Farm Land Value	Livestock Value	# Horses	Machinery Value	Fertilizer Expenditure
Dependent Variable Mean	*10.53*	*9.577*	*5069*	*8.081*	*2.423*
-- in 1880	*8.644*	*8.057*	*2165*	*6.073*	*0.967*
Post x High Chinese Share	-0.35**	-0.52***	-0.06	-0.51***	-0.55**
	(0.14)	(0.14)	(0.11)	(0.14)	(0.25)
Observations	1,214	2,036	1,584	2,036	1,557

Notes: Observations are at the county and year level. The dependent variables in Panel A are the log of average manufacturing wage (col. 1), the log of the total manufacturing output (col. 2), the number of manufacturing establishments (col. 3, Poisson regression), the log of the number of workers per manufacturing establishment (col. 4), or a dummy variable equal to 1 if the share of labor force in mining is above median (col. 5, Logit regression). The dependent variables in Panel B are the log of the value of farm land (col. 1), the log of the value of livestock (col. 2), the number of horses used in farming (col. 3, Poisson regression), the log of the value of farming machinery and equipment (col. 4), or the average expenditure for fertilizers (col. 5). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data for the dependent variables in Panel A columns (1)-(4) are from the *Historical, Demographic, Economic, and Social Data* (ICPSR 2896), and in column (5) from the full count U.S. Censuses, for the years 1860-1940; the data for the dependent variables in Panel B from the United States Agriculture Data (ICPSR 35206), for the years 1860–1940. Monetary amounts are expressed in thousands of 2020 U.S. dollars (deflated using the Minneapolis Fed 1800–2020 CPI). Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: Spillovers to Adjacent Counties

	Dependent Variable						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Avg. Wage	Total Output	#Mfg Est.	Value Farm Land	Value Livestock	Value Machinery	Avg. Exp. Fertilizers
Dependent Variable Mean	*2.823*	*8.915*	*59.75*	*10.54*	9.594	8.090	2.415
-- in 1880	*2.475*	*6.896*	*21.54*	*8.636*	8.057	6.072	0.960
Post x High Chinese Share	-0.10*	-0.89**	-0.90	-0.33**	-0.50***	-0.46***	-0.32
	(0.05)	(0.35)	(0.56)	(0.15)	(0.15)	(0.16)	(0.27)
Post x HCS in Border Counties	-0.06	-0.02	-0.12	-0.06	-0.02	-0.10	-0.48
	(0.06)	(0.36)	(0.35)	(0.17)	(0.17)	(0.19)	(0.32)
Observations	1,397	1,436	1,499	1,203	2,018	2,018	1,543

Notes: Observations are at the county and year level. The dependent variables are the log of average manufacturing wage (col. 1), the log of the total manufacturing output (col. 2), the log of the number of manufacturing establishments (col. 3, Poisson regression), the log of the value of farm land (col. 4), the log of the value of livestock (col. 5), the log of the value of farming machinery and equipment (col. 6), or the average expenditure for fertilizers (col. 7). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data for the dependent variables in columns (1)-(3) are from the *Historical, Demographic, Economic, and Social Data* (ICPSR 2896), for the years 1860-1940; the data for the dependent variables in columns (4)-(8) are from the United States Agriculture Data (ICPSR 35206), for the years 1860–1940. Monetary amounts are expressed in thousands of 2020 U.S. dollars (deflated using the Minneapolis Fed 1800–2020 CPI). Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Robustness Checks: Control for 1880 Variables

		I. Control for Year FE x Other Immigrant Share 1880			II. Control for Year FE x: Population 1880, Mfg LF 1880, Agric LF 1880			III. Omit Top 1% Chinese Share			IV. Omit San Francisco County		
		Post x High Chinese Share		Obs.	Post x High Chinese Share		Obs.	Post x High Chinese Share		Obs.	Post x High Chinese Share		Obs.
	Dependent Variable	Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.	
	A. Chinese LF												
(1)	Total	-1.66***	(0.24)	1,611	-1.53***	(0.23)	1,611	-1.56***	(0.23)	1,597	-1.60***	(0.23)	1,603
(2)	Mfg.	-0.38***	(0.14)	1,611	-0.30**	(0.15)	1,611	-0.32**	(0.15)	1,597	-0.32**	(0.15)	1,603
(3)	Mining	-1.59***	(0.23)	1,611	-1.40***	(0.23)	1,611	-1.44***	(0.23)	1,597	-1.46***	(0.23)	1,603
(4)	Rail	-0.31***	(0.11)	1,611	-0.31***	(0.11)	1,611	-0.30***	(0.11)	1,597	-0.30***	(0.11)	1,603
(5)	Income	-0.14***	(0.03)	1,367	-0.14***	(0.03)	1,367	-0.13***	(0.03)	1,356	-0.13***	(0.03)	1,359
	B. All LF												
(6)	Total	-0.51***	(0.17)	1,611	-0.42***	(0.16)	1,611	-0.55***	(0.16)	1,597	-0.55***	(0.16)	1,603
(7)	Mfg.	-0.46**	(0.23)	1,611	-0.38*	(0.21)	1,611	-0.50**	(0.21)	1,597	-0.51**	(0.21)	1,603
(8)	Mining	-0.69***	(0.25)	1,611	-0.65***	(0.23)	1,611	-0.70***	(0.23)	1,597	-0.68***	(0.23)	1,603
(9)	Rail	-0.53**	(0.22)	1,611	-0.54**	(0.21)	1,611	-0.68***	(0.20)	1,597	-0.66***	(0.20)	1,603
(10)	Income	-0.04***	(0.02)	1,611	-0.04***	(0.01)	1,611	-0.04***	(0.01)	1,597	-0.04***	(0.01)	1,603
	C. Manufacturing												
(11)	Wage	-0.13***	(0.04)	1,411	-0.12***	(0.04)	1,411	-0.12***	(0.04)	1,400	-0.12***	(0.04)	1,403
(12)	Total Output	-0.92***	(0.29)	1,451	-0.77***	(0.27)	1,451	-0.90***	(0.27)	1,440	-0.91***	(0.27)	1,443
(13)	# Establ.	-0.58***	(0.17)	1,514	-0.53***	(0.17)	1,514	-0.58***	(0.16)	1,502	-0.58***	(0.16)	1,506
	D. Agriculture												
(14)	Farm Land Value	-0.26*	(0.14)	1,214	-0.12	(0.13)	1,214	-0.35**	(0.14)	1,204	-0.34**	(0.14)	1,208
(15)	Livestock Value	-0.51***	(0.14)	2,036	-0.45***	(0.13)	2,036	-0.53***	(0.14)	2,019	-0.50***	(0.14)	2,026
(16)	Machinery Value	-0.46***	(0.15)	2,036	-0.39***	(0.14)	2,036	-0.51***	(0.15)	2,019	-0.50***	(0.14)	2,026
(17)	Fertilizer Expenditure	-0.50**	(0.25)	1,557	-0.48*	(0.25)	1,557	-0.55**	(0.25)	1,544	-0.55**	(0.25)	1,550

