Send Them Back?
The Real Estate Consequences of Repatriations

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Abstract

We study the mass repatriation of Mexicans in the 1930s and how it affected U.S. housing markets. Developing a novel automated matching algorithm to link houses across the 1930 and 1940 Censuses, we show that repatriating Mexicans during the Great Depression negatively affected U.S. cities' real estate outcomes. The Mexican outflow led to a significant fall in house values and rents of properties previously occupied by Mexicans, with negative spillovers on the house values of U.S.-born neighbors. Crucially, when assessing the consequences to city-level housing markets, we show that repatriations depressed aggregate housing wealth growth. Our results uncover a persistent footprint of repatriation policies on individual and aggregate housing wealth.

Keywords: Immigration, Anti-Immigration Policies, Real Estate, Housing, Great Depression
JEL Classification: J15, R31, N92

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"The Mexican immigrant is not good material for citizenship, and in some places Mexican colonies are decidedly objectionable." — THE WASHINGTON POST, Jan 25, 1930.

"Between 40 and 50 unemployed American laborers threatened a united disturbance this morning when they tried to prevent Mexican workmen to continue their work (...) demanding that the contractors employ white labor." — THE LOS ANGELES TIMES, Oct 17, 1931.

1 Introduction

Immigration has consistently been at the center of political and economic controversies in history. The economic literature has shown that migration affects local economies through numerous channels, including labor markets, consumption, innovation, and economic growth (Card (1990, 2009); Wozniak and Murray (2012); Borjas and Monras (2017); Burchardi et al. (2018, 2020); Lee et al. (2022); Albert and Monras (2022)). A growing part of this literature has focused on the impacts of migration on housing. Studying housing remains vital for at least two reasons. First, housing is essential to most households' wealth and expenditure. Second, since migration flows can generate shifts in the local housing demand curve, intense immigration flows can significantly affect local housing availability and prices, potentially impacting the local wealth distribution, the cost of living, and real wages. However, our current empirical understanding of the effects of migration on housing stems from studies focusing on the *inflows* of immigrants (Saiz, 2003; Ottaviano and Peri, 2006; Saiz, 2007; Howard, 2020).

This paper sheds light on an understudied type of migration shock to housing markets: an *outflow* of immigrants. Making this distinction when studying housing markets is indispensable due to the inherent irreversibility of housing investment. Once a dwelling unit is built, it is prohibitively expensive to convert it back to investable capital—a characteristic also known as the *putty-clay* nature of real estate investment.[1] The existing literature shows evidence that in-migration shocks to a city are likely to increase the demand for housing and that its impact on housing prices will depend on the local housing supply elasticity and the relocation decisions of local residents in response to the new-comers (Saiz, 2007; Sanchis-Guarner, 2023). However, there is no empirical evidence on how an immigrant outflow shock affects house prices or rents. Because housing is durable, asymmetric effects on prices may arise, inhibiting us from making accurate predictions about out-migration episodes solely based on in-migration elasticities. It is plausible to anticipate a greater short-term impact on prices due

[1] The idea of putty-clay technology was introduced by Johansen (1959) and later emphasized in the context of housing investment by Cooke and Hamilton (1984) when modeling urban residential growth.

to the inelastic downward nature of housing (Glaeser and Gyourko, 2005). One of our key contributions lies in accurately estimating these impacts.

The lack of out-migration studies in the housing literature has become more pressing as we witness the invigoration of national populism and immigration backlash across the globe. In recent years, influential leaders have voiced strong views against immigration in election campaigns and electoral mandates.[2] Following this rhetoric, immigration policy has also been shifting towards stricter actions.[3] While most immigration policies are designed to curb the inflow of immigrants (e.g., by limiting the entrance of immigrants from specific countries), more extreme actions involving the mass expulsion of immigrants through raids and deportations have also become frequent in politicians' speeches.[4]

Our paper studies one of the largest ethnically motivated migration shocks in U.S. history to study the impact of out-migration on local housing. Specifically, we study the U.S. Mexican repatriation of the 1930s—a negative, large-scale shock to the Mexican workforce in the United States—to quantify its effects on housing prices and real estate outcomes of U.S. cities. Between 1930 and 1936, organized labor movements, the press, and local governments harassed, pressured, and forced Mexicans to leave the U.S. (Hoffman, 1974; Guerin-Gonzales, 1994; Sánchez, 1995; Balderrama and Rodríguez, 2006; Enciso, 2017; Lee et al., 2022).[5] We use data from the U.S. Censuses of 1930 and 1940 to assess whether and how housing-market conditions in local economies were affected by the intensity of the repatriation.[6] The broad presence of Mexicans in the U.S. labor force and their dispersed geographical distribution allows us to exploit the substantial variation in the repatriation of Mexicans across U.S. cities.

[2]For example, Donald Trump (U.S.), Matteo Salvini (Italy), Mette Frederiksen (Denmark), and Viktor Orbán (Hungary). Despite losing France's presidential election in 2017, Marine Le Pen had more than one-third (33.9%) of the votes in a campaign mostly centered on anti-immigration views (Edo et al., 2019).

[3]In the UK, the "hostile environment" policy for migrants gave rise to the Windrush scandal (See *BBC News*, "Windrush scandal: Home Office showed ignorance of race," Mar 19, 2020). In Italy, asylum applications have reached record rejection rates, increasing the number of deportations (*The Guardian*, "Italy rejects record number of asylum applications," Feb 14, 2019). In the United States, Immigration and Customs Enforcement have increased actions (*The New York Times*, "More Than 2,000 Migrants Were Targeted in Raids," Jul 23, 2019)

[4]For example, Donald Trump said on Twitter during his 2016 presidential campaign: "I have never liked the media term 'mass deportation'—but we must enforce the laws of the land!" He also wrote on Twitter: "Because of the pressure put on by me, ICE to launch large scale deportation raids. It's about time!" When the BBC's *60 Minutes* asked Marine Le Pen about undocumented immigrants during her presidential campaign, she told the interviewer, "Expulsion. It's the French law."

[5]In 2005, the State of California passed the Apology Act for the 1930s Mexican Repatriation Program, which officially recognized the "unconstitutional removal and coerced emigration of U.S. citizens and legal residents of Mexican descent" and apologized to residents of California for violations of civil liberties and constitutional rights. Legal scholars have also studied the unlawful removal of U.S. citizens of Mexican descent in the 1930s (Johnson, 2005).

[6]Our sample ends in 1940 to avoid confounding factors of World War II and the Bracero Program.

There are key empirical challenges in estimating the effects of out-migration on housing. The nature of the Mexican repatriation as an out-migration shock allows us to address at least two common challenges. First, many large-scale out-migration episodes occur in response to wars or natural disasters (Becker and Ferrara, 2019; Boustan et al., 2020). Obviously, these events destroy the existing supply of houses and affect real estate markets through channels other than just out-migration. As an ethnically motivated shock to out-migration rather than an armed conflict or natural catastrophe, the Mexican repatriation is less likely to induce a direct destruction of housing units. Second, the business cycle conditions can directly affect the housing markets while also affecting immigrants' decisions to move. The potential simultaneity between the migration flows and the local economic conditions can lead to biased estimates of the economic consequences of immigration. Because the Mexican repatriation involved harassing, pressuring, and forcing targeted individuals of a specific nationality to leave the country, it likely pushed Mexicans to out-migrate for reasons beyond economic adversity. This helps to mitigate the usual confounding effects that are a common concern in the literature. We consider the Mexican repatriation as a unique setting to evaluate the consequences of out-migration to housing markets for its nature in helping us address these empirical challenges.

Nonetheless, the intensity of the repatriation efforts could be correlated with other city characteristics that might affect housing markets. To isolate the Mexican repatriation effects on real estate, we employ an instrumental variable (IV) approach. Our instrumental variable exploits patterns in the road infrastructure of 1930, combined with the historical presence of Mexican immigrants in the U.S. at the turn of the century. More specifically, it combines a measure of exposure to the out-migration shock (the share of Mexican workers in 1900) with a measure of the cost for local authorities to repatriate immigrant workers (the inverse of the travel distance to the U.S.-Mexico border, based on the 1930s U.S. road infrastructure). Our baseline specifications also include a series of control variables, including state fixed effects and sector employment shares, to account for various factors that can influence house prices, especially the heterogeneous exposure of cities to the Great Depression.

Considering the nature of the Mexican repatriation as a local shock due to the out-migration of a specific part of the population, we begin by investigating its effects on the prices of Mexican-occupied houses. We develop a novel automated matching technique to link addresses across the 1930 and 1940 Censuses from the IPUMS Restricted Complete Count Data (Ruggles et al., 2020). The matched address sample allows us to track each housing unit's value or rent evolution across the two censuses. Using this sample, our two-stage least squares (2SLS) estimates show that the Mexican repatriation had a strikingly large and persistent effect on houses where Mexicans lived in 1930. We find that the value of houses inhabited by Mexicans in 1930 devalued by an average of 10 percentage points between 1930 and 1940 for every percentage point drop in a city's Mexican population. Rents on houses occupied by Mexicans in 1930 also fell by more than five percentage points for every percentage point of Mexican outflow. To illustrate the economic significance of this effect, we can compare it to the median devaluation of Mexican-occupied houses in the period. The median house owned by Mexicans devalued by 41% between 1930 and 1940, while the median rent paid by Mexicans fell by 33% in the period. This means that the partial negative effect of the repatriation on Mexican-owned houses is equivalent to roughly one-fourth of the decline observed in the median Mexican-occupied house value and about 15 percent of the decline observed in the median rent of Mexican-occupied houses in our sample. More importantly, despite the large devaluation of Mexican-occupied houses, we do not find statistically significant evidence of average effects on the values or rents of U.S.-born occupied houses.

The 1930s Mexican repatriation had distinct and complex impacts on housing markets, affecting dimensions beyond the housing prices of Mexican-occupied houses. Our analysis demonstrates that in cities where the repatriation rates were higher, houses that were inhabited by Mexicans were more likely to transition into owner-occupied units by 1940. Moreover, the larger the drop in Mexican workers in a city, the less likely the houses initially inhabited by Mexicans were subsequently inhabited by U.S.-born residents in 1940. This suggests that the repatriation did not lead to higher occupancy by U.S.-born individuals of houses previously inhabited by Mexican immigrants. We also find that U.S.-born residents who lived near Mexican-occupied houses experienced a decrease in their property values. This nuanced picture adds to our understanding of how migration policies can have multifaceted effects on local housing markets, affecting not just the targeted immigrant population but also the broader community.

We also examine the effects of Mexican repatriation exposure on the growth rates of city-level housing market outcomes. In our baseline estimation, we find that cities with greater exposure to Mexican repatriation faced reduced growth rates in all our housing outcome variables. Precisely, we find that one standard deviation (1 percentage point) larger repatriation depressed the median house value growth rate (by –1.2 percentage points) and the median rent growth rate (by –0.88 percentage points). We can compare these results to the observed growth rates of median house values and rents in the period to put these results into perspective. On average, median house values decreased 43.2% while median rents decreased 30.6% in the decade. Therefore, a one standard deviation increase in exposure to the Mexican repatriation explains approximately 2.9% and 2.9% of the average decrease in house values and rents, respectively. We also find that repatriation depressed the growth rates of building permits. We find that one standard deviation (1 percentage point) larger repatriation decreased growth rates for the value of building permits by –3.7 percentage points between 1930 and 1940. This result suggests that the repatriation negatively impacted the expectations about future housing market conditions and local real estate activity.

To mitigate some concerns about our empirical strategy, we conduct a series of robustness and validation tests. First, we show that our instrumental variable is not linearly associated with adverse economic conditions or various measures for the Great Depression intensity, supporting the validity of the exclusion restrictions. Second, we find no evidence of a linear association between our instrumental variable and other immigrant groups' outflow rates, alleviating concerns that our instrument is associated with common factors affecting the mobility of immigrants in general. Despite data limitations, we find no evidence of pre-trends in housing-market outcomes—as measured by growth rates of building permits—associated with the share of Mexicans in 1930.

Our paper contributes to several branches of the extensive literature on the economic consequences of immigration. Within this broad literature, this paper is related to the studies focused on the economic consequences of forced migration.[7] Most studies have focused on the assessment of the economic effects on receiving regions (Hornung, 2014; Schumann, 2014; Johnson and Koyama, 2017; Chevalier et al., 2023). In contrast, this paper provides evidence of the economic consequences of forced migrations to the origin regions. This is closely related to Chaney and Hornbeck (2016), Testa (2021), and Ferrara and Fishback (2024), who study politically or ethnically motivated expulsion events in history. While these papers show evidence of depressed regional growth from sending regions, our paper is the first to directly quantify the effects of an ethnically motivated out-migration shock on housing markets, one of the main channels through which migration can affect economic growth.

Our paper also relates to the recent literature that focuses on the economic effects of restrictions on immigration based on race or country of origin (Allen et al., 2018; Clemens et al., 2018; Feigenberg, 2020; Tabellini, 2020; Abramitzky et al., 2023). In studying the economic consequences of the 1930s Mexican repatriation, our analysis closely relates to Lee

[7]Among recent contributions, see Chiovelli et al. (2023) and Logothetis et al. (2023). For a literature review on forced migration comprising historical and recent events, see Becker and Ferrara (2019).

et al. (2022), who studied the labor market consequences of the Mexican repatriation. The authors find that in the regions more exposed to the repatriation, U.S.-born workers faced a smaller probability of having a job in 1940, and this effect was larger on low-skilled workers. The authors also find that the repatriation did not cause internal migration of U.S.-born workers to replace the repatriated immigrants. Our analysis contributes to their findings by studying the effects of the Mexican repatriation on housing markets in the U.S. We use real estate conditions to gauge the costs to local economic growth because housing is a crucial channel through which immigration affects economic activity.

A growing strand of the literature focuses specifically on the effects of immigration shocks on general prices (Lach, 2007; Cortes, 2008), and specifically on housing prices (Saiz, 2003; Greulich et al., 2004; Ottaviano and Peri, 2006; Saiz, 2007; Akbari and Aydede, 2012; Mussa et al., 2017; Depetris-Chauvin and Santos, 2018; Howard, 2020; Pavlov and Somerville, 2020; Sanchis-Guarner, 2023; Ang et al., 2023). In dealing with the challenge of identifying the causality of migration effects, the existing literature typically leverages exogenous shocks of inflows of migrants to a region to study the effects on house prices and availability. Most studies find that immigration increases rents and house prices, suggesting that immigrants do not entirely displace natives. In some settings, immigration is shown to have a negative effect on house prices due to native flight (Saiz and Wachter, 2011; Sá, 2015). Few studies, however, focus on the effects of forced migration episodes. For instance, Alix-Garcia et al. (2012), Balkan et al. (2018), and Daepp et al. (2023), study the effects of displaced populations on the housing markets of the receiving regions. Our paper contributes to this literature by being the first to estimate the effects of an *outflow* of immigrants on the sending regions.

This paper also relates to the literature studying populism and nationalism, primarily focusing on 1930s America (Bennett, 1969). Recent work has focused on the direct consequences of exposure to populist radio hosts on political preferences (Wang, 2021) or the effects on uncertainty caused by populist leaders' actions (Mathy and Ziebarth, 2017). As Tabellini (2020) and Alesina and Tabellini (2024) show, immigration can trigger a strong political backlash, resulting in more conservative, anti-immigrant policies. Therefore, our paper contributes to understanding the economic consequences of immigration backlash rooted in the ideals of national populism. Our findings are particularly relevant to today's ongoing debate on the economic effects of immigration backlash. Our results show that repatriations have large impacts on house values and rents in more exposed neighborhoods and that these effects matter to city-level housing market indicators.

2 Mexican Immigration in the 1920s and the 1930s Repatriation

The U.S. experienced a massive inflow of immigrants in the late 19th century and the early 20th century, especially from Europeans escaping adverse conditions in their home countries.[8] Mexican immigration grew steadily throughout the early decades of the 20th century, but especially during the 1920s. This robust inflow was mainly driven by U.S. employers recruiting Mexican workers in the agriculture, railroad, meatpacking, and steel mill sectors. In the 1920s, the number of Mexican immigrants increased dramatically. The increased demand for cheap labor coincided with the 1924 Immigration Act, which imposed quotas on European immigration (Abramitzky et al., 2023), which made many employers turn to Mexican labor to fill the job vacancies. The pressing economic conditions and armed conflicts in Mexico, such as the Mexican Revolution (1910–1920) and the Cristero War (1926–1929), also contributed to the inflow.

As the U.S. economy entered the Great Depression, starting with the 1929 Crash, organized groups including labor unions, local authorities, and local media pressed for immigration quotas and repatriation of Mexicans.[9] As the Depression deepened, many Americans began to view Mexicans as unwelcome aliens who were a burden on their local community.[10] The historiography argues that the Mexican community was an easier target for two main reasons. First, the number of Mexican immigrants had increased dramatically in the previous years, making them the largest group of newcomers in many cities in the United States. As Cikara et al. (2022) shows, when a minority group increases, they are more likely to be targeted with hate crimes and more negative attitudes. The existing historical evidence supports the idea that Mexican immigrants were targeted mostly because of the great inflow observed in the previous decades.[11] Second, because of ethnic and cultural differences, some Americans often saw

[8]This period is known as the Age of Mass Migration from Europe. By 1910, 22% of the U.S. workforce was foreign-born, compared to only 15% today (Abramitzky and Boustan, 2017; Abramitzky et al., 2014).

[9]Specifically, the panel C of Figure A.1 in the Internet Appendix A shows an article by *The Washington Post* on Jan 20, 1930, reporting an intense pressure from labor unions and "*influential organizations opposed to adulteration of the 'American blood stream'*" in discussing an immigration quota for Mexicans.

[10]Balderrama and Rodríguez (2006) presents historical evidence that local media, labor unions, and officials often overestimated the relief expenditures towards Mexican immigrants. Alesina et al. (2023) show that these perceptions that immigrants take advantage of the welfare system are still common in many countries.