Notes: Observations are at the county and year level. The dependent variables in Panel A are the log of the total Chinese labor force (row 1), the log of the Chinese labor force in the sector stated (rows 2-4), or the log of the average occupational income score among Chinese individuals (row 5). The dependent variables in Panel B are the log of the total labor force of all individuals (row 6), the log of the labor force in the sector stated of all individuals (rows 7-9), or the log of the average occupational income score among all individuals (row 10). The dependent variables in Panel C are the log of average manufacturing wage (row 11), the log of the total manufacturing output (row 12), or the number of manufacturing establishments (row 13, Poisson regression). The dependent variables in Panel D are the log of the value of farm land (row 14, the log of the value of livestock (row 15), the log of the value of farming machinery and equipment (row 16), or the average expenditure for fertilizers (row 17). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data for the dependent variables in Panel A and B are from the full count U.S. Censuses, for the years 1860-1940. The data for the dependent variables in Panel C are from the *Historical, Demographic, Economic, and Social Data* (ICPSR 2896), for the years 1860-1940; the data for the dependent variables in Panel D are from the United States Agriculture Data (ICPSR 35206), for the years 1860–1940. Monetary amounts are expressed in thousands of 2020 U.S. dollars (deflated using the Minneapolis Fed 1800–2020 CPI). Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

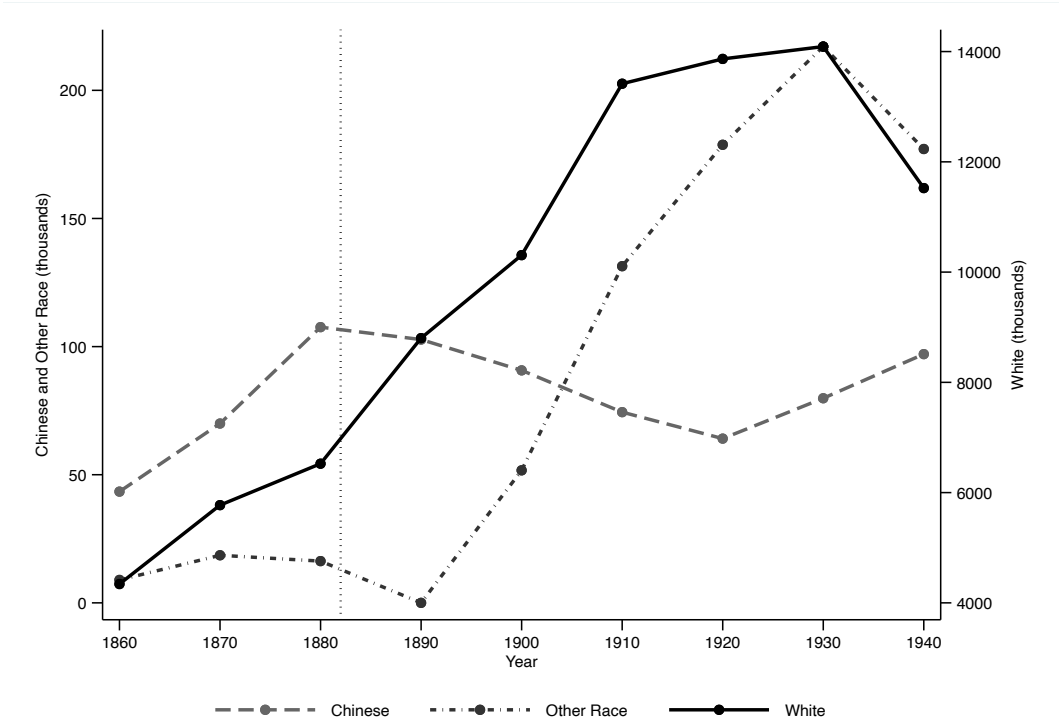
Table 9: Placebo Exercise

	Dependent Variable					
	Chinese LF	All LF	Non-Chinese Immigrants LF	Mfg. Output	#Mfg Est.	Farm Land Value
	(1)	(2)	(3)	(4)	(5)	(6)
	A. Western States (Main Sample)					
Dependent Variable Mean	*3.037*	*7.802*	*6.335*	*8.942*	*72.11*	10.53
-- in 1880	*4.182*	*6.797*	*5.554*	*6.929*	*34.50*	8.644
Post x High Predicted Chinese Share	-1.55***	-0.64***	-0.75***	-1.03***	-0.75*	-0.29*
	(0.22)	(0.14)	(0.16)	(0.26)	(0.43)	(0.15)
Observations	1,611	1,611	1,611	1,451	1,514	1,214
	B. All Other States (Placebo Sample)					
Dependent Variable Mean	*0.387*	*8.172*	*4.780*	*9.198*	*108.8*	11.12
-- in 1880	*0.215*	*7.761*	*4.882*	*7.832*	*94.86*	10.21
Post x High Predicted Chinese Share	0.62***	0.25***	0.23***	0.15	0.69***	0.08
	(0.07)	(0.05)	(0.08)	(0.10)	(0.07)	(0.08)
Observations	20,054	20,054	20,054	18,454	19,078	14,992

Notes: Observations are at the county and year level. The dependent are the log of the total Chinese labor force (col. 1), the log of the total labor force of all individuals (col. 2), the log of the total non-Chinese immigrants labor force (col. 3), the log of the total manufacturing output (col. 4), the number of manufacturing establishments (col. 5, Poisson regression), or the log of the value of farm land (col. 6). The sample in Panel A includes the counties in the main estimation sample; the sample in Panel B includes all the other counties. All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data for the dependent variables are from the full count U.S. Censuses (cols. 1-3), from the Historical, Demographic, Economic, and Social Data (ICPSR 2896) (cols. 4-5), and from the United States Agriculture Data (ICPSR 35206) (col. 6), for the years 1860–1940. Monetary amounts are expressed in thousands of 2020 U.S. dollars (deflated using the Minneapolis Fed 1800–2020 CPI). Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

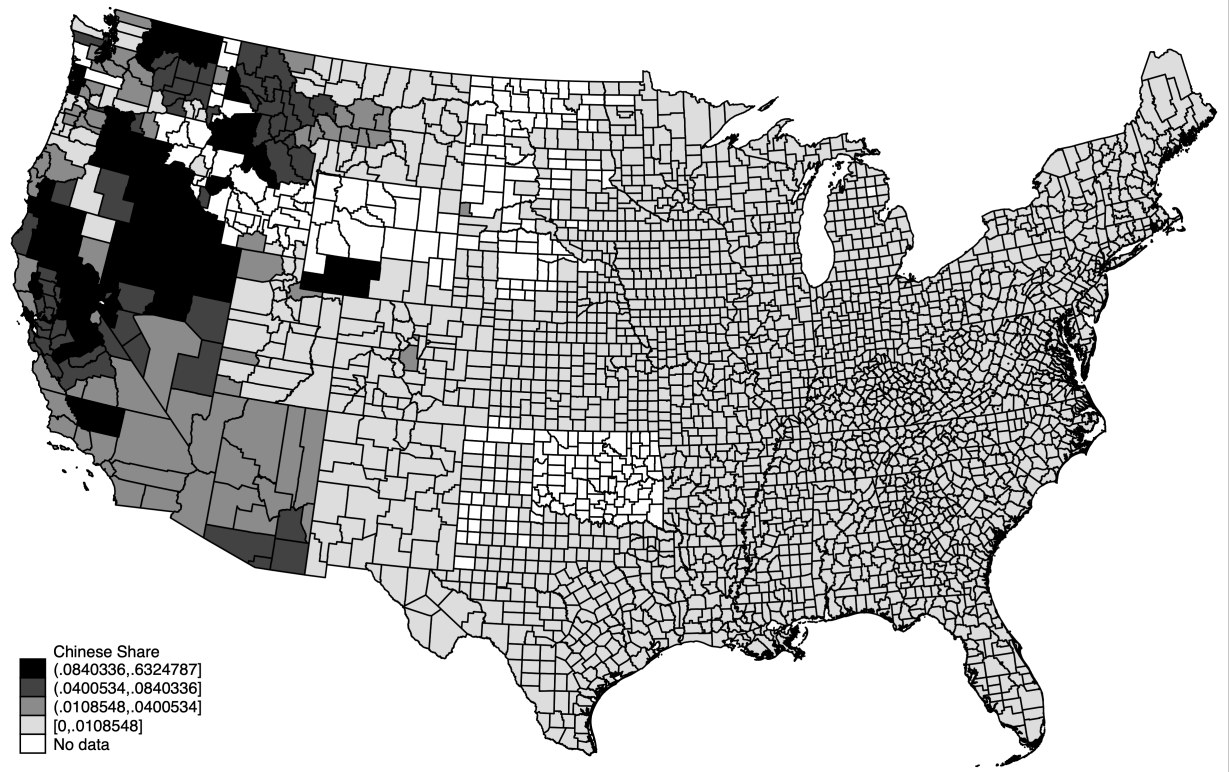
Figures

Figure 1: Evolution of Immigrant Population



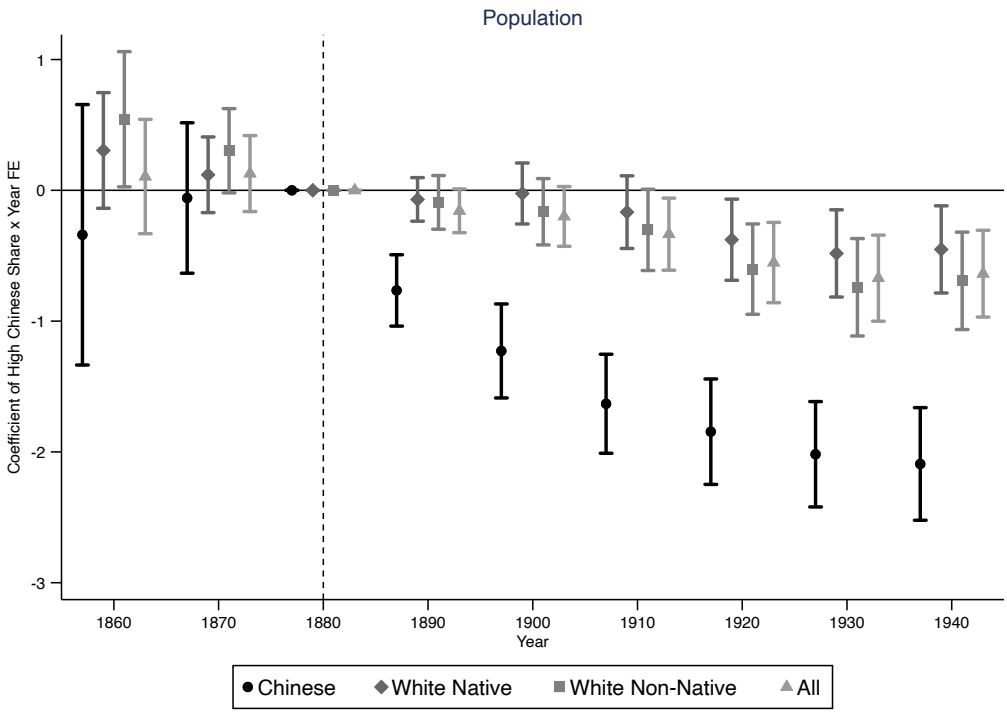
Notes: The figure represents the stock of foreign-born individuals in each census year, by race, in the United States. The data are from the full count U.S. Census between 1860 and 1940.