[11] Tabellini (2020) shows that immigration can trigger strong political backlash via the election of more conservative, anti-immigrant members of Congress, who were, in turn, more likely to vote in favor of immigration restrictions.

them as unassimilable, that is, unable to become a part of American culture and society (Simon, 1974; Balderrama and Rodríguez, 2006; Enciso, 2017).

The local and decentralized nature of the Mexican repatriation makes it challenging to determine the exact number of repatriated individuals. This uncertainty explains the variation among historians' estimations of the total Mexican outflow in the 1930s.[12] The more conservative estimates by Hoffman (1974) and Gratton and Merchant (2013) suggest that nearly 400,000 Mexicans left the U.S. between 1929 and 1937, while Balderrama and Rodríguez (2006) cite a much larger number—from 1 million to 2 million, based on estimates that attempt to include those undocumented immigrants omitted from official calculations.

Using the Census, we calculate that there were 263,900 fewer Mexican immigrants in the U.S. in 1940 than in 1930, which constituted 33.2% of the overall Mexican population present in the U.S. as of 1930.[13] Figure 1 depicts the surge of Mexican-born immigrants between 1900 and 1920, followed by a sharp decline between 1930 and 1940. Another interesting fact from Figure 1 is that the number of immigrants from other (non-Mexican) Latin American countries did not decline in the same period.

While the existing historiography varies in their accounts of the period, there is a consensus that coercion, forced deportation, and various other fear-spreading tactics were extensively used against the Mexican population of the time. The historical accounts of this period document that local authorities encouraged and enforced repatriation, even though it was officially categorized as voluntary migration (Valdés, 1988; Balderrama and Rodríguez, 2006). Immigration officers and local police sometimes assisted welfare agencies and even staged raids to convince Mexicans to depart. They often harassed Mexicans, provided free transportation in trains, and, on many occasions, coerced them to leave their U.S. homes. The lack of granular data on the individual U.S.-Mexico border crossings during that time makes it challenging to determine the exact importance of these repatriation efforts to the overall Mexican outflow. The available estimates in the literature suggest that the repatriation efforts involving harassment, coercion, pressures, and forced deportations were the primary determinant of the Mexican outflow of the 1930s. For instance, using the outflow of French-Canadian immigrants as a comparison

[12] The most intense period of Mexican deportations and repatriations was 1929–1934. Historical evidence shows that deportations and repatriations continued until 1937 (Hoffman, 1972).

[13] The observed decrease in the number of Mexican immigrants living in the U.S. between 1930–1940 is likely to be an underestimate of the actual number of people affected by the repatriation for a couple of reasons. First, Balderrama and Rodríguez (2006) highlights that repatriation efforts also targeted a large number of U.S. citizens of Mexican descent. Second, many Mexican immigrants were undocumented, making them more likely to avoid government surveys and census takers.

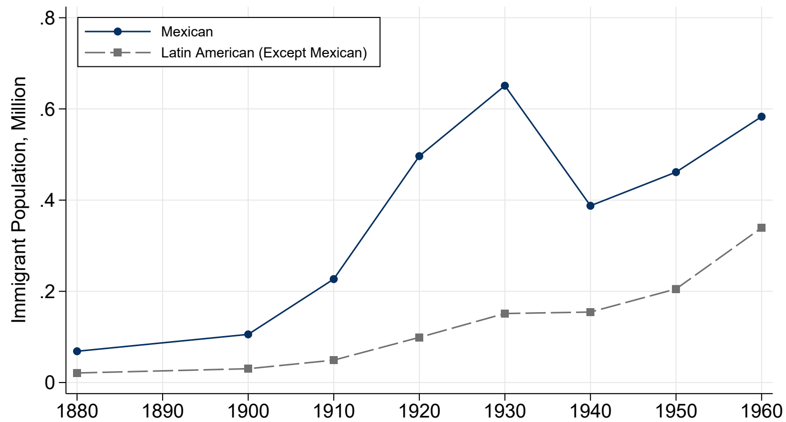


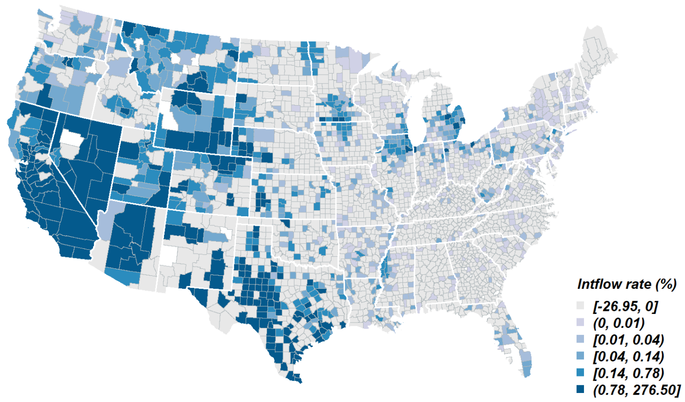
Figure 1. Total Latin American immigrant population in the United States by origin (1880–1960). This figure shows the total number of Mexican and other Latin American immigrants in the United States from 1880 to 1960. Immigrants are defined according to the country of birth reported on each census. Latin American countries include Central America (Belize/British Honduras, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama), the Caribbean (Cuba, Dominican Republic, Haiti, Jamaica, Antigua-Barbuda, Bahamas, Barbados, Dominica, Grenada, Montserrat, St. Kitts-Nevis, St. Lucia, St. Vincent, Trinidad and Tobago, Turks and Caicos, British Virgin Islands, Netherlands Antilles, Curacao, Guadeloupe, and St. Barthelemy), and South America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Guyana/British Guiana, Paraguay, Peru, Suriname, Uruguay, and Venezuela).

group, Gratton and Merchant (2013) estimate that over 70% of the observed net Mexican outflow was not voluntary but due to excess repatriation.

In the Online Appendix Figure A.1, we present historical newspaper evidence of anti-Mexican sentiment and hostile acts targeted at Mexican immigrants. These acts involved the government (e.g., immigration officers), organized labor (e.g., unionized workers), and the press (e.g., local and national newspapers). As shown in Panel A, *The New York Times* reported in 1931 that 35,000 Mexican immigrants in California were "*pressed by economic diversity, fearful over recently renewed activities of immigration authorities, and perplexed by what they regard as anti-Mexican sentiment.*" This illustrates that economic distress ("*idleness*") and tighter enforcement from government immigration officials played an essential role in Mexicans' decision to leave the country.[14] In Panel B, the *Los Angeles Times* reports a near-riot in 1930 in which some 50 unemployed American laborers "*tried to prevent Mexican workmen (...) to continue their work by guarding their toolboxes and demanding that the contractors employ white labor.*" The national and local press also contributed to the negative climate by publishing articles and opinions demeaning to Mexican immigrants. For example, as shown in Panel C, an article published by *The Washington Post* argued that "*the Mexican immigrant is not good material for citizenship, and in some places, Mexican colonies are decidedly objec-*

[14]One example is the intensity of the Immigration Service's efforts in deporting Mexican immigrants. According to Balderrama and Rodríguez (2006), from 1930 to 1939, 46.3 percent of those deported from the United States were Mexican. However, according to census data, Mexicans comprised less than 5 percent of the total immigrant population in the U.S. in 1930.

(A) Mexican Inflow (1920–1930)



(B) Mexican Outflow (1930–1940)

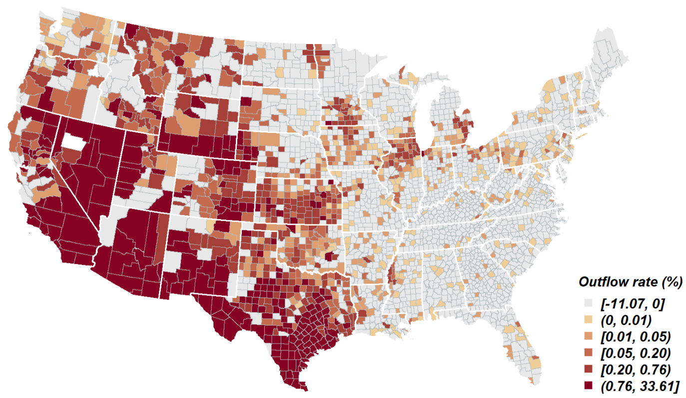


Figure 2. Geographical distribution of the inflow and outflow of Mexicans. This figure shows, for each county, the 1920-30 inflow (Panel A) and the 1930–40 outflow (Panel B) of Mexicans as calculated from the full-count U.S. Censuses of 1920, 1930, and 1940. The nationalities are defined based on the person's place of birth from the U.S. Census. The flows are measured by the Mexican working-age population's county-level change relative to the local working-age population. For instance, a Mexican outflow of 10% means that the drop in the Mexican population of that county is equivalent to a 10% drop in the total working-age population. We define counties according to 1930 limits by IPUMS-NHGIS (Manson et al. (2020)).

tionable," even though it conceded that, given the economic importance of Mexican immigrants, "*a sudden reversal of* [immigration] *policy would work great hardship to employers in the Southwest*."

We next document the geographic distribution across U.S. counties of Mexican immigration before and after the repatriation. Panel A of Figure 2 presents the inflow as measured by the change in the total number of Mexicans between 1920 and 1930 as a share of each county's total working-age population. Darker blue shades represent higher inflows. Conversely, Panel B of Figure 2 portrays counties with a greater outflow of Mexicans between 1930 and 1940 with darker shades of red. The maps show that while the outflow of Mexican immigrants was more pronounced in the counties closer to the US-Mexico border, we still observe large outflow rates in cities across the country.

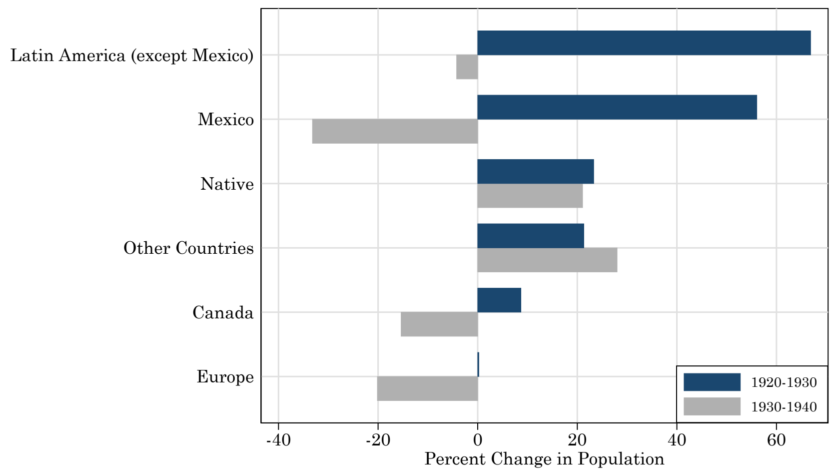


Figure 3. Percent changes in working-age population by origin: 1920–30 versus 1930–40. This figure shows the inflow (1920–30) and outflow (1930–40) of immigrants. The nationalities are defined based on the person's place of birth from the U.S. Census. For example, between 1920 and 1930, the Mexican population in the U.S. increased by around 60%, whereas about 30% left the U.S. in the following decade (1930–40). See notes on Figure 1 for a list of countries included under *Latin America*.

Another helpful way to put the 1930s Mexican repatriation in perspective is to compare the outflow rates of Mexicans and immigrants from other ethnicities. Figure 3 examines the change in the U.S. working-age population before (in dark blue) and after (in gray) the repatriation period for different ethnic groups. It shows that the massive Mexican outflow of 33% during the 1930–1940 period is unmatched by other groups. Their outflow rate was nearly 1.5 times that of the Europeans. Canadians—who also share a border with the U.S. and could return more easily than other nationals—had half of the outflow rate. A final takeaway from Figure 3 is that non-Mexican Latin American immigrants experienced a substantially smaller outflow—even though the inflows of both Mexican and non-Mexican Latin immigrants had both grown at similar percentage rates in the previous decade.

3 Immigrant Repatriation in a Spatial Framework

In this section, we introduce a simple spatial framework to rationalize our empirical strategy for isolating the effects of repatriation and illustrating potential channels by which repatriation can affect housing prices. The model suggests a set of relationships to be tested in the data. We generalize previous spatial frameworks where a group of residents has a distaste for a minority and take some action in response to the presence of the minority.

In the context of racial segregation, Boustan (2010) and Akbar et al. (2022) show that white residents can respond by moving out of neighborhoods with a high concentration of black residents, a phenomenon also known as "white flight." In the context of immigration, studies show evidence that growing immigrant presence can also induce "native flight" if immigrant enclaves are perceived as less desirable places to live by incumbent natives (Saiz and Wachter, 2011; Moraga et al., 2019; Andersson et al., 2021). We complement this literature by assessing another way natives can respond to immigrant presence: by engaging in repatriation efforts, which forcibly push immigrants to leave the country. While flight responses are mostly an individualized choice for families, engaging in repatriation or other policies to bar immigrants requires a collective effort and some degree of social and political coordination. We argue that such drastic actions can find support among large groups of the native population in times of economic crisis. Recent studies show that populist nationalism can be born out of worsening economic conditions (Algan et al., 2017; Pastor and Veronesi, 2021; Wang, 2021).

Suppose every resident in a U.S. city is a worker, and every city has two types of residents: US-born Natives (N) and a new group of immigrants that we will refer to as Mexican immigrants (M). Denoting by L_N and L_M, respectively, the total working-age population of natives and Mexican immigrants, we define the share of Mexican immigrants in a city's total population as $\lambda = L_M/(L_M+L_N)$. The economy has two states of the world defined by $S \in \{G, B\}$, good economic state ("non-crisis") and bad economic state ("crisis"), respectively.

Native Worker Preferences. From the foundations of Rosen (1979) and Roback (1980, 1982), with free mobility, the utility level for a native worker in a city cannot fall below reservation utility $\underline{u}_N$. Adopting a more general version of the "no-arbitrage" condition, the utility function in state of the world S of a native worker, $U_N^{(S)}(\cdot)$, can be written as:

$$U_N^{(S)}(p, z, \lambda) = \underline{u}_N. \tag{1}$$

U is decreasing in the price of housing (p), and increasing in the city-level demand shifter (z) that represents local amenities or productivity.[15] The share of Mexican immigrants also affects a native's utility in ways that depend exclusively on the state of the economy S.

[15] In a similar fashion, Boustan (2010) models the white-black dichotomy in the context of post-war domestic migration across U.S. cities.

Assuming that the country-level economic state S is common to all cities, it does not affect a worker's decision of what city to live in within a country in a given period. However, a change in S is associated with native's different preferences towards immigrants. Particularly, we assume that, conditionally on z and p, the utility of natives towards the share of immigrants, $U_N^{(S)}(\lambda)$, depends on the state of the economy:

$$U_N^{(S)}(\lambda|p,z) = \begin{cases} 0, & \text{if } S = G \\ f(\lambda) \leq 0, & \text{if } S = B \end{cases} \tag{2}$$

When the U.S. economy is not in crisis ($S = G$), natives will be indifferent to the share of Mexican immigrants in a city. However, in times of economic crisis ($S = B$), natives will have a distaste for Mexican immigrants depending on λ, i.e., the relative importance of Mexican immigrants in a city's total population. Distaste for Mexican immigrants may reflect common, stereotypical feelings towards Mexicans during the 1930s, such as the perception that Mexicans were not fit for U.S. society or that they were "stealing" jobs from natives or were a burden to the local government spending. This structure also follows recent findings showing that attitudes of natives toward immigrants or other minorities tend to become more pessimistic in times of economic crisis (Isaksen, 2019; Bursztyn et al., 2022). In the crisis state, distaste for immigrant workers is captured by some increasing function of the share of immigrants, $f(\lambda)$, such that the larger the share of immigrants in the city, the larger the native's disutility from the immigrant presence.

Repatriation Efforts. When the economy is in crisis ($S = B$), natives can appeal to repatriation efforts due to their distaste for immigrant workers. Suppose that there is a cost of engaging in repatriation efforts that are equally shared among the native population. Denote by $\lambda^\star$ the threshold share of Mexican immigrants at which the marginal utility from reducing the share of Mexican immigrants in the city equals the marginal cost of engaging in repatriation. Therefore, natives will engage in repatriation efforts only when the share of Mexicans exceeds $\lambda^\star$ in a crisis state. Denote the function of repatriation efforts by $R(\lambda)$, where $R(\cdot)$ is a non-decreasing function of the share of Mexican immigrants in a U.S. city. Following Eq. (2), we assume $R^{(S)}(\lambda)$ follows a state-dependent, piece-wise function of the share of immigrants in the city. Intuitively, repatriation efforts are zero in the non-crisis state ($S = G$) since natives are indifferent to immigrants. Therefore, $R^{(S=G)}(\lambda) = 0$ for all shares λ. In a bad economic state ($S = B$), the distaste for immigrant workers will induce repatriation efforts as a function of the share of Mexican workers:

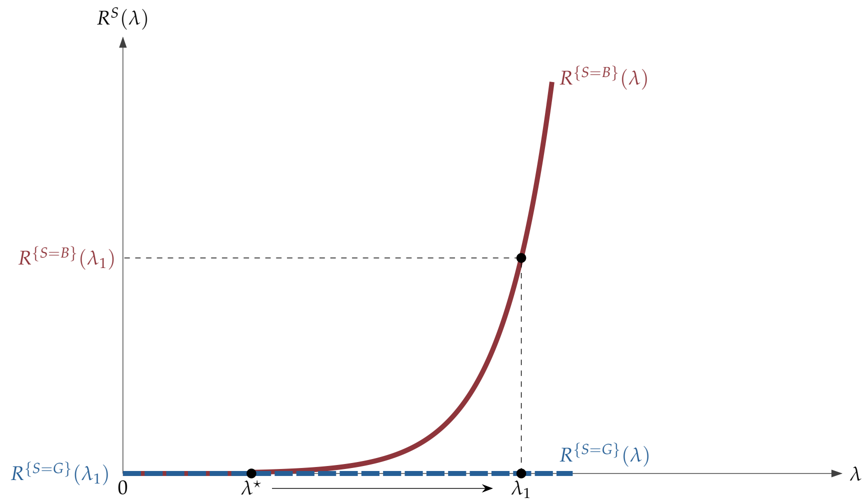


Figure 4. Repatriation Function. This figure depicts the repatriation efforts or intensity as an increasing function of the share of Mexicans in the city. The dashed blue line depicts the city in a good state ($S = G$) equilibrium, such that the native population is indifferent to the share of Mexicans λ_1. In the good state, there are no repatriation efforts for any share of Mexicans, λ. The continuous red line represents the repatriation function when the economy changes its state to $S = B$. In the bad state, there will be an increase in the anti-Mexican sentiment, i.e., natives will have a distaste for a high share of Mexican workers ($\lambda > \lambda^\star$). In cities where the initial share of Mexican workers exceeds the threshold level $\lambda^\star$, there will be repatriation efforts carried out by natives.

$$R^{(S=B)}(\lambda) \begin{cases} = 0, & \text{if } \lambda \leq \lambda^\star \\ > 0, & \text{if } \lambda > \lambda^\star \end{cases} \tag{3}$$

When the regime switches to a crisis state, repatriation efforts will bind in cities where immigrants exceed the threshold share $\lambda^\star$. Figure 4 illustrates repatriation efforts as a function of the immigrant share λ. Recent literature shows that the attitudes of natives towards immigrants can be positively or negatively associated with their local presence. Tabellini (2020) and Alesina and Tabellini (2024) show that increased immigration tends to increase support for anti-immigration policies. Conversely, a more positive perception among natives towards immigrants can emerge over extended periods of coexistence (Bursztyn et al., 2024) or from witnessing the struggles of immigrant groups (Andries et al., 2023). Considering that the major inflow of Mexican immigrants took place in the few decades preceding 1930 and the existing residential segregation between Mexican immigrants and natives, it is more plausible that the presence of Mexican immigrants was associated with the anti-Mexican sentiment observed in the 1930s and, consequently, repatriation efforts.