Figure 2: Spatial Distribution of Chinese in 1880



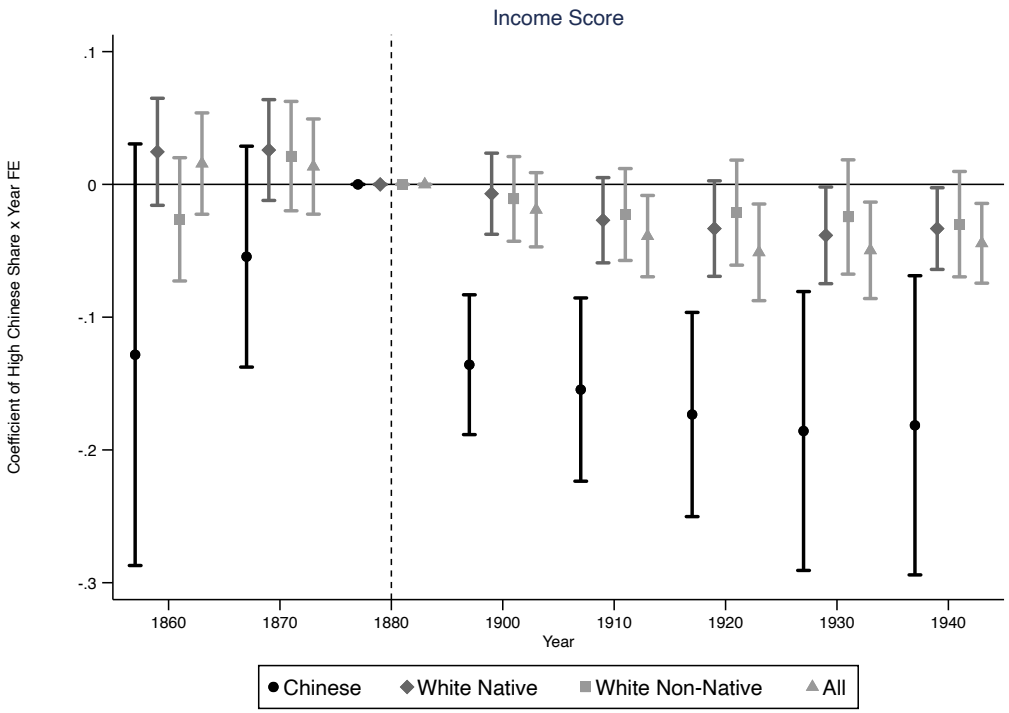
Notes: The map represents the 1880 share of Chinese population across U.S. counties. Different colors represent the quartiles of the distribution of Chinese share in the main estimation sample (as described in Section 4). Lighter colors indicate lower shares, darker colors indicate higher shares.

Figure 3: Dynamic Effect on Population



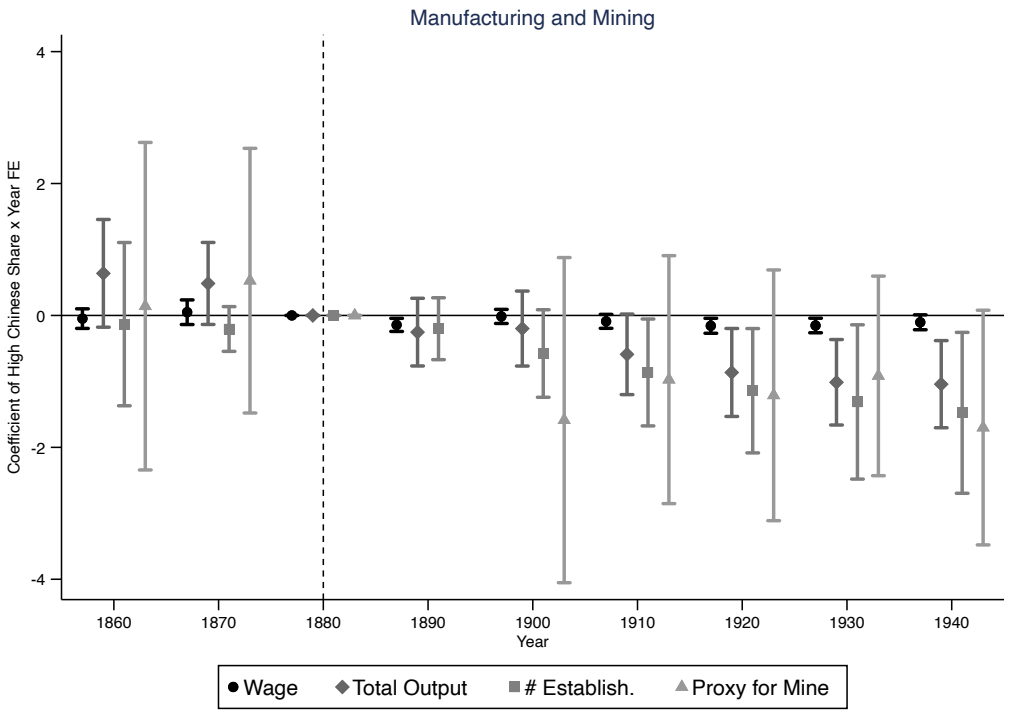
Notes: Observations are at the county and decade level. The dependent variable is the log of population The independent variables are the 1880 Chinese share interacted with a vector of time dummy variables. Vertical lines are 95% confidence intervals based on standard errors clustered at the county level. The regression controls for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1870-1940 interacted with decade fixed effects, and county and state-by-decade fixed effects. The data are from the full count U.S. Population Census between 1860 and 1940 (except for the year 1890, where only county-aggregate measures are available).