Mexican Immigrant Preferences. The utility of Mexican immigrants in the U.S. is similar to native workers with respect to housing prices p and the demand shifter z. However, following the vast literature on the importance of past settlements in immigrants' location decisions, a Mexican immigrant's utility is increasing in the share of Mexican immigrants in the city (λ), but strictly decreasing in the repatriation efforts $R^{(S)}(\lambda)$, which is itself a function of λ:

$$U_M^{(S)}\left(p, z, \lambda, R^{(S)}(\lambda)\right) = \underline{u}_M \tag{4}$$

The Mexican immigrants will choose to stay in the U.S. if their utility level is higher than some reservation utility in Mexico, $\underline{u}_M$. They otherwise repatriate if their utility falls below $\underline{u}_M$. The intuition behind Mexicans' decisions can be summarized as follows. In the non-crisis state, Mexicans face no repatriation efforts, so they will respond only to local shocks on prices p and the demand shifters z, in the same manner as natives, and be attracted to areas with previously larger shares of immigrants. In the crisis state, disutility from repatriation efforts can exceed the utility enjoyed by Mexican workers living in cities with a greater share of Mexicans, forcing them to repatriate.[16]

Consider the period of the Great Depression, that worsened the economic conditions of the U.S. economy. This change of state S would induce a different behavior from natives towards Mexican immigrants and would increase the anti-Mexican sentiment country-wide. In the crisis period, natives would have a threshold share of Mexican immigrants in any U.S. city. If this change in tastes is large enough, then the existing share of Mexicans in each city would often exceed the threshold share of Mexican workers "desired" by natives. Natives would then start engaging in repatriation efforts, giving rise to an anti-Mexican sentiment in the region, which would prompt Mexican immigrants' departures to Mexico. From this reasoning, we can conclude that *if the repatriation efforts are an increasing function of the share of Mexicans, regions with a higher share of Mexicans should have higher outflow rates of Mexicans*.

Turning to the data, we find that counties with larger Mexican populations also experienced higher outflow rates in the 1930s. We present this correlation more clearly in Panel A of Figure 5, which shows a strong linear relationship between the 1900 Mexican population share and the

[16]Here, we are excluding from the model the possibility that some Mexican workers would migrate to other cities within the U.S. that imposed less restrictive repatriation efforts. It is equivalent to assuming that the workers who have been exposed to the repatriation efforts were not given this option. The data and historical evidence support the argument that the 1930s Mexican repatriation consisted of multiple efforts to pressure and harass Mexican immigrants with the goal of expelling them from the country, and not only from the city they were living in.

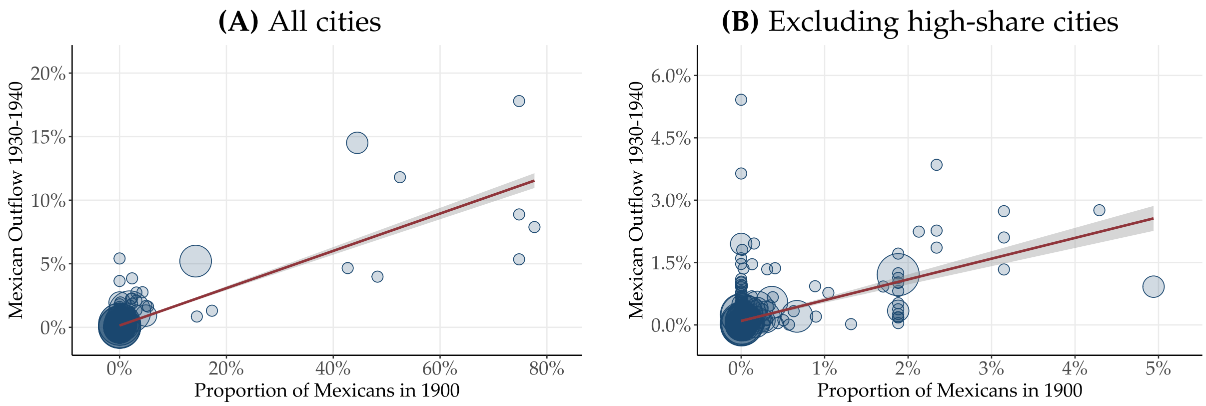


Figure 5. Positive correlation: repatriation intensity vs. Mexican population shares from 1900. This figure shows the positive correlation between *Mexican Outflow* (defined in Eq. (5)) and the county-level share of Mexicans in 1900, i.e., before the repatriation shock. Panel A presents the scatter plot for all cities in our sample, and Panel B repeats the scatter plot after excluding cities with more than 5% share of Mexicans in 1900.

1930–1940 outflow of Mexicans. Although inflows and outflows were more substantial in counties near the border with Mexico, they were quite widespread. We observe counties with considerable migration flows in the West (Oregon, Nevada, Washington), the Midwest (Illinois, Indiana, Michigan, Ohio), and the East (Pennsylvania). If we exclude border cities and redo the scatter plot in Panel B of Figure 5, we see that the strong relationship remains for cities throughout the entire geographic span of the continental U.S., as documented by Balderrama and Rodríguez (2006).

Housing Prices. How will house prices respond to the repatriation of immigrants? From the seminal work of Glaeser and Gyourko (2005), we assume that the price of housing is a function of the number of workers in the city $L_T \equiv L_N + L_M$, and that, conditional on construction costs, the decisions of the construction sector determine the price elasticity of housing supply. In this case, the housing supply curve will be kinked, generating an asymmetric response to changes in demand: increasing demand leads to new construction, but declining demand does not lead to an immediate reduction in the housing stock.

During the 1930s, the majority of U.S. cities were in a state of low construction and housing market decline. Using various housing price series, Fishback and Kollmann (2014) show that 1940 prices were significantly lower than in 1930. In addition, Table 2 presents summary statistics from the U.S. Census data, and shows a substantial decline in the median house value, median rents, and building permit value, for the average U.S. city.[17] In this context, the positive

[17] We also investigate if the Mexican repatriation had a direct effect on the supply of housing. In 1930, approximately 12.7% of Mexican immigrants worked in the construction or construction-related, durable goods manufactur-

correlation between repatriation intensity and the proportion of Mexicans in a city implies that heightened repatriation could lead to significant shifts in the housing market demand. Conditional to the local economic conditions, the repatriation of Mexicans would induce a decline in housing prices, subsequently discouraging new construction projects. From this reasoning, we predict that *if natives engage in the repatriation of Mexican immigrants, it will lead to a decline in city housing prices and a decline in the construction of new houses.*

How will the effects of the Mexican repatriation be distributed within each city? The answer to this question will depend on the level of residential segregation between Mexican immigrants and the rest of the population within cities. If the housing market is segmented with immigrants clustering in neighborhoods within cities, then the decline in house prices should be larger in areas where the presence of immigrants is more predominant. In fact, Eriksson and Ward (2019) shows relatively high levels of residential segregation for Mexican immigrants in U.S. cities. In this context, we predict that *the effects of the Mexican repatriation will be larger for the houses inhabited by Mexicans in 1930 and other houses that were neighbors of Mexican immigrants.*

In this framework, we have considered how house prices are affected by immigrant outflow pushed by repatriation efforts. However, changes to the local economy itself may also have affected the decision of immigrants to leave the U.S. For instance, a decrease in cities' productivity (z) could simultaneously have affected the outflow of immigrants and house prices. This process could generate a spurious correlation between outflow migration and house prices. The simple spatial framework helps to rationalize the importance of focusing on the ex-ante distribution of a specific immigrant population as a source of exogenous variation in the efforts to repatriate the specific group and consequently outflow rates in U.S. cities. In the next section, we outline our instrumental variable approach and discuss its underlying assumptions.

4 Empirical Strategy

4.1 Identifying the Mexican Repatriation Effect

The objective of our baseline empirical work is to study how the 1930s Mexican repatriation affected the evolution of housing prices in the United States. In doing so, our goal is to isolate the effect of the ethnically motivated out-migration shock from any other factor associated

ing sectors (cf. Table B.3). In Table B.5, we find that the Mexican repatriation reduced the employment of Mexicans in construction and that the U.S.-born increased their employment in construction proportionally, while the overall employment growth in the construction sector stagnated.

with housing markets. Following Lee et al. (2022), we define the city-level measure of Mexican outflow from city c between 1930 and 1940, $O^{MEX}_{c,1930:40}$:

$$O^{MEX}_{c,1930:40} = -\left(\frac{Pop^{MEX}_{c,1940} - Pop^{MEX}_{c,1930}}{Pop_{c,1930}}\right), \tag{5}$$

$Pop^{MEX}_{c,t}$ is the Mexican working-age population in city c in year t (1930 or 1940), and $Pop_{c,1930}$ is the total working age population in city c in 1930.[18] Because the repatriation comprises a decline in the population of Mexican workers, we multiply the growth rate by minus one for a more straightforward interpretation.[19]

The main drawback of estimating the relationship between the Mexican outflow and housing price changes is that, even after controlling for observable characteristics, migration flows might be correlated with other local economic conditions. The main concern is that the intensity of the Mexican repatriation might have been correlated with other local economic conditions that could have influenced the evolution of housing markets between 1930 and 1940. We use an instrumental variable (IV) approach to address the potential endogeneity between the Mexican outflow and the housing market outcomes and produce causal estimates.

Our instrumental variable combines the infrastructure of the U.S. road network and the historical presence of Mexican immigrants in a county at the turn of the century. The relevance condition of our IV is given by the historical evidence that the repatriation happened with greater intensity in counties with larger pre-existing Mexican communities (see Figure 5). To avoid contemporaneous confounders, we opt to use the share of the Mexican population in a U.S. county in 1900 as an *ex-ante* measure of exposure to the repatriation.[20] This has at least two advantages. First, it is less likely that the 1900s Mexican population share in a county is correlated with the economic fundamentals of the Great Depression in the 1930s.[21] Second, for historical and cul-

[18]We define the working-age population as individuals aged between 18 and 65 years, not living in group quarters.

[19]The measure $O^{MEX}_{c,1930:40}$ can be interpreted as the normalized drop in Mexican workers in the city c over the decade. Therefore, higher values of the Mexican outflow measure are associated with greater declines in the Mexican working-age population in city c between 1930 and 1940.

[20]Previous studies have relied on the *ex-ante* geographical variation in immigrant settlement to produce causal estimates of the effects of immigration. As argued by Jaeger et al. (2018), when studying migration inflows, the IVs based on the historical presence of immigrants derive from the evidence that immigrants tend to choose locations with greater cultural proximity due to existing networks of nationals living abroad. In our case, the IV borrows from an opposite idea, that in the regions with a larger Mexican population, the local nationalist groups were more likely to identify Mexican immigrants as a "problem" to the local economy, seeing them as rivals when competing for jobs and as a burden to the local welfare system, consequently resulting into more repatriation efforts.

[21]In Section B.1 of the Online Appendix, we show event study specifications that show evidence supporting the absence of pre-trends building permit growth associated with Mexican immigrant presence.

tural persistence reasons, the 1900 share is still sufficiently correlated with the size of the Mexican population in 1930 and, therefore, with the population potentially exposed to the repatriation.

The transportation infrastructure also had an essential role in the repatriation. The historical evidence shows that the existing highways and railroad trackage governed the migration pathways between Mexico and the United States. As documented by Hoffman (1974), the infrastructure of the years before the Great Depression funneled travelers through the U.S.-Mexico main border crossing stations.[22] We use data on county-to-county travel times in 1930, constructed by Morin and Swisher (2016) using the United States' road network (see Figure B.2 in the Online Appendix). Specifically, we define $\textit{Proximity to Mexico}_{cty,1930} = 1/\textit{Travel Time}_{1930}(County, Station)$, where $\textit{Travel Time}_{1930}(County, Station)$ is the travel time by roads between the county and the closest chief border crossing stations. The instrumental variable is defined as:

$$IV_{cty} = \textit{Proximity to Mexico}_{cty,1930} \times \left(\frac{Pop^{MEX}_{cty,1900}}{Pop_{cty,1900}} \right). \tag{6}$$

The first term, $\textit{Proximity to Mexico}_{cty,1930}$, is negatively associated with the cost of local authorities to engage in repatriation measures because it was easier and cheaper to encourage (or force) repatriation if people could reach one of the border-crossing stations more quickly.[23] The second term captures the share of Mexicans workers in a county in 1900. It is positively related to the share of the Mexican population in 1930, given the persistence of migrant networks; hence, this term is correlated with the size of the population "at risk" of repatriation.

4.2 Data Sources and Descriptive Statistics

Linked Address Sample. A natural challenge in studying housing markets in the pre-Word War II United States is the lack of house-level data measuring the evolution of house prices. In this paper, we develop a novel automated matching technique to link addresses across the 1930 and 1940 Censuses from the IPUMS Restricted Complete Count Data (Ruggles et al., 2020). The address-

[22] In Texas (El Paso; Brownsville; Laredo), Arizona (Nogales; Douglas), and California (Calexico). In the Online Appendix, Figure B.1 show these border crossing stations location over the U.S.-Mexico border.

[23] One of the concerns with the measure of proximity to the Mexican border is that the origin of these border crossing stations could be endogenous to housing markets changes between 1930 and 1940. The available historical evidence suggests that these cities were gateways of the Mexico-U.S. migration decades before the repatriation. Escamilla-Guerrero (2020) describes in detail the importance of these entrance ports using data from the Mexican Border Crossing Records from the early years of the 20th century. According to the author, El Paso, Brownsville, Laredo, Nogales, and Douglas accounted for 81% of the registered crossings between 1906 and 1908. Although the information on the crossings in Calexico, CA, is limited for this period, the earlier accounts of its role as a port of entry also date from the beginning of the century (see, for instance, Romer (1922)).

matched sample allows us to track the evolution of each housing unit's house values, rents, and inhabitants characteristics across the 1930 and 1940 censuses. Our matching procedure relies on matching addresses based on the state, city, street name, and house number, which is described in more detail in the Online Appendix D. Our approach to link addresses across censuses is similar in essence to previous approaches proposed in the literature that link individuals across censuses based on their names (Abramitzky et al. (2012, 2014, 2021)). To the best of our knowledge, the first study to match addresses across the 1930 and 1940 Censuses is Akbar et al. (2022), which builds a sample of matched addresses for ten major northern cities. While our algorithms share the same principles, we extend this approach to construct a sample that covers the entire country, offering a more comprehensive spatial coverage of the evolution of house values and rents.

Our full 1930–1940 matched address sample contains 4.03 million linked addresses spanning over 900 U.S. cities.[24] We perform a series of sample restrictions. In studying the effects on house values and rents, we exclude the addresses that report both an owner and a renter or changed ownership status from 1930 to 1940. We also exclude households with more than 10 members to avoid outliers and transcription errors. We obtain the percentage change in house value and rents from the self-reported values in the census between 1930 and 1940. In addresses with multiple households, we aggregate this information to the address level using the median house value and the median rent reported by the households living in the same address. Finally, we obtain a sub-sample by keeping only the addresses in states with a sufficiently large Mexican population.[25]

We collect information about the percentage change in house values, the percentage change in rents, the average age of residents, the total number of residents, the share of Mexican and the share of U.S.-born residents, and the homeownership status of an address. Table 1 presents the summary statistics of these variables and compares them across full-count 1930 Census data (column 1), the full address-matched sample (column 2), and the two sub-samples for states more affected by the Mexican repatriation (columns 3 and 4). When comparing the full data with our matched sample, we conclude that, on average, the dwelling characteristics are quantitatively similar across the two datasets. Our matching procedure seems to favor houses with slightly larger shares of white or U.S.-born residents, or houses owned in 1930. The variables

[24] To the best of our knowledge, the first study to match addresses across the 1930 and 1940 Censuses is Akbar et al. (2022). The authors match addresses for ten cities in the U.S.-North (Baltimore, Boston, New York, Chicago, Cincinnati, Cleveland, Detroit, Philadelphia, Pittsburgh, and St. Louis) to study the erosion of African-American house value in pre-war urban areas.