Figure 4: Dynamic Effect on Occupational Income Score



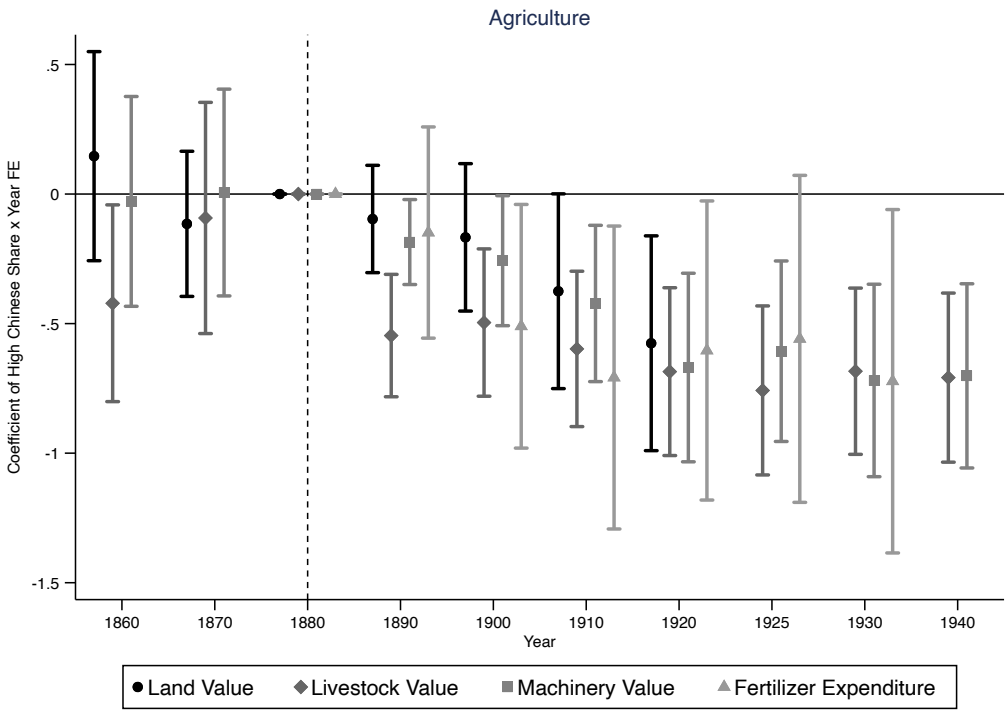
Notes: Observations are at the county and decade level. The dependent variable is the log of population The independent variables are the 1880 Chinese share interacted with a vector of time dummy variables. Vertical lines are 95% confidence intervals based on standard errors clustered at the county level. The regression controls for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with decade fixed effects, and county and state-by-decade fixed effects. The data are from the full count U.S. Population Census between 1860 and 1940.

Figure 5: Dynamic Effect on Manufacturing and Mining



Notes: Observations are at the county and decade level. The dependent variables are the log of occupational income score. The independent variables are the 1880 Chinese share interacted with a vector of time dummy variables. Vertical lines are 95% confidence intervals based on standard errors clustered at the county level. The regression controls for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1870-1940 interacted with decade fixed effects, and county and state-by-decade fixed effects. The data are from the full count U.S. Population Census and from the Census of Manufacturing between 1860 and 1940. Missing values for county i at time t are linearly interpolated if data for county i are available for both $t-1$ and $t+1$.

Figure 6: Dynamic Effect on Agriculture



Notes: Observations are at the county and decade level. The dependent variables are the log of occupational income score. The independent variables are the 1880 Chinese share interacted with a vector of time dummy variables. Vertical lines are 95% confidence intervals based on standard errors clustered at the county level. The regression controls for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1870-1940 interacted with decade fixed effects, and county and state-by-decade fixed effects. The data are from the full count U.S. Population Census and from the Census of Agriculture between 1860 and 1940. Missing values for county i at time t are linearly interpolated if data for county i are available for both $t-1$ and $t+1$.

Appendix

Table A.1: Summary Statistics: Population, Labor Force, and Economic Outcomes (1880)

	A. All Counties			B. 1880 Chinese Share >= Median			C. 1880 Chinese Share < Median		
	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.	Obs.	Mean	Std. Dev.
A. Population 1880									
Total Population	231	5,555.64	16,520.05	115	8,067.20	22,760.61	116	3,065.72	4,440.89
Urban Share	231	0.05	0.15	115	0.07	0.19	116	0.02	0.08
Immigrant Share	231	0.27	0.12	115	0.33	0.12	116	0.21	0.09
Age	231	25.96	2.23	115	26.76	2.27	116	25.16	1.89
Male Share	231	0.67	0.08	115	0.68	0.07	116	0.66	0.09
White Share	231	0.92	0.09	115	0.87	0.09	116	0.97	0.04
Chinese Share	231	0.06	0.08	115	0.12	0.09	116	0.01	0.01
Other Races Share	231	0.01	0.03	115	0.01	0.02	116	0.02	0.04
B. Labor Force 1880 (Men 15-64 Only)									
Total Labor Force	231	2,251.64	6,267.85	115	3,431.57	8,625.44	116	1,081.88	1,431.12
Mfg. Share of Labor Force	231	0.07	0.07	115	0.08	0.09	116	0.07	0.06
Mining Share of Labor Force	231	0.13	0.16	115	0.19	0.18	116	0.07	0.10
Railroad Share of Labor Force	231	0.02	0.05	115	0.03	0.06	116	0.01	0.02
Agric. Share of Labor Force	231	0.34	0.18	115	0.29	0.16	116	0.39	0.18
Share Skilled	231	0.18	0.07	115	0.18	0.07	116	0.19	0.08
Share Unskilled	231	0.42	0.17	115	0.51	0.16	116	0.34	0.14
Share Managers	231	0.05	0.04	115	0.05	0.02	116	0.06	0.06
Share Literate	231	0.91	0.07	115	0.90	0.06	116	0.92	0.07
C. Productivity 1880									
Income Score	231	19.84	2.56	115.00	20.55	2.15	116.00	19.14	2.73
Mfg. Total Output	231	15,847.88	137,911.46	115.00	28,330.14	194,946.08	116.00	3,473.23	7,440.80
Value of Farm Land	231	39,611.16	83,175.07	115.00	51,148.49	98,918.71	116.00	28,173.29	62,219.67
Connected to Railroad	226	0.39	0.49	114.00	0.46	0.50	112.00	0.32	0.47

Notes: Observations are at the county and year level. The data are from U.S. Censuses of 1880.