[25] More specifically, we restrict the analysis to states that contained a share of Mexican workers greater than 0.25% of the total state workforce living in urban areas: Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana.

on the average house value and rents are similar for the two samples. When comparing the state-restricted samples (columns 3 and 4), we observe larger shares of Mexican residents and smaller shares of U.S.-born residents relative to columns 1 and 2. We also observe smaller house values and rents due to the sample restrictions.

— Place Table 1 About Here —

City Demographics, Immigration, and Economic Activity. To obtain measures of cities' economic and demographic characteristics, we use data from 868 U.S. cities that we can consistently identify in the 1930 and 1940 full-count U.S. Censuses (Ruggles et al., 2020).[26] The censuses provide the information used to construct our main variables to measure immigration flows.[27] They also provide information on economic and demographic characteristics used as controls in our estimations. The control variables include the *Average Age*, average *School Attendance*, share of *Unemployed* workers, which consists of the city-level averages of the worker's age, school attendance status, and share of unemployed workers among the working-age population. *Average Age* and *School Attendance* are important to control for the characteristics of the working-age population in each city. The share of *Unemployed* workers and *Sector Shares* aim to capture the heterogeneous effects of the Depression on housing market outcomes across cities associated with sector employment composition.

In addition, we use geographical and economic variables at the county level as controls. The information comes from the dataset assembled by Fishback et al. (2005) and Hornbeck (2012). In the 1930s, the Dust Bowl was a natural disaster that caused hardship in rural American states and induced migration out of the affected areas (Hornbeck, 2012, 2023). To measure and control for the exposure of a county to the Dust Bowl, we use the months of severe drought interacted with the share of farming land to measure the impact on a county of the Dust Bowl from Fishback et al. (2005) and the fraction of each county exposed to medium and high permanent soil erosion from Hornbeck (2012). From Fishback et al. (2005), we also use their county-level retail sales growth between 1929 and 1935 as a proxy for consumption and economic activ-

[26]We use the CITY variable from IPUMS to identify the city of residence for individuals located in identifiable cities. The variable is comparable across 1930 and 1940, but not all cities are identified across the two censuses. In 1930, the city of residence was defined as any city with more than 25,000 inhabitants, and in 1940, a city could only be identified if it was the central city of a metropolitan area.

[27]We also use the 1900 Census to construct the share of Mexicans in each county as of 1900 in our instrumental variable. Finally, we use the censuses from 1880 to 1920 to construct Figures 1, 2, and 3.

ity.[28] We use the log of the median house value in 1930 as an additional control to capture the contemporaneous conditions of the housing market.[29]

City-level outcome variables. To study the consequences of the Mexican repatriation on city-level housing market outcomes, we use the information on house prices from the U.S. Census and aggregate it to the city level. The 1930 and 1940 Censuses include the self-reported values of housing units and rents in nominal U.S. dollars. To reduce outlier influence when averaging out self-reported variables, we calculate the median house value and rent in each city from the working-age population not living in group quarters. In some specifications, we consider alternative percentiles of the within-city house value and rent distributions. We convert nominal values to real 1920 U.S. dollars using the Consumer Price Index from the Federal Reserve Bank Database (FRED) of the Federal Reserve Bank of St. Louis.

We use the number and value of building permits as additional indicators of city-level housing and construction activity. Building permits must be filed with local authorities before any construction occurs. We consider two types of building permits.

The first is the total value of building permits, taken from issues of *Dun & Bradstreet's Review*, a well-known business and financial publication in the 1920s and 1930s.[30] The value of building permits represents the cost of new commercial and residential buildings for 215 cities across the U.S. The building permit figures represent estimated building costs under permits issued to prospective builders within the corporate limits of the cities. They include new residential and non-residential buildings and additions, alterations, and repairs, excluding land costs. The data are compiled from reports furnished monthly to *Dun & Bradstreet, Inc.* by the building departments of the various cities. The second series on building permits is the number of building permits collected by Snowden (2006) from issues of the *Bulletin of the Bureau of Labor Statistics*. These permits refer to single-family houses authorized for construction in 250 cities.

[28]Considering we study housing markets in the 1930s, one may think we also need to control for New Deal spending. As discussed by Fishback et al. (2005), the New Deal endogenously targeted counties with severely deteriorated housing markets in periods *after* the drop in Mexican population. To avoid the well-known "bad controls" econometric problem (Angrist and Pischke, 2009), we choose not to include Fishback et al.'s (2005) New Deal relief expenditures variable in our controls.

[29]Previous studies have argued that the real-estate boom of the mid-1920s has contributed to the severity of the Great Depression (Goetzmann and Newman, 2010; Brocker and Hanes, 2014; White, 2014; Gjerstad and Smith, 2014). Therefore, we include the median house value in 1930 as an additional control variable to capture the across-city heterogeneity in the housing market conditions.

[30]A detailed description of the building permit value data is in Cortes and Weidenmier (2019).

The building permit *number* series thus more closely reflects residential real estate activity, whereas the building permits *values* are dominated by commercial and business construction. This fundamental difference in the construction of these series lets us consider both types of construction activity. However, it comes at the cost of precluding us from calculating a building permit-based price index (e.g., dividing the value by the number of building permits). We, therefore, rely on the Census' median house value as our primary variable proxying house prices.

Descriptive Statistics. Table 2 presents sample summary statistics. All growth rates and share variables are presented in percentages. We can see that the average city experienced a decrease in the Mexican population equal to 0.2% of the city's total population. There is substantial heterogeneity. San Benito and El Paso in Texas experienced the two greatest outflows. By 1940, they had lost Mexican population, equivalent to 17.8% (San Benito) and 14.5% (El Paso) of their total population. East Chicago, Indiana, part of Chicago's commuting zone, was the seventh most affected city. As the East Chicago example shows, some cities distant from the Mexican border felt a measurable effect of the Mexican repatriation.[31] States on the list of top 10 of the most affected cities include Texas, California, Indiana, and Arizona.[32] Figures B.3, B.4, B.5, and B.6 in the Internet Appendix illustrate the geographic span of our city-level housing variables. Despite the smaller number of cities shown in the building permits maps, our samples span a significant share of the U.S. territory, accounting for the most populated and economically relevant cities in that period.

— PLACE TABLE 2 ABOUT HERE —

5 The 1930s Mexican Repatriation and Housing

We conduct the empirical analysis in three parts. In the first part, we investigate the effects of the Mexican repatriation on the house level values and rents, particularly focusing on Mexican-occupied housing, which was more exposed to the out-migration shock, and which we expect to observe the largest effects. This allows us to precisely estimate the repatriation effects on the most exposed neighborhoods within each city. This part also includes the more nuanced results on the resident composition and ownership status of homes previously inhabited by Mexican immigrants. The second part of the analysis focuses on the effects on the house values

[31] See Simon (1974) for a detailed account of the Mexican repatriation in East Chicago, Indiana. The author estimates that by 1932, over a third of the city's Mexican population at the beginning of the decade had left the city.

[32] Table B.1 in the Online Appendix shows the top 10 cities in terms of Mexican outflow between 1930 and 1940.

of neighbors. Leveraging the house-level data, this part provides important results about the consequences of the repatriation of US-born residents living near Mexican immigrants. The third part of the analysis investigates the aggregate effects of the repatriation. The goal is to assess to what extent the Mexican repatriation mattered to city-level housing markets.

5.1 Effects of the Repatriation at the House Level

Considering the nature of the Mexican repatriation, a local shock due to the out-migration of a specific part of the population, it is plausible to expect that regions within a city were differentially affected, depending on where Mexicans lived. As we argued in Section 3, if Mexican immigrants were living concentrated in some neighborhoods, then the expected impact of the Mexican repatriation on housing should be large in those areas. For instance, Balderrama and Rodríguez (2006) argue that "small barrios virtually disappeared" and many homes were "abandoned by their owners" as a result of the Mexican repatriation. In this section, we describe the empirical strategy of our house-level analysis. Our goal is to understand the effects of the Mexican repatriation on house values and rents at the house level.

One may think that the ideal approach to study the within-city changes in rents and house values is to leverage the rich micro-level census data by focusing on the longitudinal samples of matched individuals across censuses that other scholars have recently created (Abramitzky et al., 2012, 2014; Feigenbaum, 2016; Abramitzky et al., 2021; Price et al., 2021). However, our question has a different nature. We are interested in the local effects of out-migration shocks, so using linked individual samples could raise various sample selection concerns. Because people are *mobile*, studying the changes in the house prices or rents of a given person may be contaminated by selection into different regions, neighborhoods, or houses. In studying housing, we can take advantage of the fact that houses are *immobile* to leverage the micro-level census data and avoid selection issues that can arise from the mobility of individuals.

We proceed by matching addresses from the IPUMS Restricted Complete Count Data (Ruggles et al., 2020). As discussed in Section 4.2, the address-matched sample allows us to track the evolution of house values and rents of each housing unit across the 1930 and 1940 Censuses. More details about our matching approach are provided in the Online Appendix D.

5.1.1 Impacts on House Values and Rents

We begin by estimating the effects of the Mexican repatriation on house prices and rents. With the address-matched sample available, we estimate the following house-level specification using two-stage least squares (2SLS) regression analysis with our instrumental variable IV_{cty}:

$$\underset{1930:40}{\Delta} Y_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h \tag{7}$$

$\Delta_{1930:40} Y_h$ is a house's 1930–1940 percentage change in its *House Value* or *Rents*. $\tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right)$ is the Mexican outflow between 1930 and 1940 instrumented by IV_{cty} in the city c, where the house is located; λ_s represents state fixed effects to capture state-specific, unobservable heterogeneity (e.g., differences in the intensity of the Great Depression between states); $\mathbf{X}_{h,1930}$ is the set of 1930 controls for house h that include the house-level *Average Age of Residents*, the *Number of Residents*, the *Share of Black Residents*, the *Share of Female Residents*, the house value or rent in 1930, the city-level *Average Age*, average *School Attendance*, the share of *Unemployed* workers, and county-level *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. The specifications also include a set of city-level employment *Sector Shares* as a *proxy* for the economic conditions of cities in 1930. The standard errors are clustered by state.

In studying the effects on individual house values and rents, we separate the sample into different types of houses. We define a Mexican-occupied house as an address that had 50% or more of their residents in 1930 of Mexican origin. We define a U.S.-born-occupied house as an address where all residents were U.S.-born and not of Mexican descent. Table 3 presents the estimates of the effect of repatriation on the percent changes in house values (columns 1 and 2) or rents (columns 3 and 4) for Mexican-occupied and U.S.-born-occupied houses. The table presents the estimates of the effect for Mexican-occupied houses (columns 1 and 3), and U.S.-born occupied houses (columns 2 and 4). The results show a large and statistically significant effect on Mexican-inhabited houses. We find that houses inhabited by Mexicans in 1930 devalued ten percentage points on average between 1930 and 1940 for every percentage point drop in the city's Mexican population. Houses rented by Mexicans in 1930 also faced decreased rental rates of over five percentage points for every percentage point of Mexican outflow.

To illustrate the economic significance of this effect, we can compare it to the median devaluation of Mexican-occupied houses in the period. The value of the median house owned by

Mexicans fell by 41% between 1930 and 1940. This means that the partial negative effect of the repatriation on Mexican-owned houses is equivalent to one-fourth ($10/41 = 25\%$) of the decline observed in the median Mexican-occupied house value distribution in our sample. The value of the median rent paid by Mexicans fell by 33% between 1930 and 1940. For rented units, the partial effect of the repatriation is equivalent to sixteen percent ($5.7/33 = 17\%$) of the decline observed in the median rent of Mexican-occupied houses in our sample over the 1930s. Interestingly, we do not find a statistically significant coefficient (at a 5% significance level) for the Mexican outflow in U.S.-born occupied houses' price change (rents or values).

— PLACE TABLE 3 ABOUT HERE —

5.1.2 Impact on Homeownership Status

According to the 1930 and 1940 Censuses questionnaires, when interviewed, individuals reported the value of their homes if owned or the monthly rental if rented. Therefore, this imposes a limitation on our baseline analysis by restricting the sample only to units that had the same homeownership status when the two censuses were taken. However, it is possible that the Mexican repatriation could not only affect housing prices but also have an impact on the probability of housing units changing their ownership status. In this section, we investigate whether the Mexican repatriation had an effect on the homeownership status of a house. Using the matched address sample, we estimate the effect of the repatriation on the probability of Mexican-occupied or U.S.-born occupied houses changing their homeownership status. We estimate the following house-level specification using two-stage least squares (2SLS) regression analysis:

$$\underset{1930:40}{\Delta} OS_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h \tag{8}$$

$\Delta_{1930:40} OS_h$ is a binary variable that equals one when there was a change in the ownership status of a home h between the 1930 and 1940 censuses. The rest of the variables are defined as in the previous section, and the specification includes the same set of controls and fixed effects. Standard errors are clustered by state.

Table 4 reports the results for Mexican-occupied houses (columns 1 and 3) or U.S.-born-occupied houses (columns 2 and 4). In columns 1 and 2, the dependent variable assumes value one if, conditional on a house being owned in 1930, it changed to a rental unit in 1940, and assumes value zero otherwise. We find that the Mexican repatriation decreased the likelihood that houses that were owned in 1930 would change into rental units. We find a negative coefficient for both types of houses, Mexican-occupied and U.S.-born-occupied, although the coefficient for Mexican houses is larger in absolute terms. In columns 3 and 4, the dependent variable assumes value one if, conditional on a house being rented in 1930, it changed to an owned inhabited unit, and zero otherwise. When focusing on rented units in 1930, the results are different between Mexican and U.S.-born occupied houses. The Mexican repatriation had a positive effect on the probability of rental units occupied by Mexicans in 1930 changing into owned property by 1940. However, the effect of the repatriation on the probability of a rental unit inhabited by U.S.-born changing into an owned property was negative. In other words, cities that repatriated more had a higher probability of turning rental units that were Mexican-occupied into owner-inhabited property but a lower probability of changing status for those homes occupied by U.S.-born. These results show that the houses previously inhabited by Mexican residents became increasingly less likely to be rented, suggesting a lower demand for rental units in Mexican neighborhoods.

— Place Table 4 About Here —

5.1.3 Impacts on Resident Type

In the previous sections, we show evidence that Mexican repatriation primarily affected Mexican-occupied housing (values and rents). One natural question is whether this translated into a change in the types of residents (Mexican-immigrant or U.S. born) in those houses inhabited by Mexicans in 1930. We take advantage of the matched address sample and estimate the impact of the Mexican repatriation on the change of resident composition of Mexican-occupied houses. We estimate the following house-level specification using two-stage least squares (2SLS) regression analysis:

$$\underset{1930:40}{\Delta} RC_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h \qquad (9)$$

$\Delta_{1930:40} RC_h$ is a binary variable that represents the type of residents in each housing unit by 1940. The rest of the variables are defined as before. The standard errors are clustered by state. Table 5 presents the results. Columns 1, 3, and 5 show the estimates, with the dependent variable being a binary that equals one if the house was still majorly inhabited by Mexicans in 1940. On the other hand, in columns 2, 4, and 6, the dependent variable is a binary that equals one if the house became inhabited solely by U.S.-born. All specifications restrict the sample to the houses inhabited by Mexican immigrants in 1930. When looking at all Mexican houses (columns 1–2), we find a positive and statistically significant coefficient for Mexican repatriation on the probability of a Mexican-inhabited house continuing to be inhabited by Mexicans in the next decade. We also find a negative, but similar in absolute value, coefficient in the probability of the house becoming inhabited by U.S.-born.

We then further restrict the sample to the houses inhabited by homeowners in 1930 (columns 3–4); and renters in 1930 (columns 5–6). Our results suggest the effects are driven by the rental units (columns 5–6), while we do not find statistically significant coefficients for the homeowner-inhabited units. These results suggest that, despite the impact on house prices and rents, the Mexican repatriation did not spur higher occupancy of U.S.-born in the housing units that were previously inhabited by Mexicans. Our results suggest that cities that repatriated more were less likely to have the Mexican-inhabited houses become U.S.-born inhabited. One potential interpretation of this result is that the anti-immigrant sentiment that would drive the repatriation efforts was also strongly associated with natives' preferences to live in areas away from the Mexican enclaves.

— Place Table 5 About Here —

5.2 Impacts on the neighbors of Mexicans

In our baseline results (Table 3), we do not find an average, statistically significant effect on the U.S.-born inhabited houses. However, it is possible that U.S.-born inhabited houses could still be affected by the repatriation, depending on how close they were to the Mexican-inhabited homes. In this section, we test the existence of an effect of the Mexican repatriation on houses that were occupied by U.S.-born in 1930 but were located near Mexican-occupied houses. The main challenge in testing for these effects is to determine which houses are near each other using the historical Census information.

To test for the existence of effects on U.S.-born-occupied houses located near Mexican houses, we adopt a strategy to identify the closest linked address to a Mexican-inhabited home. Following Logan and Parman (2017), Eriksson and Ward (2019), and Quincy (2022), we use the order in which households were registered in the original census records to the technical variables of the 1930 census to define next-door neighbors. The strategy, first introduced by Logan and Parman (2017), takes advantage of the way Census takers were instructed to collect information at the time by walking down one side of the street at a time.

Since our main goal is to study housing, we adapt this approach to identify not the next-door household but the next-door address. Combining this approach with our sample of linked addresses, we obtain two samples of houses. One with houses that had at least one Mexican house neighbor and another with houses that did not have Mexican houses as immediate next-door neighbors. For each of these samples, we estimate the specification presented at Eq. (7). The results are presented in Table 6.