Table A.2: Effect on Non-Chinese Immigrant Individuals

	Dependent Variable											
			Labor Supply									
	Pop	Urban Share	Total	Mfg.	Mining	Railroad	Agric.	Share Literate	Skilled	Unskilled	Managers	Income Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dependent Variable Mean	*6.917*	*0.164*	*6.335*	*3.722*	*2.942*	*2.952*	*5.085*	*0.906*	*4.703*	*5.317*	*3.495*	*3.044*
– in 1880	*5.926*	*0.0549*	*5.554*	*3.063*	*2.728*	*1.168*	*4.247*	*0.905*	*3.911*	*4.595*	*2.715*	*3.036*
Post x High Chinese Share	-0.69***	-0.03*	-0.72***	-0.49***	-0.63***	-0.50***	-0.55***	-0.02***	-0.65***	-0.84***	-0.63***	-0.02**
	(0.09)	(0.02)	(0.09)	(0.11)	(0.12)	(0.11)	(0.08)	(0.01)	(0.09)	(0.10)	(0.09)	(0.01)
Observations	1,611	1,610	1,611	1,611	1,611	1,611	1,611	1,384	1,611	1,611	1,611	1,610

Notes: Observations are at the county and year level. The dependent variables are the log of total population (col. 1), the share of urban population (col. 2), the log of the total labor force (col. 3), the log of the labor force in the sector stated in the column headings (col. 4 - col. 7), the share of literate (col. 8), the log of total number of workers in the skill category stated in the column headings (col. 9 - col. 11), or the log of the occupational income score (col. 12). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data are from full count U.S. Censuses between 1860 and 1940. Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.3: Robustness Check: Include Women in Sample

	Labor Supply									
	Total	Mfg.	Mining	Railroad	Agric.	Share Literate	Skilled	Unskilled	Managers	Income Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
					A. Chinese					
Dependent Variable Mean	*3.064*	*0.679*	*0.805*	*0.447*	*1.238*	*0.773*	*1.467*	*2.776*	*1.222*	*2.999*
-- in 1880	*4.197*	*1.208*	*1.890*	*1.045*	*1.612*	*0.708*	*1.522*	*4.109*	*1.199*	*2.971*
Post x High Chinese Share	-1.60***	-0.32**	-1.45***	-0.30***	-0.14	-0.06**	-0.94***	-1.56***	-0.73***	-0.12***
	(0.24)	(0.15)	(0.23)	(0.11)	(0.17)	(0.03)	(0.20)	(0.22)	(0.19)	(0.03)
Observations	1,611	1,611	1,611	1,611	1,611	1,215	1,611	1,611	1,611	1,375
					B. White					
Dependent Variable Mean	*7.836*	*5.165*	*4.048*	*3.911*	*6.569*	*0.953*	*6.498*	*6.710*	*5.097*	*3.072*
-- in 1880	*6.732*	*3.962*	*3.325*	*1.825*	*5.519*	*0.924*	*5.224*	*5.638*	*4.127*	*3.054*
Post x High Chinese Share	-0.56***	-0.51**	-0.68***	-0.67***	-0.39***	-0.03***	-0.63***	-0.73***	-0.66***	-0.04***
	(0.16)	(0.21)	(0.23)	(0.20)	(0.14)	(0.01)	(0.17)	(0.17)	(0.17)	(0.01)
Observations	1,611	1,611	1,611	1,611	1,611	1,385	1,611	1,611	1,611	1,611
					C. All					
Dependent Variable Mean	*7.916*	*5.211*	*4.139*	*4.009*	*6.636*	*0.930*	*6.519*	*6.845*	*5.132*	*3.063*
-- in 1880	*6.875*	*4.036*	*3.647*	*2.134*	*5.551*	*0.905*	*5.259*	*5.940*	*4.180*	*3.051*
Post x High Chinese Share	-0.69***	-0.56***	-0.97***	-0.84***	-0.42***	-0.02	-0.67***	-0.97***	-0.70***	-0.05***
	(0.16)	(0.20)	(0.24)	(0.21)	(0.14)	(0.01)	(0.17)	(0.17)	(0.17)	(0.01)
Observations	1,611	1,611	1,611	1,611	1,611	1,385	1,611	1,611	1,611	1,611

Notes: Observations are at the county and year level. The dependent variables are the log of the total labor force (col. 1), the log of the labor force in the sector stated in the column headings (col. 2 - col. 5), the share of literate (col. 6), the log of total number of workers in the skill category stated in the column headings (col. 7 - col. 9), or the log of the occupational income score (col. 10). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data are from full count U.S. Censuses between 1860 and 1940. Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.4: Robustness Checks: Population-Weighted Regressions and Conley Standard Errors (LF Outcomes)

	Dependent Variable									
	Chinese					All				
	LF Total	LF Mfg.	LF Mining	LF Railroad	Income Score	LF Total	LF Mfg.	LF Mining	LF Railroad	Income Score
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	A. Population Weighted Regressions									
Post x High Chinese Share	-1.28***	-0.41	-1.57***	-0.47*	-0.13***	-0.83**	-0.90**	-1.46***	-0.97***	-0.05**
	(0.40)	(0.42)	(0.35)	(0.24)	(0.04)	(0.32)	(0.40)	(0.41)	(0.34)	(0.02)
Observations	1,611	1,611	1,611	1,611	1,367	1,611	1,611	1,611	1,611	1,611
	B. Conley (1999) Standard Errors, 100km Distance Cutoff									
Post x High Chinese Share	-1.58***	-0.31**	-1.45***	-0.30**	-0.13***	-0.68***	-0.55***	-0.98***	-0.84***	-0.05***
	(0.17)	(0.13)	(0.19)	(0.13)	(0.03)	(0.10)	(0.13)	(0.16)	(0.15)	(0.01)
Observations	1,611	1,611	1,611	1,611	1,368	1,611	1,611	1,611	1,611	1,611