Several insights emerge from these results. In column 1, we focus on the effects on the house values for homes inhabited by U.S.-born who were next-door neighbors of Mexicans. There, the coefficient for the Mexican repatriation is –3.6 percentage points on average. This means that, on average, U.S.-born inhabited houses that were neighbors of Mexicans had a decrease in their values of about 3.6 percentage points between 1930 and 1940 for every percentage point drop in the city's Mexican population. This is a large effect, both statistically and economically significant, suggesting the Mexican repatriation also caused a decrease in values for some U.S.-born occupied homes. Interestingly, the effect on the house value of U.S.-born neighbors is smaller than the one we find in Table 3 for the Mexican homes. In column 2, we look at the U.S.-born occupied homes that did not have Mexican neighbors. In this case, we cannot reject the null hypothesis of no effect of the Mexican repatriation on those homes. These results indicate that the effect of the repatriation of Mexicans in the 1930s was concentrated in the regions within the cities that had more Mexican inhabitants, with larger (in absolute terms) effects on the Mexican homes.

When focusing on the effects on the rents of neighbors, columns 3 and 4 show a different pattern. We do not find a statistically significant effect of the repatriation on rents of either type of home, Mexican or U.S.-born neighboring. While this prevents us from drawing precise conclusions about the effects on rental units neighboring Mexican homes, it may make sense for future research to test for the existence of effects on the rents of units neighboring immigrants in different settings.

— PLACE TABLE 6 ABOUT HERE —

5.3 Effects of the Repatriation at the City-Level

In the previous section, we show that the Mexican repatriation had larger effects in areas with Mexicans, more particularly in houses of Mexicans. A natural question follows: To what extent did the Mexican repatriation matter to city-level housing growth? In this section, we study the effects of repatriation on the aggregate housing market. We construct alternative outcome measures for the housing markets that are based on the full count census and, therefore, not associated with potential biases from the sample of linked houses. With the instrument available, we estimate the following specification using two-stage least squares (2SLS) regression analysis:

$$\underset{1930:40}{\Delta} Y_c = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right) + \lambda_s + \mathbf{X}_{c,1930} + \epsilon_c \tag{10}$$

where $\Delta_{1930:40} Y_c$ is a city's 1930–1940 growth rate in percentage terms of the housing market outcomes: median reported *House Value*; *Rents*; *Number of Building Permits*; and *Value of Building Permits*; $\tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right)$ is the instrumented Mexican outflow as defined before; λ_s represents state fixed effects; and $\mathbf{X}_{c,1930}$ is the set of 1930 city and county level controls we added in the specifications estimated in previous sections, which include the *Average Age*, average *School Attendance*, share of *Unemployed* workers, employment *Sector Shares*, and county-level *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. All regressions are weighted by the city's working-age population in 1930,[33] and standard errors are clustered by state.

Table 7 presents the estimates of the effect of repatriation on the growth rate of the number of building permits (columns 1–2); the effect on the growth rate of the value of building permits (columns 3–4); the effect on the growth rate of cities' median house value (columns 5–6); and the effect on the growth rate of cities' median rent (columns 7–8). Within each real estate outcome in Table 7, the first-ordered columns (columns 1, 3, 5, and 7) show the weighted least squares (WLS) estimates. The second-ordered columns (columns 2, 4, 6, and 8) present 2SLS results.

— Place Table 7 About Here —

The results reveal a negative and statistically significant relationship between the Mexican outflow and all the housing market outcomes. Specifically, a one standard deviation increase in exposure to the Mexican outflow (1 percentage point) leads to a 1.26 percentage points decrease in the average growth rate of the median house value (column 6) and a 0.88 percentage point decrease in the median rent (column 8) growth rate between 1930 and 1940. These are relatively

[33] We weight our specifications to correct for heteroskedasticity in the error term. In accordance with Solon et al. (2015), we perform a Breusch–Pagan test by first estimating Eq. (10) using OLS or 2SLS, and then regressing the squared residuals on the inverse of the population in each city. The coefficients on the inverse of the population are positive and statistically significant when testing for outcome variables that span over the full sample of cities, indicating the presence of heteroskedasticity. Therefore, weighting the specifications by the city working-age population increases the efficiency of our estimates.

large compared to the baseline growth rates of these variables in the period. On average, median house values decreased 43.2% while median rents decreased 30.6% in the period. In other words, a one standard deviation increase in exposure to the Mexican repatriation explains approximately 2.92% of the decrease in house values and 2.88% of rents.[34]

We also find that the repatriation negatively affected the growth rate of building permits. An increase of one standard deviation in the exposure to the Mexican outflow (1 percentage point) decreased the average growth rates of our leading indicator variables, the value of permits (–3.7 percentage points), and the number of building permits (–15 percentage points). To put these results in perspective, we can compare these values to the observed average growth rates in these indicators during 1930–40. The partial effect of a one standard deviation increase in exposure to the Mexican outflow represents approximately 7.4% and 8.7% of the building permit growth rates in terms of number and value, respectively.[35] In the next section, we explore the geographical heterogeneity in the exposure to the Mexican repatriation to further illustrate the implications of our city-level results.

To illustrate our city-level housing market findings, we compute a "quasi-counterfactual" exercise described in the Online Appendix C. We calculate the predicted growth rates for different housing-market outcomes in U.S. cities in a hypothetical scenario where the Mexican repatriation never occurred. Assuming a simplified counterfactual outflow of Mexicans from our first-stage regressions and abstracting away from general equilibrium effects, we predict that the growth rates would have increased substantially, especially in the cities near the US-Mexico border.

5.4 Summary of Results and Discussion of Mechanisms

To put our findings from all sections into perspective, we combine the estimates of our baseline specifications to compare the results across the different aggregation levels in Figure 6. Panel A shows the impacts of the Mexican Repatriation on house values, while Panel B shows the estimated coefficients for rents. The effect on house values monotonically increases in the level of aggregation, with the largest impact concentrated in Mexican houses. The results for rents suggest a similar relationship, with the exception of the neighborhood-level aggregation. Taken together, our results suggest that the Mexican repatriation had a strong nega-

[34]In Section B.4 of the Online Appendix, we find that the Mexican repatriation had statistically significant effects across different percentiles of the house value and rent distributions.

[35]In Section B.5 of the Online Appendix, we show that our city-level results are robust to different sample restrictions, such as excluding states with a low presence of Mexicans.

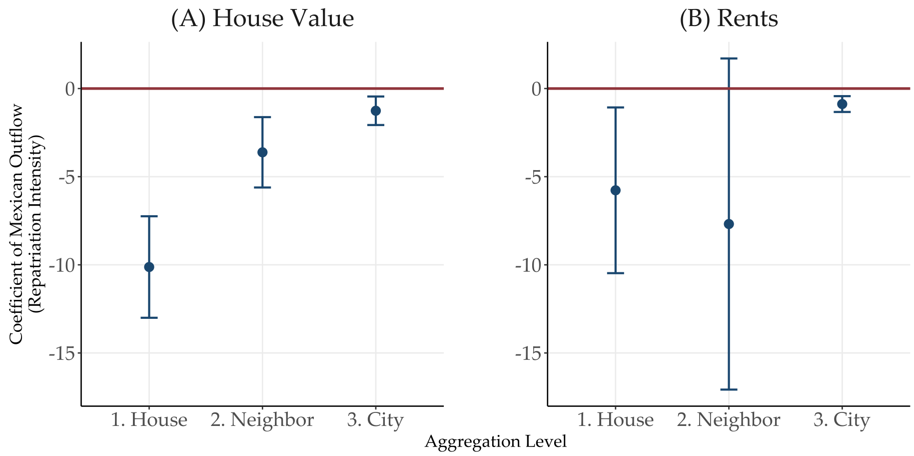


Figure 6. Summary of Results by Aggregation Level. This figure plots the estimated coefficients of our preferred specifications in each of the three levels of analysis: house, neighbor, and city levels.

tive impact on local housing markets, particularly concentrated in those neighborhoods predominantly occupied by Mexican immigrants.

Our house-level analysis provides some insight into the channels through which the repatriation affected housing markets. The larger effects on house values and rents for Mexican-occupied houses (Table 3) and the spillover effects on U.S.-born neighbors of Mexican houses (Table 6) suggest that the decline in housing demand was driven both by the direct effect of Mexican households leaving and potential spillovers to nearby U.S.-born households. These results, combined with the patterns identified in Eq. (9) with the repatriation being associated with lower probabilities of a change in the resident type from Mexican to U.S.-born, are consistent with our theoretical predictions in the presence of high residential segregation for Mexican immigrants living in the United States.

Another mechanism through which the Mexican repatriation could have affected housing markets is housing supply. In 1930, approximately 12.7% of Mexican immigrants worked in the construction or construction-related, durable goods manufacturing sectors.[36] Section B.3 in the Online Appendix shows that the repatriation reduced the employment of Mexicans in construction and that the U.S.-born increased their employment participation in construction proportionally, while the overall employment growth in the construction sector stagnated.

Despite this, our findings on the negative effects of repatriation on building permits (Table 7) provide insights into changing expectations about future housing market conditions. The reduction in building permit activity in areas more exposed to repatriation suggests that the repatri-

[36]See Table B.3 in Appendix B for details on the employment of Mexican workers by industry in 1930.

ation episode likely affected expectations about future housing demand and prices—which are crucial forces behind housing price cycles (Kaplan et al., 2020).

6 Identification Validity and Robustness

6.1 Instrument Validity

In working with instrumental variables, there are some typical concerns regarding the validity of the identifying assumptions, most commonly the relevance and the exclusion restriction. In this section, we present some standard tests to validate our constructed instrument. We begin by estimating the first-stage regressions in Table 8. Columns 1 and 2 present the first stage estimates in the house-level sample, and columns 3 and 4 show them at the city level. The coefficients for our IV are positive and statistically significant, while the *F*-statistics are large and statistically significant in all specifications, suggesting our IV is strong, alleviating concerns of weak instrument bias.[37]

— Place Table 8 About Here —

Another concern regarding our instrumental variable approach is whether our IV satisfies the exclusion restriction. Our instrumental variable approach requires that the Mexican settlements in 1900 interacted with the proximity to the U.S.-Mexico border are not correlated with unobserved factors that determined the housing market changes in 1930–1940, after controlling for demographic and economic local characteristics, state fixed effect and sector employment share. One potential concern is that the IV is mechanically correlated with the intensity of the Great Depression. Our motivation to use the IV approach is precisely that it mitigates this mechanical relationship with the economic impact of the Great Depression.

We run a series of tests to analyze the partial correlation between our IV and the intensity of the Great Depression in each city. We begin by using census data on each city's change in total unemployment between 1930 and 1940, normalized by the total working-age population as a measure of the economic conditions from the Great Depression. We then use the change in unemployment in the agricultural, and non-agricultural sectors as two complementary measures for

[37]Because our instrumental variable is composed of the interaction between two terms, we can also test for the overidentification hypothesis using both terms separately as instruments and performing a Sargan–Hansen test as recommended by Goldsmith-Pinkham et al. (2020). Our overidentification tests fail to reject the null, suggesting that the parameter estimates are similar among estimators and further validating our instrumental variable approach.

different dimensions of the intensity of the Great Depression. In addition to the unemployment-based measures, we rely on the data collected by Fishback et al. (2005) on the growth rate of retail sales for each U.S. county as an alternative measure. Formally, we estimate:

$$\Delta GD_c = \alpha + \beta \cdot IV_{cty} + \lambda_s + \mathbf{X}_{c,1930} + \epsilon_c, \tag{11}$$

where ΔGD_c is one of the measures of the intensity of the Great Depression in city c: the 1930–1940 change in total unemployment; 1930–1940 change in unemployment in agriculture sectors; 1930–1940 change in unemployment in non-agriculture sectors; and the 1929–1935 growth rate of retail sales in the county where city c is located. Other variables are defined as before. Results are in Table 9 and show that our instrument is not statistically significantly correlated with important measures of employment and consumption. These findings suggest that our instrumental variable is not associated with measures of aggregate economic activity during the Great Depression, consistent with the exclusion restriction requirement for IV validity.

— Place Table 9 About Here —

Finally, we examine whether our constructed instrumental variables capture variation in the 1930–1940 outflow of migrants from other countries. If we reject the null hypothesis that the instrument is not linearly associated with the outflow of immigrants of other nationalities, then this could raise concerns about the validity of the exclusion restrictions. For this test, we choose three groups of immigrants: (i) *Latin Americans (other than Mexicans)* because of their cultural and occupational similarity to the Mexican immigrants; (ii) *Canadians* because of the geographic similarity to Mexico in terms of being a neighbor country to the U.S.; (iii) *Asians* because immigrants from Asia, especially of Chinese origin, were the first group of immigrants to be targeted by immigration policies that aimed to limit entry based on race or country of origin. Another main concern is whether the instrument is correlated with the exposure to the 1920s border closures, which substantially constrained immigration from European countries (Abramitzky et al., 2023). To test for this, we use the two quota exposure measures from Abramitzky et al. (2023). Table 10 presents the result of estimating a specification equivalent to the first-stage regression but using the outflow of different nationalities or the quota exposure as the dependent variable instead of the outflow of Mexicans.

The results from Table 10 show that none of the specifications present a statistically significant coefficient between our instrumental variable and the outflow of immigrants from other nationalities or the quota exposure measures, a reassuring result that the instrument is not contaminated by unobserved factors driving the outflow rates of different immigrant groups.

— Place Table 10 About Here —

In the online appendix, we also show that our estimates are robust to the inclusion of additional variables capturing the pre-trends in the population growth of non-Mexicans and suggest that these do not influence our main results (Table B.4). Finally, our estimates are also robust to controlling for other major events of the time, such as the 1920s immigration quotas (Abramitzky et al., 2023), the first wave of the Great Migration (Boustan, 2010; Derenoncourt, 2022), and residential racial segregation (Logan and Parman, 2017) (see Table B.7).

7 Concluding Remarks

In this paper, we evaluate the effects of the United States Mexican repatriation of the 1930s on housing markets. Housing is a crucial channel through which migration affects the local economy and wealth distribution. However, most of what we know about the effects of migration on housing comes from studies that focus on the inflows of immigrants. This paper is the first to empirically quantify the impact of out-migration on housing. Making this distinction when studying housing markets is indispensable. Because housing is durable, and housing investment is naturally irreversible, asymmetric effects on prices may arise.

This paper studies one of the largest ethnically motivated migration shocks in U.S. history to examine the impact of an out-migration shock on local housing, the United States' Mexican repatriation of the 1930s. To leverage the rich micro-level data from the census, we develop a novel automated matching technique to link addresses across the 1930 and 1940 censuses. To isolate the effect of the Mexican repatriation, we employ an instrumental variable approach that combines the historical presence of Mexican immigrants in the U.S. with a measure of the cost of repatriating workers (the proximity to the U.S.-Mexico border based on the U.S. road infrastructure).

We find that the value of houses inhabited by Mexicans in 1930 devalued by an average of ten percentage points between 1930 and 1940 for every percentage point drop in a city's Mexican population. Rents on houses occupied by Mexicans in 1930 also fell by more than five percentage points for every percentage point of Mexican outflow. We find that the repatriation also mattered for the evolution of city-level housing market outcomes. The repatriation decreased the growth rates of cities' median house value, rents, and the value of building permits.

The renewed political rhetoric against immigration, including a rise in the advocates for repatriations in many developed countries, suggests that these types of immigration policies have found support among some voters. What lessons can we learn from the Mexican repatriation of 1930 about how the repatriation policies can influence modern housing markets? While the paper focuses on the 1930s Mexican repatriation, our findings can offer insights into modern-day immigration policies and debates, illustrating how forced migrations and deportations can have significant and complex impacts on local economies, extending beyond the labor markets to affect housing markets. We find that implementing a large-scale repatriation would be quite costly to housing growth. Our findings suggest strong negative effects on house prices, particularly concentrated in the areas where the immigrant group targeted by the policy lived. We also find no clear benefit to the local native residents. In some cases, natives were also negatively affected, as showed by the devaluation of house values for those U.S.-born who were neighbors of Mexican families. At the city level, the slower growth in these housing-market outcomes suggests that repatriation policies can have impacts on different types of real estate activity, including single-family homes and commercial construction. Therefore, our results serve as a cautionary tale for policymakers in advanced and emerging economies engaged in pursuing repatriation policies. Repatriations are episodes with long-lasting impacts on the cultural and social dimensions but also leave footprints on economic activity. Further research is needed to understand the long-term consequences of such policies, including their social and cultural ramifications.

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Table 1. House-level descriptive statistics. This table presents the mean statistic for variables obtained at the house level. *Average Resident Age* is the average age for all working-age residents within the same address in the 1930 Census. *Dwelling Size* reports how many people lived within the entire dwelling in 1930. *Share Mexicans* is the number of working-age Mexican immigrants in any given address as a share of the total number of working-age residents in that same address. Similarly, *Share Black U.S.-born*, *Share White U.S.-born*, and *Share U.S.-Born* are the shares of black, white, or total U.S.-born residents in an address, respectively. These measures are constructed using the information of race and place of birth of each resident from the 1930 Census. *Share Ownership* indicates the share of residents that were house owners in any given address. In studying the changes in house values and rents, we exclude from the sample addresses that report both an owner and a renter or changed ownership status from 1930 to 1940. *House Value* and *Rent* are the self-reported house value and rent in 1930 U.S. dollars, respectively. For addresses with multiple households, we aggregate this information using the median house value and the median rent reported by the households in the same address. Panel A of the table below presents the summary statistics of these variables and compares them across the complete-count 1930 Census data (column 1), the full address-matched sample (column 2), and the equivalent complete (column 3) and matched (column 4) samples when restricting to states that contained a share of Mexican workers greater than 0.25% of the total state workforce in the studied cities: Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, Indiana. Panel B presents the mean characteristics in 1930 for Mexican or U.S.-born houses in the restricted and matched sample. Mexican-occupied houses are defined as those that had more than half of their residents born in Mexico, and U.S.-born-occupied houses are defined as those where all residents were born in the U.S. and have no Mexican descent.

Panel A. Comparison between samples

	Unrestricted		Restricted	
	Complete	Matched	Complete	Matched
Average Resident Age	37.64	37.88	37.98	38.01
Dwelling Size	3.91	4.16	3.59	3.81
Share Mexicans	0.006	0.005	0.034	0.024
Share U.S.-Born	0.76	0.79	0.83	0.84
Share Black U.S.-Born	0.08	0.07	0.06	0.06
Ownership	0.41	0.52	0.44	0.53
Rent (1930 USD)	58.48	54.56	51.19	49.89
House Value (1930 USD)	7,598.82	7,621.36	6,310.36	6,247.34
Observations	14,324,076	4,028,213	2,288,532	722,881

Panel B. Comparison between Mexican and U.S.-born houses in 1930

	Restricted and Matched Sample	
	Mexican Houses	U.S.-Born Houses
Average Resident Age	34.98	37.70
Dwelling Size	5.07	3.70
Share of Black Residents	0.01	0.07
Share of Female Residents	0.51	0.54
Ownership	0.33	0.52
Rent (1930 USD)	32.44	48.93
House Value (1930 USD)	2,668.34	6,049.60
Observations	19,000	540,919

Table 2. City-level descriptive statistics. This table presents summary statistics for variables used in our empirical analysis. *Mexican Outflow* is constructed in Eq. (5) and is the city-level change in the Mexican labor force between 1930 and 1940 divided by the city's total working-age population in 1930. The dependent variables (the number of building permits growth rate, the value of building permits growth rate, the median house value growth rate, and the median rent growth rate are the main city-level real estate market outcomes used in our regressions and are described in detail in Section 4.2. Section 4.1 describes the construction of our instrumental variable, which combines the proximity to the Mexican border (calculated using travel times in 1930 throughout the U.S. road network to the nearest Mexican border crossing station) interacted with the historical Mexican settlements (share of Mexican immigrants in 1900). The baseline control variables are from the 1930 Census and consist of the city-level averages of the worker's age, school attendance status, and share of unemployed workers. We use additional county-level variables as the retail sales growth (a measure for the Great Depression intensity) from Fishback et al. (2005). We also control for the intensity of the Dust Bowl environmental catastrophe using county-level measures for months of drought interacted with the county's farmland share from Fishback et al. (2005), and the fraction of each county exposed to medium and high permanent soil erosion during the 1930s from Hornbeck (2012). Our full sample contains 868 U.S. cities.

Variables	**N**	**Mean**	**SD**	**Min**	**Median**	**Max**
Mexican Outflow, 1930–1940	868	0.204	1.086	-0.559	0	17.797
Dependent Variables (1930–1940)						
Median House Value Growth	868	-43.201	10.881	-83.217	-44.058	4.892
Median Rent Growth	868	-30.577	10.195	-59.721	-32.869	51.044
Number of Building Permits Growth	239	179.73	344.516	-100	84	2780
Value of Building Permits Growth	194	-42.886	42.443	-97.681	-50.715	176.786
Instrumental Variable						
IV [1900 settlement $\times$ proximity to Mexico]	868	0.093	0.745	0	0	11.284
City controls (1930)						
Average Age	868	37.16	1.395	32.659	37.313	41.494
School Attendance	868	3.957	1.672	1.413	3.54	13.083
Unemployment	868	9.506	3.657	1.343	9.081	36.179
County controls						
Retail Sales Growth (1929-35)	868	-0.216	0.127	-0.801	-0.211	0.203
Months Drought $\times$ Farm Share (1930)	868	13.141	12.072	0	9.929	72.737
Dust Bowl Medium Erosion Exposure	868	7.147	21.736	0	0	100
Dust Bowl High Erosion Exposure	868	1.569	9.372	0	0	99.533

Table 3. Effects on house-level prices. This table presents our baseline estimates of the effect of the Mexican repatriation on house values and rents. We estimate the house-level regressions from Eq. (7):

$$\underset{1930:40}{\Delta} Y_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty}\right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h,$$

where $\Delta_{1930:40} Y_h$ is a house's 1930–1940 percentage change in its *House Value* or *Rent*. $\tilde{O}^{MEX}_{1930:40,c} \left(IV_c\right)$ is the Mexican outflow between 1930 and 1940 in the city c where the house is located instrumented by IV_c, as defined in Eq. (6); λ_s represents state fixed effects; and $\mathbf{X}_{h,1930}$ is the set of variables used as controls for house h in 1930, which include (i) house-level characteristics *Average Age of Residents*, the *Dwelling Size*, the *Share of Black Residents*, the *Share of Female Residents*, and the house value or rent reported in 1930; (ii) city-level variables, the *Average Age*, average *School Attendance*, and the share of *Unemployed* workers; (iii) county-level variables, *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. All specifications also include a set of city-level employment *Sector Shares* as a *proxy* for the economic conditions of cities in 1930. We define a Mexican-occupied house as an address that had 50% or more of their residents in 1930 of Mexican origin. U.S.-born-occupied houses are addresses that had only U.S.-born and no Mexican descendent residents in 1930. The table presents the estimates of the effect for Mexican-occupied houses (columns 1 and 3) and U.S.-born-occupied houses (columns 2 and 4). In columns 1 and 2, we restrict the sample to the houses that were owned in 1930 and 1940. In columns 3 and 4, we restrict it to houses that were rented in 1930 and 1940. All regressions restrict the sample to states with more than 0.25% Mexican population living in urban areas (Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana). Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	House value change (%)		Rent change (%)	
	Mexican-Occupied	U.S.-born-Occupied	Mexican-Occupied	U.S.-born-Occupied
	(1)	(2)	(3)	(4)
Mexican Outflow	–10.124***	–0.809	–5.772**	–6.438*
	(1.469)	(0.897)	(2.398)	(3.426)
Observations	3,578	176,165	9,459	167,142
R-squared	0.024	0.001	0.010	0.003
Kleibergen–Paap F-statistic	781.94	174.43	486.27	109.12
Controls (House)	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓
State FE	✓	✓	✓	✓

Table 4. Effects on house-level ownership status. This table presents our house-level regressions from estimating Eq. (9):

$$\underset{1930:40}{\Delta} OS_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h,$$

where $\Delta_{1930:40} OS_h$ is an indicator variable for the ownership status of the house in 1930. In columns 1 and 2, it assumes value one if, conditional on a house being owned in 1930, it changed to a rental unit in 1940, and assumes value zero otherwise. In columns 3 and 4, it assumes value one if, conditional on a house being rented in 1930, it changed to an owned inhabited unit, and zero otherwise. We further restrict the sample to Mexican-occupied houses (columns 1 and 3) or U.S.-born-occupied houses (columns 2 and 4). $\tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right)$ is the Mexican outflow between 1930 and 1940 in the city c where the house is located instrumented by IV_{cty}, as defined in Eq. (6); λ_s represents state fixed effects; and $\mathbf{X}_{h,1930}$ is the set of variables used as controls for house h in 1930, which include (i) house-level characteristics *Average Age of Residents*, the *Dwelling Size*, the *Share of Black Residents*, the *Share of Female Residents*, and the house value or rent reported in 1930; (ii) city-level variables, the *Average Age*, average *School Attendance*, and the share of *Unemployed* workers; (iii) county-level variables, *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. All specifications also include a set of city-level employment *Sector Shares* as a *proxy* for the economic conditions of cities in 1930. All regressions are restricted to states with more than 0.25% Mexican population share (Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana). Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	Ownership Status Changed Owned houses in 1930		Ownership Status Changed Rented units in 1930	
	Mexican-Occupied	U.S.-born-Occupied	Mexican-Occupied	U.S.-born-Occupied
	(1)	(2)	(3)	(4)
Mexican Outflow	–1.153**	–0.496***	0.786**	–0.308**
	(0.460)	(0.053)	(0.310)	(0.125)
Observations	5,586	254,781	12,261	243,384
R-squared	0.013	0.010	0.031	0.018
Kleibergen–Paap *F*-statistic	3,803.70	153.34	568.58	127.81
Controls (House)	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓
State FE	✓	✓	✓	✓

Table 5. Effects on resident type. This table presents our house-level regressions for estimating the impact of the Mexican repatriation on the probability of a house that was inhabited by Mexicans in 1930 to either still be inhabited by Mexicans in 1940 or be inhabited by U.S.-born workers. We estimate Eq. (9):

$$\underset{1930:40}{\Delta} R_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h,$$

where $\Delta_{1930:40} R_h$ is a dummy variable that equals one if: (i) the house is inhabited by Mexicans in 1940 (columns 1, 3, and 5); or if the house becomes inhabited by US-born in 1940 (Columns 2, 4, and 6). $\tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right)$ is the Mexican outflow between 1930 and 1940 in the city c where the house is located instrumented by IV_{cty}, as defined in Eq. (6); λ_s represents state fixed effects; and $\mathbf{X}_{h,1930}$ is the set of variables used as controls for house h in 1930, which include (i) house-level characteristics *Average Age of Residents*, the *Dwelling Size*, the *Share of Black Residents*, the *Share of Female Residents*, and the house value or rent reported in 1930; (ii) city-level variables, the *Average Age*, average *School Attendance*, and the share of *Unemployed* workers; (iii) county-level variables, *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. All specifications also include a set of city-level employment *Sector Shares* as a *proxy* for the economic conditions of cities in 1930. In columns 1 and 2, we restrict the sample to all houses inhabited by Mexican immigrants (at least 50% of the residents) rented or owner-occupied in 1930; in columns 3 and 4, we further restrict the sample to only owner-occupied houses in 1930, and in columns 5 and 6, we restrict it to rented units in 1930. All regressions are restricted to states with more than 0.25% Mexican population share (Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana). Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	All Houses		Owned units in 1930		Rented units in 1930	
	Mexican-Occupied in 1940	U.S.-born-Occupied in 1940	Mexican-Occupied in 1940	U.S.-born-Occupied in 1940	Mexican-Occupied in 1940	U.S.-born-Occupied in 1940
	(1)	(2)	(3)	(4)	(5)	(6)
Mexican Outflow	1.434**	–1.433**	0.077	0.668	2.508***	–2.606***
	(0.491)	(0.487)	(0.872)	(0.550)	(0.521)	(0.662)
Observations	18,786	18,786	3,578	3,578	9,459	9,459
R-squared	0.068	0.056	0.049	0.057	0.096	0.080
Kleibergen–Paap F-statistic	1,339.3	1,339.3	781.94	781.94	486.27	486.27
Controls (House)	✓	✓	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓

Table 6. Effects on neighbors. This table presents the estimates of the effect of the Mexican repatriation on house values and rents of neighbors. We estimate the house-level regressions from Eq. (7):

$$\underset{1930:40}{\Delta} Y_h = \alpha + \gamma \cdot \tilde{O}^{MEX}_{1930:40,c} \left(IV_{cty} \right) + \lambda_s + \mathbf{X}_{h,1930} + \epsilon_h,$$

where $\Delta_{1930:40} Y_h$ is a house's 1930–1940 percentage change in its *House Value* or *Rent*. $\tilde{O}^{MEX}_{1930:40,c} \left(IV_c \right)$ is the Mexican outflow between 1930 and 1940 in the city c where the house is located instrumented by IV_c, as defined in Eq. (6); λ_s represents state fixed effects; and $\mathbf{X}_{h,1930}$ is the set of variables used as controls for house h in 1930, which include (i) house-level characteristics *Average Age of Residents*, the *Dwelling Size*, the *Share of Black Residents*, the *Share of Female Residents*, and the house value or rent reported in 1930; (ii) city-level variables, the *Average Age*, average *School Attendance*, and the share of *Unemployed* workers; (iii) county-level variables, *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. All specifications also include a set of city-level employment *Sector Shares* as a *proxy* for the economic conditions of cities in 1930. In all specifications, we restrict the sample to only houses occupied by U.S.-born in 1930. We define a house as having a Mexican neighbor if it has an adjacent house with 50% or more of their residents in 1930 of Mexican origin. A house has a U.S.-born-neighbor if it has an adjacent house with only U.S.-born and no Mexican descendent residents in 1930. The table presents the estimates for houses with Mexican neighbors (columns 1 and 3) and U.S.-born neighbors (columns 2 and 4). In columns 1 and 2, we restrict the sample to the houses that were owned in 1930 and 1940. Columns 3 and 4 restrict the sample to houses that were rented in 1930 and 1940. All regressions restrict the sample to states with more than 0.25% Mexican population living in urban areas (Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana). Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	House value change (%)		Rent change (%)	
	Mexican-Neighboring	U.S.-born-Neighboring	Mexican-Neighboring	U.S.-born-Neighboring
	(1)	(2)	(3)	(4)
Mexican Outflow	–3.617***	–0.988	–7.685	–6.888
	(1.018)	(0.868)	(4.792)	(4.113)
Observations	2,510	119,021	3,688	106,902
R-squared	0.022	0.001	0.005	0.003
Kleibergen–Paap *F*-statistic	354.60	216.29	301.32	117.08
Controls (House)	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓
State FE	✓	✓	✓	✓

Table 7. Effects on city-level housing, 1930–1940. This table presents our baseline regressions from estimating Eq. (10):

$$\underset{1930:40}{\Delta} Y_c = \alpha + \beta \cdot \tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right) + \lambda_s + \mathbf{X}_{c,1930} + \epsilon_c,$$

where $\Delta_{1930:40} Y_c$ is a city's 1930–40 growth rate in one of its housing market outcomes: *Number of Building Permits*; *Value of Building Permits*; median reported *House Value*; and median reported *Rent*; $\tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right)$ is the Mexican outflow between 1930 and 1940 in city c instrumented by IV_{cty}, which is the instrument defined in Eq. (6); λ_s represents state fixed effects to capture state-specific, unobserved heterogeneity; and $\mathbf{X}_{c,1930}$ is a set of 1930 city-level controls, which include the population *Average Age*, average *School Attendance*, and share of *Unemployed* workers. The table presents the estimates of the effect of repatriation on the growth rates of the number of building permits (columns 1 and 2), the building permits value (columns 3 and 4), the cities median house value (columns 5 and 6), and cities median rent (columns 7 and 8). Columns 1, 3, 5, and 7 show *weighted least squares* estimates of Eq. (10) without any instrumental variable or control. Columns 2, 4, 6, and 8 present the 2SLS results with IV_{cty} as an instrument for the *Mexican Outflow* and using the set of control variables and a set of city-level employment *Sector Shares* as a *proxy* for the economic conditions of cities in 1930. All regressions are weighted by the total working-age population of the city in 1930. Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	Building Permit Growth (Number)		Building Permit Growth (Value)		Median House Value Growth		Median Rent Growth	
	WLS (1)	2SLS (2)	WLS (3)	2SLS (4)	WLS (5)	2SLS (6)	WLS (7)	2SLS (8)
Mexican Outflow	–5.595	–15.701	–2.774***	–3.736***	–0.963*	–1.260***	–0.683***	–0.880***
	(4.389)	(9.662)	(0.578)	(1.322)	(0.525)	(0.413)	(0.172)	(0.229)
Observations	237	237	193	193	868	868	868	868
R-squared	0.42	0.27	0.49	0.14	0.43	0.49	0.35	0.23
Kleibergen–Paap *F*-statistic		1,507.71		570.96		239.18		239.18
Controls (City)		✓		✓		✓		✓
Sector Shares (16)		✓		✓		✓		✓
State FE		✓		✓		✓		✓

Table 8. Instrument validation: first stage regressions. This table presents results for the first-stage regressions of the instrumental variable approach and is one of the IV validation tests that we discuss in Section 6.1. The first-stage regressions are given by:

$$O^{MEX}_{1930:40,c} = \alpha + \xi \cdot IV_{cty} + \epsilon_c,$$

where $O^{MEX}_{1930:40,c}$ is the Mexican outflow between 1930 and 1940 in any given city c. IV_{cty} combines the proximity to the Mexican border interacted with the share of Mexican immigrants in 1900. Columns 1 and 2 show the first stage regression at the address level sample, while columns 3 and 4 show the estimates at the city level. In columns 1 and 3, we estimate the equation above. Columns 2 and 4 add state fixed effects, sector employment shares, city population weights (i.e., weighted least squares estimation), and the set of controls which include: (i) house-level characteristics *Average Age of Residents*, the *Dwelling Size*, the *Share of Black Residents*, the *Share of Female Residents*, and the house value or rent reported in 1930; (ii) city-level variables, the *Average Age*, average *School Attendance*, the share of *Unemployed* workers; (iii) county-level variables, *Retail Sales Growth*, *Drought Exposure*, and the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. Controls are described in more detail in Table 2. In the city-level specifications (columns 3 and 4), we exclude the house-level control variables. The table also includes the Kleibergen–Paap F-statistics on the excluded instrument for each IV specification to test for weak identification. Standard errors are clustered by state for all specifications. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	Mexican Outflow			
	House-Level		*City-Level*	
	(1)	(2)	(3)	(4)
IV_{cty} [1900 Settlement × Proximity to Mexico]	1.361***	1.507***	1.194***	1.341***
	(0.055)	(0.187)	(0.014)	(0.087)
Kleibergen–Paap F-statistic	192.79	65.12	7,278.20	226.68
Observations	239,423	239,423	868	868
R-squared	0.68	0.77	0.67	0.76
Weighted		✓		✓
Controls (House)		✓		
Controls (City)		✓		✓
Sector Shares (16)		✓		✓
State FE		✓		✓

Table 9. Instrument validation: Mexican outflow and IV correlation with Great Depression intensity measures. This table is one of the IV validation tests we describe in Section 6.1. The construction of our IV is described in Section 4.1. Regressions are at the city level and weighted by cities' working-age population in 1930. The dependent variables are measured in percentage change. This set of results uses census information on the city's change in total number of unemployed workers and unemployed workers in agriculture and non-agriculture between 1930 and 1940 and the change in retail sales between 1929 and 1935. We estimate the following specifications:

$$\underset{1930:40}{\Delta} GD_c = \alpha + \beta \cdot IV_{cty} + \lambda_s + \mathbf{X}_{c,1930} + \epsilon_c,$$

where $\Delta_{1930:40}\ GD_c$ is one of the measures of the adverse economic conditions accrued from the Great Depression: the change in the number of unemployed workers, unemployed workers in agriculture sectors, unemployed workers in non-agriculture sectors, and retail sales growth. The first three measures are calculated using census information on the city's change in the unemployed population between 1930 and 1940, normalized by the total working-age population in 1930. The retail sales-based measure is the growth rate in retail sales between 1929 and 1935 in each county from Fishback et al. (2005). All specifications include the set of controls (1930 city and county-level), state fixed effects, and sector employment shares. Column 4 includes all the previous variables except retail sales growth, which is the dependent variable in that specification. Standard errors are clustered by state for all specifications. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Panel A. Endogenous Variable: Mexican Outflow