Notes: Observations are at the county and year level. The dependent variables are the log of the total labor force (cols. 1 and 6), the log of the labor force in the sector stated in the column headings (cols. 2-4 and 7-9), or the log of the occupational income score (cols. 5 and 10). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data are from full count U.S. Censuses between 1860 and 1940. Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.5: Robustness Checks: Population-Weighted Regressions and Conley Standard Errors (Economic Outcomes)

	Dependent Variable						
	Manufacturing			Agriculture			
	Wage	Total Output	# Establ.	Farm Land Value	Livestock Value	Machinery Value	Fertilizer Expenditure
	(1)	(2)	(3)	(4)	(6)	(7)	(8)
	A. Population Weighted Regressions						
Post x High Chinese Share	-0.19***	-1.09**	-1.85***	-0.68***	-0.83**	-0.69***	-1.20**
	(0.04)	(0.43)	(0.69)	(0.25)	(0.38)	(0.23)	(0.51)
Observations	1,411	1,451	1,514	1,214	2,036	2,036	1,557
	B. Conley (1999) Standard Errors, 100km Distance Cutoff						
Post x High Chinese Share	-0.12***	-0.91***	-0.93*	-0.35**	-0.52***	-0.51***	-0.55**
	(0.04)	(0.19)	(0.55)	(0.15)	(0.12)	(0.13)	(0.26)
Observations	1,414	1,453	1,514	1,214	2,036	2,036	1,557

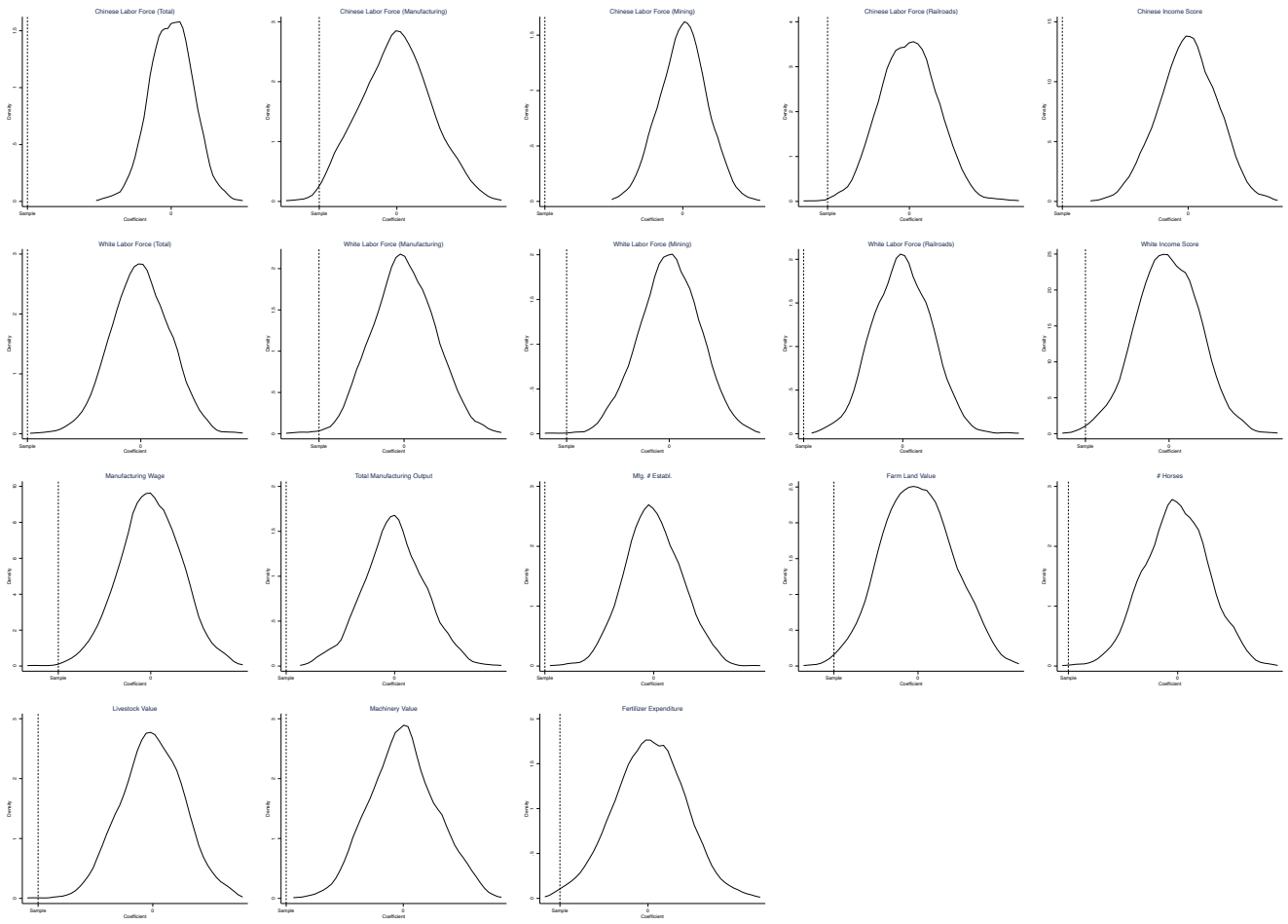
Notes: Observations are at the county and year level. The dependent variables are the log of average manufacturing wage (col. 1), the log of the total manufacturing output (col. 2), the number of manufacturing establishments (col. 3, Poisson regression), the log of the value of farm land (col. 4), the log of the value of livestock (col. 5), the log of the value of farming machinery and equipment (col. 6), or the average expenditure for fertilizers (col. 7). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data for the dependent variables in columns (1)-(3) are from the Historical, Demographic, Economic, and Social Data (ICPSR 2896), and from the United States Agriculture Data (ICPSR 35206) in columns (4)-(8), for the years 1860–1940. Standard errors clustered by county in Panel A, or accounting for spatial correlation (Conley 1999) with 100km distance cutoff in Panel B, are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A.6: Robustness Checks: Control for 1880 Variables