	Total Unemployed	Unemployed in Agriculture	Unemployed in Non-agriculture	Retail Sales Growth
	(1)	(2)	(3)	(4)
Mexican Outflow	–0.073	–0.006	–0.068	–0.129
	(0.045)	(0.014)	(0.047)	(0.128)
Observations	868	868	868	868
R-squared	0.69	0.57	0.72	0.62
Controls (City)	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓
State FE	✓	✓	✓	✓

Panel B. Instrumental Variable: [1900 Settlement × Proximity to Mexico]

	Total Unemployed	Unemployed in Agriculture	Unemployed in Non-agriculture	Retail Sales Growth
	(1)	(2)	(3)	(4)
IV_{cty}	0.018	0.019	-0.001	0.013
	(0.056)	(0.019)	(0.046)	(0.242)
R-squared	0.68	0.57	0.72	0.62
Observations	868	868	868	868
Controls (City)	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓
State FE	✓	✓	✓	✓

Table 10. Instrument validation: instrumental variable and correlation with outflow measures from other nationalities and the 1924 quota exposure. This table is one of the IV validation tests we describe in Section 6.1. It presents the results for the regression of the outflow of immigrants from other nationalities $O^n_{1930:40,c}$ or exposure to the 1920s quotas from Abramitzky et al. (2023) on our instrumental variable. The construction of the IV is described in Section 4.1. Specifically, the regressions are:

$$O^n_{1930:40,c} = \alpha + \beta \cdot IV_{cty} + \mathbf{X}_{c,1930} + \epsilon_c.$$

We estimate the equation above for IV_{cty}, adding the full set of controls (1930 Census city-level *Average Age*, *School Attendance*, and share of *Unemployed* workers, and county-level *Drought Exposure*, which is the interaction on the number of severe drought months faced by a county and the county's share of farming land; the *Retail Sales Growth* rate between 1929 and 1935; the log of the city-level median house value in 1930; the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s). All specifications include state fixed effects, sector employment shares from 1930, and city population weights. In all regressions, we exclude cities with a net inflow of Mexicans from the sample. Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	Outflow Measures				**1920s Quota Exposure**	
	Mexican	*Latin American*	*Canadian*	*Asian*	*Indicator*	*Intensity*
	(1)	(2)	(3)	(4)	(5)	(6)
IV_{cty}	1.345***	-0.000	0.008	-0.014	0.217	0.220
	(0.097)	(0.003)	(0.023)	(0.012)	(0.162)	(0.163)
Observations	664	664	662	664	664	664
R-squared	0.78	0.28	0.69	0.35	0.84	0.83
Controls (City)	✓	✓	✓	✓	✓	✓
Sector Shares (16)	✓	✓	✓	✓	✓	✓
State FE	✓	✓	✓	✓	✓	✓

Internet Appendix to “Send Them Back? The Real Estate Consequences of Repatriations”

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Appendix A Historical Newspaper Evidence of Harassment and Anti-Mexican Sentiment

(A) The New York Times (1931)

35,000 MEXICANS LEAVE CALIFORNIA

Migration, Expected to Reach 75,000, Due to Idleness and Sense of Unwelcome.

FEAR SPREAD BY ARRESTS

Deportation Campaign of Government Alarms Many—Sacrifices Made of Homes.

Special to The New York Times.

LOS ANGELES, April 11.—Moving southward by rail and automobile in families of from two to ten, more than 10,000 Mexicans, men, women and children, have been leaving Southern California monthly for more than three months and returning to Mexico. This was revealed today by Rafael de la Colina, local Mexican Consul. They are pressed by economic adversity, fearful over recently renewed activities of immigration authorities and perplexed by what they regard as anti-Mexican sentiment.

(B) The Los Angeles Times (1930)

NEAR-RIOT OVER JOBS SETTLED

Inglewood Men Harass Mexican Laborers but Won't Work at Same Pay

INGLEWOOD, Oct. 16.- Between forty and fifty unemployed American laborers threatened a united disturbance this morning when they tried to prevent Mexican workmen engaged in laying a conduit under Redondo Boulevard to continue their work by guarding the toolboxes and demanding that the contractors employ white labor.

Although local police were called to the scene of the discussion, no violence was reported, the agitators dispersing after refusing to accept work for the wages paid to the Mexicans.

(C) The Washington Post (1930)

MEXICAN IMMIGRANTS.

There is a prospect that the House will pass a bill imposing the quota restriction upon Mexican immigrants. Pressure from labor organizations is very strong, and it is supported by influential organizations opposed to adulteration of the "American blood stream." There are about 2,000,000 Mexicans in the United States.

In several Southwestern States the economic system is based upon Mexican labor. Americans will not do the work that is performed by the Mexicans. In beet fields and on truck farms the Mexicans are good workers. They furnish most of the unskilled railroad labor. Good wages here and starvation conditions at home drive them across the border, and gradually they have displaced other classes of labor.

A sudden reversal of policy would work great hardship to employers throughout the Southwest. Nevertheless, some restrictive measure seems to be necessary in order to check the alien stream that flows northward. The Mexican immigrant is not good material for citizenship, and in some places Mexican colonies are decidedly objectionable.

One of the arguments used by employers is that Mexico would deeply resent the partial exclusion of its citizens from this country. There does not seem to be much basis for this argument, in view of the repeated statements of Mexican governmental spokesmen, who claim that their people would prefer to remain at home if they could make a livelihood. Stable conditions below the border might help to solve the problem of Mexican migration, but with high wages and

Figure A.1. Historical newspapers on the Mexican repatriation. This figure shows examples of newspaper articles from historical newspapers discussing the anti-Mexican sentiment after the Great Depression and during the period of the Mexican repatriation. Panel A shows a news piece from *The New York Times* from April 12, 1931. Panel B depicts a news piece from *The Los Angeles Times* dated from October 17, 1931. Panel C depicts a news piece from *The Washington Post* dated from January 20, 1930.

Appendix B Additional Data Description and Empirical Results

Table B.1. Top 10 Cities in Mexican Outflow. This table shows the top 10 cities in terms of their observed *Mexican Outflow* as defined by Eq. (5) and calculated from the U.S. Census data.

	City	Mexican Outflow Intensity, 1930–1940
1	San Benito, TX	17.8%
2	El Paso, TX	14.5%
3	Brawley, CA	11.9%
4	Del Rio, TX	11.8%
5	Brownsville, TX	8.9%
6	Laredo, TX	7.9%
7	East Chicago, IN	5.4%
8	Harlingen, TX	5.3%
9	San Antonio, TX	5.2%
10	Tucson, AZ	4.7%

Table B.2. Top 10 Cities in Mexican Outflow (no missing outcome). This table shows the top 10 cities in terms of their observed *Mexican Outflow* among the cities with no missing information on all housing market outcome variables (building permits and median prices). *Mexican Outflow* is defined by Eq. (5).

	City	Mexican Outflow Intensity, 1930–1940
1	El Paso, TX	14.5%
2	San Antonio, TX	5.2%
3	Pueblo, CO	2.0%
4	Gary, IN	1.9%
5	Los Angeles, CA	1.2%
6	Saginaw, MI	1.1%
7	San Diego, CA	0.9%
8	Phoenix, AZ	0.8%
9	Pasadena, CA	0.8%
10	Pontiac, MI	0.7%

Figure B.1. Border Crossing Stations. This figure shows the geographic location of the chief border crossing stations on the U.S.-Mexico border. The figure shows in blue the paved roads in 1930 from Morin and Swisher (2016).

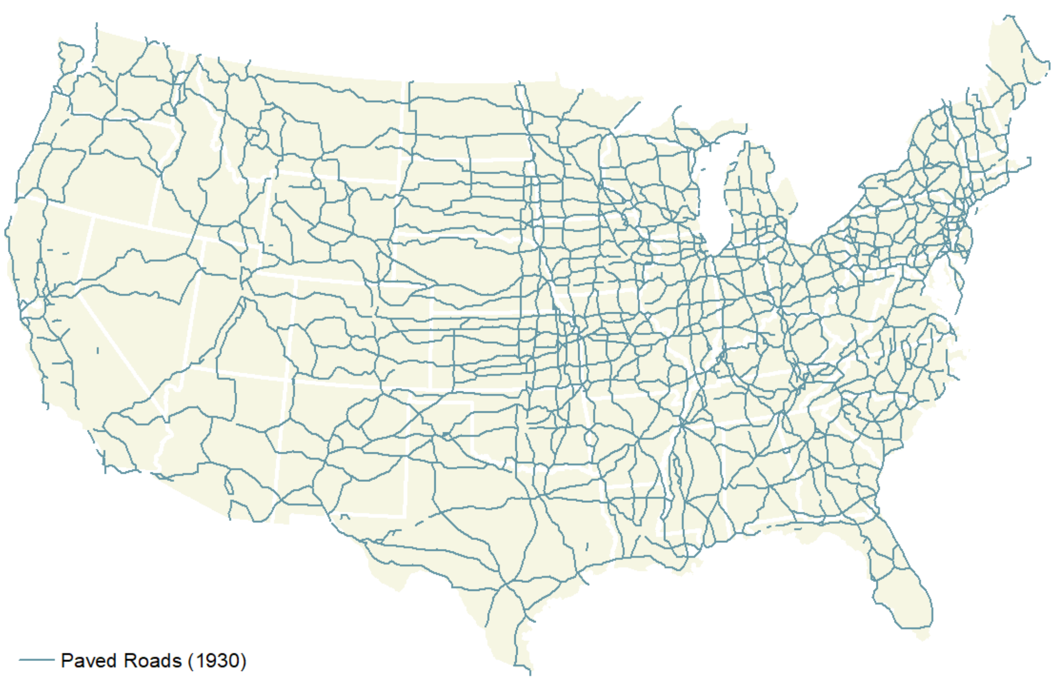


Figure B.2. Paved Roads Network (1930) This figure shows the network of paved roads in the 1930s United States by Morin and Swisher (2016). The authors use this measure to compute a measure of time to travel between counties. We use the inverse of this measure to capture the cost associated with engaging in repatriation activities.

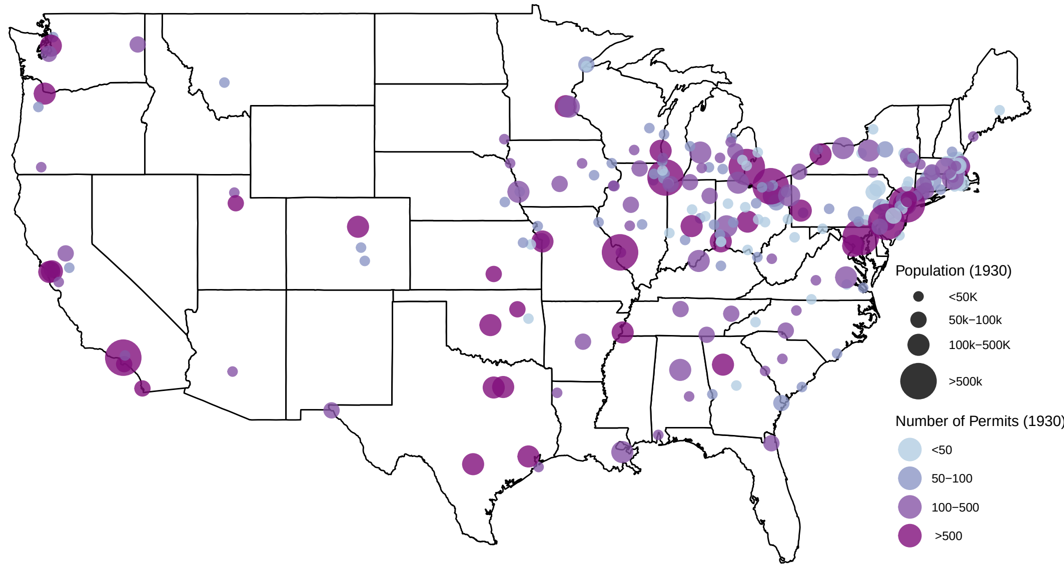


Figure B.3. Number of building permits by city. This figure shows the number of permits by city in our sample. The colors distinguish the cities by their number of building permits in 1930. The size of each bubble is proportional to the city's working age population. The data is collected by Snowden (2006) from several issues of the *Bulletin of the Bureau of Labor Statistics*.

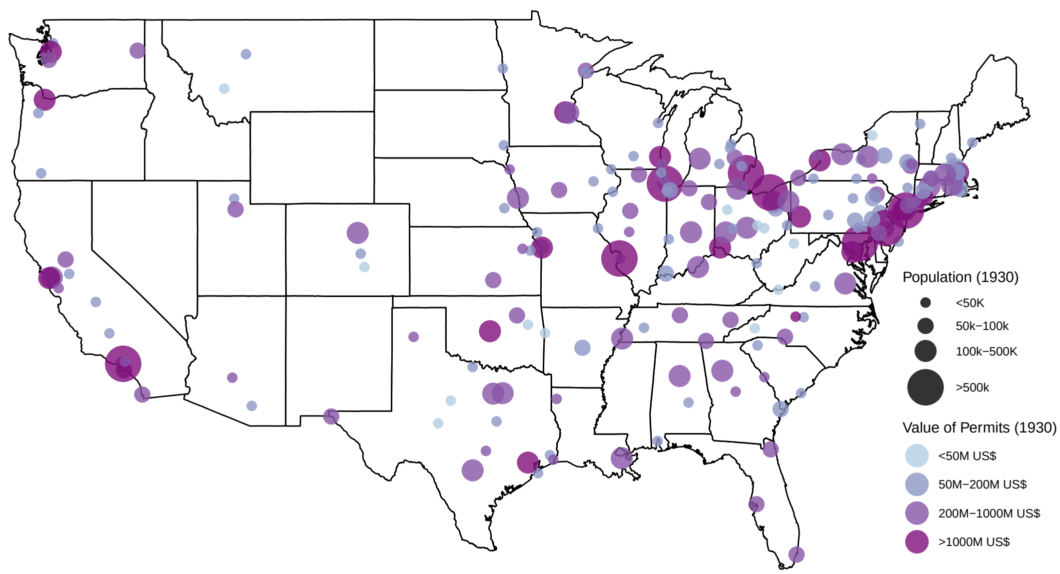


Figure B.4. Value of building permits by city. This figure shows the total value of permits in millions of dollars by city. The colors distinguish the cities by their value of building permits in 1930. The size of each bubble is proportional to the city's working age population. The data is collected from several issues of the *Dun & Bradstreet's Review*, a business and financial publication from the 1920s and 1930s.

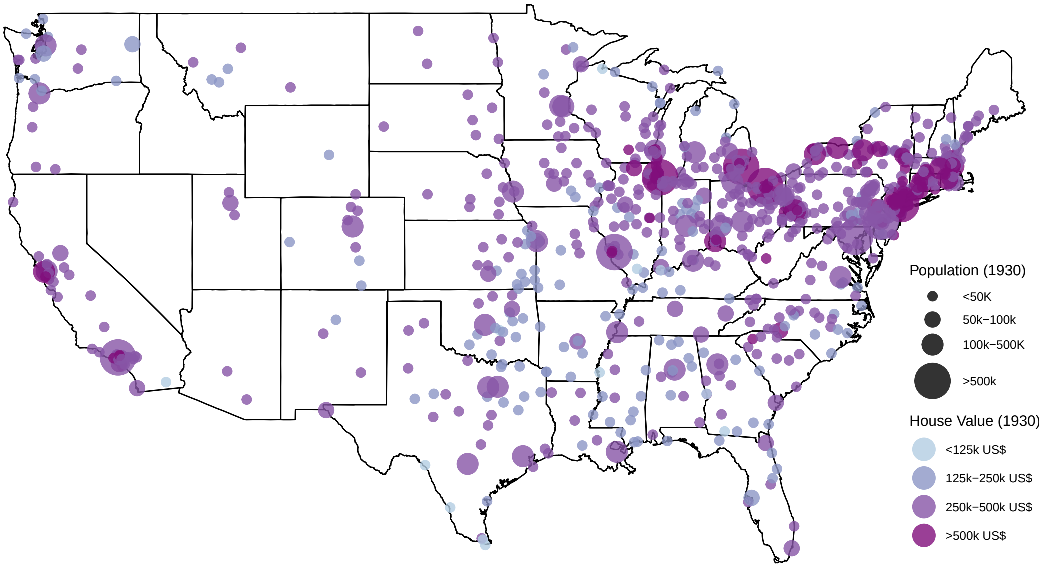


Figure B.5. Median house value by city. This figure shows the median house value in thousands of dollars by city. The colors distinguish the cities by their median house value in 1930. The size of each bubble is proportional to the city's working age population. The data is collected from the 1930 full-count U.S. Census (Ruggles et al., 2020).