		I. Control for Year FE x Other Immigrant Share 1880			II. Control for Year FE x: Population 1880, Mfg LF 1880, Agric LF 1880			III. Omit Top 1% Chinese Share			IV. Omit San Francisco County		
		Post x High Chinese Share		Obs.	Post x High Chinese Share		Obs.	Post x High Chinese Share		Obs.	Post x High Chinese Share		Obs.
	Dependent Variable	Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.	
	A. Chinese LF												
(1)	Total	-1.66***	(0.24)	1,611	-1.53***	(0.23)	1,611	-1.56***	(0.23)	1,597	-1.60***	(0.23)	1,603
(2)	Mfg.	-0.38***	(0.14)	1,611	-0.30**	(0.15)	1,611	-0.32**	(0.15)	1,597	-0.32**	(0.15)	1,603
(3)	Mining	-1.59***	(0.23)	1,611	-1.40***	(0.23)	1,611	-1.44***	(0.23)	1,597	-1.46***	(0.23)	1,603
(4)	Rail	-0.31***	(0.11)	1,611	-0.31***	(0.11)	1,611	-0.30***	(0.11)	1,597	-0.30***	(0.11)	1,603
(5)	Income	-0.14***	(0.03)	1,367	-0.14***	(0.03)	1,367	-0.13***	(0.03)	1,356	-0.13***	(0.03)	1,359
	B. All LF												
(6)	Total	-0.51***	(0.17)	1,611	-0.42***	(0.16)	1,611	-0.55***	(0.16)	1,597	-0.55***	(0.16)	1,603
(7)	Mfg.	-0.46**	(0.23)	1,611	-0.38*	(0.21)	1,611	-0.50**	(0.21)	1,597	-0.51**	(0.21)	1,603
(8)	Mining	-0.69***	(0.25)	1,611	-0.65***	(0.23)	1,611	-0.70***	(0.23)	1,597	-0.68***	(0.23)	1,603
(9)	Rail	-0.53**	(0.22)	1,611	-0.54**	(0.21)	1,611	-0.68***	(0.20)	1,597	-0.66***	(0.20)	1,603
(10)	Income	-0.04***	(0.02)	1,611	-0.04***	(0.01)	1,611	-0.04***	(0.01)	1,597	-0.04***	(0.01)	1,603
	C. Manufacturing												
(11)	Wage	-0.13***	(0.04)	1,411	-0.12***	(0.04)	1,411	-0.12***	(0.04)	1,400	-0.12***	(0.04)	1,403
(12)	Total Output	-0.92***	(0.29)	1,451	-0.77***	(0.27)	1,451	-0.90***	(0.27)	1,440	-0.91***	(0.27)	1,443
(13)	# Establ.	-0.58***	(0.17)	1,514	-0.53***	(0.17)	1,514	-0.58***	(0.16)	1,502	-0.58***	(0.16)	1,506
	D. Agriculture												
(14)	Farm Land Value	-0.26*	(0.14)	1,214	-0.12	(0.13)	1,214	-0.35**	(0.14)	1,204	-0.34**	(0.14)	1,208
(15)	Livestock Value	-0.51***	(0.14)	2,036	-0.45***	(0.13)	2,036	-0.53***	(0.14)	2,019	-0.50***	(0.14)	2,026
(16)	Machinery Value	-0.46***	(0.15)	2,036	-0.39***	(0.14)	2,036	-0.51***	(0.15)	2,019	-0.50***	(0.14)	2,026
(17)	Fertilizer Expenditure	-0.50**	(0.25)	1,557	-0.48*	(0.25)	1,557	-0.55**	(0.25)	1,544	-0.55**	(0.25)	1,550

Notes: Observations are at the county and year level. The dependent variables in Panel A are the log of the total Chinese labor force (row 1), the log of the Chinese labor force in the sector stated (rows 2-4), or the log of the average occupational income score among Chinese individuals (row 5). The dependent variables in Panel B are the log of the total labor force of all individuals (row 6), the log of the labor force in the sector stated of all individuals (rows 7-9), or the log of the average occupational income score among all individuals (row 10). The dependent variables in Panel C are the log of average manufacturing wage (row 11), the log of the total manufacturing output (row 12), or the number of manufacturing establishments (row 13, Poisson regression). The dependent variables in Panel D are the log of the value of farm land (row 14, the log of the value of livestock (row 15), the log of the value of farming machinery and equipment (row 16), or the average expenditure for fertilizers (row 17). All regressions control for a dummy variable that equals 1 if the county is connected to a railroad in year t, a dummy variable that equals 1 if the county ever had a mine during 1850-1940 interacted with year fixed effects, and county and state-by-year fixed effects. The data for the dependent variables in Panel A and B are from the full count U.S. Censuses, for the years 1860-1940. The data for the dependent variables in Panel C are from the *Historical, Demographic, Economic, and Social Data* (ICPSR 2896), for the years 1860-1940; the data for the dependent variables in Panel D are from the United States Agriculture Data (ICPSR 35206), for the years 1860–1940. Monetary amounts are expressed in thousands of 2020 U.S. dollars (deflated using the Minneapolis Fed 1800–2020 CPI). Standard errors clustered by county are shown in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Figure A.1: Permutation Test



Notes: The curves are the distributions of β coefficients from 1,000 iterations of equation 1 after randomly permuting the variable $HighChineseShare_{i,1880}$across counties, as explained in Section 5.3. The vertical dashed lines correspond to the baseline estimates from Tables 3–6.