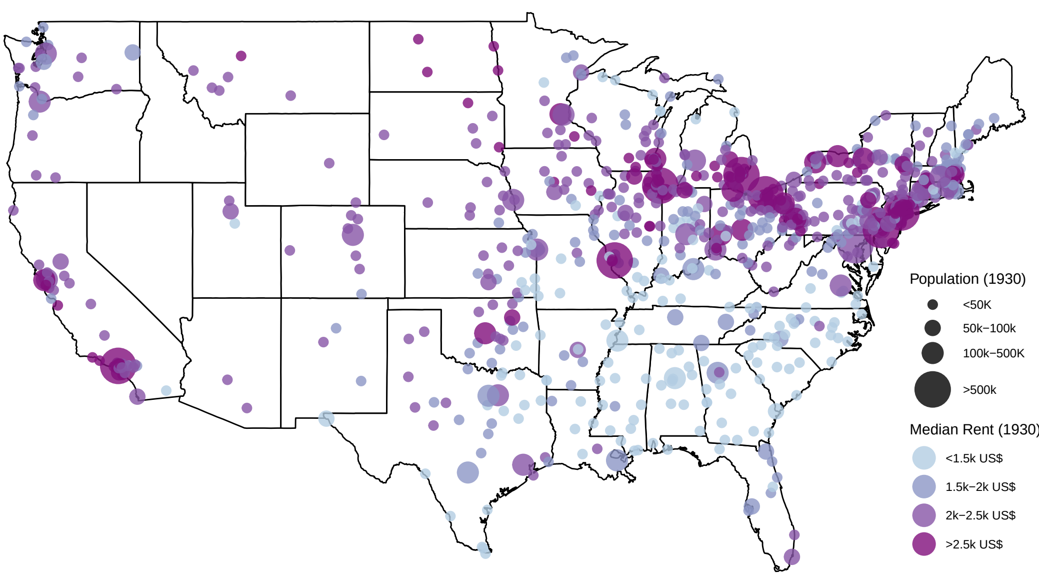


Figure B.6. Median rent by city. This figure shows the median rent in thousands of dollars by city. The colors distinguish the cities by their median rent in 1930. The size of each bubble is proportional to the city's working age population. The data is collected from the 1930 full-count U.S. Census (Ruggles et al., 2020).

Table B.3. Mexican and U.S.-born workers distribution by sector and occupation in 1930. This table shows the distribution of Mexican and U.S.-born workers in the U.S. according to the full-count 1930 U.S. Census. We report the number of workers in each category and their respective share relative to the total number of workers from each nationality. Occupations and sectors are as defined by the U.S. Census Bureau. We break down the *Manufacturing of Durable Goods* category defined by the census into "construction related" and "non-construction-related". We consider as "construction-related" the following sectors: logging; miscellaneous wood products; furniture and fixtures; glass and glass products; cement, concrete, gypsum and plaster products; structural clay products; pottery and related products; miscellaneous non-metallic mineral and stone products; blast furnaces, steel works, and rolling mills; other primary iron and steel industries; fabricated steel products; fabricated nonferrous metal products; not specified metal industries. We consider as Mexicans anyone who declared Mexico as their birthplace. Similarly, U.S.-born are individuals who reported the United States as their birthplace and that did not have Mexican parents. Taking a closer look at the descriptive statistics for industries and occupations, Panel A shows that Mexican immigrants in 1930 were primarily employed in agriculture (34.8%), transportation (12.8%), and construction or construction-related manufacturing durables (12.7%). In terms of occupations, Panel B shows that most Mexican immigrants in 1930 worked as laborers (42%), farm laborers (23%), and operatives (9.6%). For comparison, the table also presents the occupational and sectoral distributions of U.S. native-born workers; it shows a far more even distribution of U.S.-born workers across these dimensions.

	Mexican Workers		U.S.-Born Workers	
Panel A. Sectors	Number	Share (%)	Number	Share (%)
Agriculture, Forestry, and Fishing	96,718	34.8	7,796,223	25.5
Transportation	35,662	12.8	1,653,261	5.4
Personal services	21,910	7.9	2,471,938	8.1
Retail Trade	19,661	7.1	3,099,550	10.1
Public Administration	19,465	7.0	3,732,724	12.2
Manufacturing (durables, construction-related)	18,163	6.5	972,667	3.2
Construction	17,113	6.2	1,733,481	5.7
Manufacturing (nondurables)	17,062	6.1	2,369,389	7.8
Mining	10,884	3.9	694,259	2.3
Manufacturing (durables, non-construction-related)	6,890	2.5	1,284,730	4.2
Business and Repair Services	3,490	1.3	848,087	2.8
Professional and Related Services	2,667	1.0	1,753,088	5.7
Utilities and Sanitary Services	2,297	0.8	244,492	0.8
Wholesale Trade	2,261	0.8	418,342	1.4
Finance, Insurance, and Real Estate	1,698	0.6	987,011	3.2
Entertainment and Recreation Services	1,567	0.6	169,687	0.6
Telecommunications	508	0.2	342,375	1.1
Not declared	231,022		29,207,522	
	Mexican Workers		**U.S.-Born Workers**	
Panel B. Occupations	Number	Share (%)	Number	Share (%)
Laborers	131,523	42.0	8,791,265	24.3
Farm Laborers	72,106	23.0	2,686,644	7.4
Operatives	29,889	9.6	3,963,995	11.0
Farmers	19,908	6.4	4,878,106	13.5
Craftsmen	17,232	5.5	3,761,467	10.4
Service Workers (private household)	11,522	3.7	1,395,806	3.9
Service Workers (not household)	10,380	3.3	1,461,419	4.0
Managers, Officials, and Proprietors	10,210	3.3	4,917,715	13.6
Sales workers	6,736	2.2	2,195,253	6.1
Professional, Technical	3,394	1.1	2,105,494	5.8
Non-occupational response	196,138		23,621,662	

B.1 Event Study Specification

One concern with our identification strategy is the possibility that the share of Mexican workers in 1930 is associated with socioeconomic changes that occurred in the previous years that could also be associated with the housing market outcomes. The presence of "pre-trends" would be taken as evidence against our identification assumption. To take this into account, we estimate an additional set of event-study specifications for the 1921–1940 period:

$$\underset{t-1:t}{\Delta} Y_c = \alpha + \beta_t \cdot \left(\frac{Pop^{MEX}_{c,1930}}{Pop_{c,1930}} \right) + \lambda_s + \epsilon_c, \tag{B.1}$$

where $\Delta_{t-1:t} Y_c$ is a city's annual growth rate in either the number or the value of building permits; $Pop^{MEX}_{c,1930}/Pop_{c,1930}$ is a city's share of Mexican workers in 1930; λ_s represents state fixed effects, and t are the available years.[38] We cannot estimate a similar specification for the median house value or median rent because this information was not collected before the 1930 Census.

Figure B.7 shows the estimated coefficients β_t with 95% confidence intervals. In addition to showing how the Mexican repatriation effect evolved, the coefficients for years before 1929 provide a direct test for pre-existing effects, supporting our identification strategy. The panels also shed light on the dynamics of the effect of the repatriation on the number and value of permits. For instance, the negative effect on the number of permits is immediately evident in 1930, while the effects on the value of permits are significant only one year later in 1931. Another interesting result is that the negative effects were concentrated over the years when the repatriation was more intense (1930–1934). It is also interesting that in 1935, growth rates for the number of permits were positively associated with the share of Mexicans. This same effect emerged one year later, in 1936, for the value of building permits.[39] Despite this short-term recovery, the overall effect of the repatriation along the decade remains negative, as shown in Table 7.

B.2 Robustness to Controlling for Pre-Trends in Population Growth

The U.S. Census did not collect information on house values and rents in the decades prior to 1930. This data limitation impedes us from conducting a more precise assessment of the presence of pre-trends in the housing markets. Despite our attempt to assess these pre-trends with available data on building permits, some concerns may still remain. One major concern with our approach is whether the Mexican repatriation was associated with the population growth of those areas. Because the population is the main determinant of housing demand in a city, the potential existence of pre-trends in the non-Mexican population growth could potentially bias our estimates. To address this issue, we test the robustness of our estimates to the inclusion of additional control variables that capture the non-Mexican population change in the periods before the 1930s. We test this in two ways: (i) by constructing the decennial percent change in the three decades preceding the repatriation, that is, from 1900 to 1910, 1910 to 1920, and 1920 to 1930, and (ii) by calculating the long-term percent change between 1900 and 1930. Table B.4 presents the estimates and shows that our results are quantitatively very similar to the

[38] Data on the number of building permits end in 1939, while data on the value of building permits end in 1940.

[39] One potential explanation for the rebound observed in 1935–1936 is the New Deal. Fishback (2017) shows that the New Deal during the 1930s had large effects on local economies, increasing consumption activity and internal migration. Moreover, Fishback et al. (2011) and Courtemanche and Snowden (2011) also show evidence that the Home Owners' Loan Corporation (HOLC) had an important role in supporting housing markets, improving house values and homeownership. If this is the case, then this bias would have the opposite sign, suggesting our results on decennial changes are a lower bound of the effects from the repatriation.

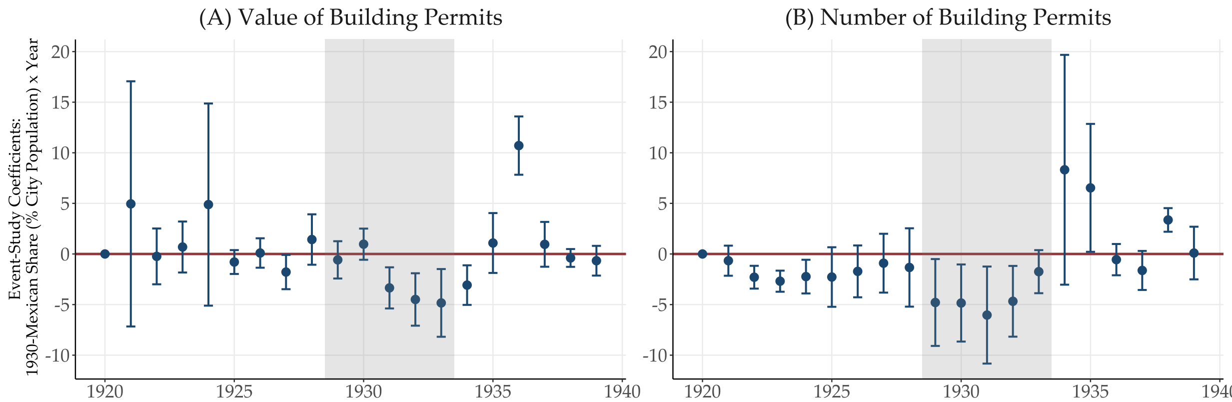


Figure B.7. Share of Mexicans in 1930 and annual building permit growth, 1921–1940. This figure shows coefficients of the share of Mexican workers in 1930 using the event study specification on the annual growth rate of the number of building permits (Panel A) and the growth rate of the value of building permits (Panel B). The lines are the point estimates from the event study specification with 95% confidence intervals. The shaded areas represent the Great Depression period dated by the NBER. Standard errors are clustered by state.

baseline results presented in the main text. The major difference is observed in the estimates for rent changes at the house-level analysis in Panel A. After controlling for the pre-repatriation population growth rates, the coefficient for rents becomes much larger in magnitude. Overall, these results suggest that our results are not driven by differential pre-trends in the non-Mexican population growth in the decades preceding the repatriation.

B.3 Effects on Supply of Housing: Employment in Construction Industry

In 1930, a significant share of Mexican immigrant workers was employed in the construction and related manufacturing sectors industries. Table B.3 shows that approximately 12.7% of the Mexican workers were employed in the construction and related sectors. Therefore, the repatriation might have also affected the supply of housing through employment in these sectors. For instance, when studying Mexican immigration over the 1990s, Monras (2020) finds that Mexican immigration of low-skilled workers entering the construction sector can lead to a decrease in wages and consequently to construction costs.

Table B.5 presents estimates of how the repatriation affected changes in employment in the construction industry to Mexicans (columns 1–2), U.S.-born (columns 3–4), and total employment (columns 5–6), all relative to the total working-age population in each city. The first set of results (columns 1–2) is not surprising. It shows a negative effect of the repatriation on the share of employment of Mexicans in the construction sector. The second set of regressions (columns 3–4) shows that cities more affected by repatriation had an increase in the employment of U.S.-born in construction. However, once we consider the total employment in the construction sector (columns 5–6), we find a small and not statistically significant effect.

Taken together, these results suggest that the repatriation induced the substitution of Mexicans for U.S.-born workers in the construction and construction-related sectors and a stagnation of the overall employment growth in these sectors. This is in line with the employment results spanning all sectors estimated by Lee et al. (2022).

Table B.4. Robustness to the inclusion of population growth pre-trends as additional controls. This table presents the results from estimating our baseline specifications with the inclusion of additional control variables for the population growth of non-Mexicans in a county. Panel A estimates a similar specification to Table 3 at the house level, Panel B uses the specification of Table 6, and Panel C of Table 7. In columns 1, 3, 5, and 7, we include as additional control variables a set of decennial percent changes in the population of the county between the three preceding decades from the repatriation, that is, from 1900 to 1910, 1910 to 1920, and 1920 to 1930. Columns 2, 4, 6, and 8 include the long-term population trend, as measured by the percent change between 1900 and 1930. The population in each county and decade accounts for only working-age adults (as previously defined) who do not live in group quarters and are not born in Mexico. All specifications include the controls and fixed effects from the baseline analysis.

Panel A. Effects on house-level prices

	House value change (%)				Rent change (%)			
	Mexican-Occupied		U.S.-born-Occupied		Mexican-Occupied		U.S.-born-Occupied	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mexican Outflow	–8.659***	–10.19***	–0.876	–0.776	–15.17***	–10.16***	–6.140*	–6.311
	(2.088)	(1.420)	(0.915)	(0.905)	(1.394)	(0.625)	(3.229)	(3.582)
Observations	3,578	3,578	176,165	176,165	9,459	9,459	167,142	167,142
R-squared	0.026	0.024	0.001	0.001	0.012	0.014	0.003	0.003
Kleibergen–Paap *F*-statistic	653.95	893.96	218.21	174.27	470.47	462.20	132.51	107.15
Controls + Sector Shares + State FE	✓	✓	✓	✓	✓	✓	✓	✓
Decennial trends	✓		✓		✓		✓	
Long trend		✓		✓		✓		✓

Panel B. Effects on neighbors

	House value change (%)				Rent change (%)			
	Mexican-Neighboring		U.S.-born-Neighboring		Mexican-Neighboring		U.S.-born-Neighboring	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mexican Outflow	–2.388**	–3.318***	–1.059	–0.959	–5.603	–6.408	–6.764	–6.861
	(0.979)	(0.837)	(0.909)	(0.877)	(4.824)	(4.448)	(4.166)	(4.264)
Observations	2,510	2,510	119,021	119,021	3,688	3,688	106,902	106,902
R-squared	0.023	0.022	0.001	0.001	0.005	0.005	0.003	0.003
Kleibergen–Paap *F*-statistic	301.37	358.66	266.98	218.35	254.63	265.10	136.76	115.32
Controls + Sector Shares + State FE	✓	✓	✓	✓	✓	✓	✓	✓
Decennial trends	✓		✓		✓		✓	
Long trend		✓		✓		✓		✓

Panel C. Effects on city-level prices

	Building Permit Growth (Number)		Building Permit Growth (Value)		House Value Growth		Rents Growth	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mexican Outflow	–17.379*	–15.672	–3.646**	–3.000**	–1.256***	–1.266***	–0.885***	–0.836***
	(10.226)	(9.886)	(1.336)	(1.123)	(0.420)	(0.425)	(0.234)	(0.214)
Observations	237	237	193	193	868	868	868	868
R-squared	0.27	0.27	0.20	0.17	0.50	0.49	0.23	0.23
Kleibergen–Paap *F*-statistic	3254.63	2454.78	924.10	803.09	245.68	248.51	245.68	248.51
Controls + Sector Shares + State FE	✓	✓	✓	✓	✓	✓	✓	✓
Decennial trends	✓		✓		✓		✓	
Long trend		✓		✓		✓		✓

B.4 House Market Effects: Robustness to Different Percentiles of Values and Rents

Taking advantage of the full-count census data available, we expand the analysis to investigate the sensitivity of the impact of Mexican repatriation across the distribution of house values and rents.[40] We examine the effects across different percentiles within cities by estimating the repatriation effect at different percentiles of the house value and rent distributions. The equation

[40] We cannot conduct a similar analysis for building permits because they are aggregate city-level measures.

Table B.5. Effects on employment in the construction industries, 1930–1940. This table presents the results from estimating:

$$\underset{1930:40}{\Delta} Emp_c^{Mex|US|Tot} = \alpha + \beta \cdot \tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right) + \lambda_s + \mathbf{X}_{c,1930} + \epsilon_c,$$

where $\Delta_{1930:40} Emp_c^{Mex|US|Tot}$ is a city's employment change in the construction industries between 1930 and 1940 for each group of workers: Mexican (*Mex*) employment, U.S.-born (*US*), and total (*Tot*) employment. $\tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right)$ is the Mexican outflow between 1930 and 1940 in the city c instrumented by IV_{cty}, which is the instrument defined in Eq. (6); λ_s represents state fixed effects to capture state-specific, unobserved heterogeneity; and $\mathbf{X}_{c,1930}$ is a set of 1930 city-level controls, which include the population *Average Age*, average *School Attendance*, share of *Unemployed* workers, and county-level controls *Drought Exposure*, which is the interaction on the number of severe drought months faced by a county and the county's share of farming land; the *Retail Sales Growth* rate between 1929 and 1935; the log of the city-level median house value in 1930; the fraction of each county exposed to *Medium* and *High* permanent soil erosion due to the American Dust Bowl in the 1930s. The table presents the estimates of the effect of repatriation on the growth of the employment of Mexicans (columns 1 and 2), on the growth of the employment of U.S.-born (columns 3 and 4), and the growth of total employment (columns 5 and 6) in the construction industries. Columns 1, 3, and 5 show *weighted least squares* estimates, and columns 2, 4, and 6 present the 2SLS results with controls, state fixed effects, and the employment sector shares. All regressions are weighted by the total working-age population in 1930 and include state-fixed effects. Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

	Employment Change (Mexicans)		Employment Change (Natives)		Employment Change (Total)	
	WLS	2SLS	WLS	2SLS	WLS	2SLS
	(1)	(2)	(3)	(4)	(5)	(6)
Mexican Outflow	–0.133***	–0.110***	0.101	0.130***	0.006	0.023
	(0.032)	(0.005)	(0.183)	(0.032)	(0.170)	(0.036)
Observations	866	866	866	866	866	866
R-squared	0.57	0.58	0.00	0.15	0.00	0.13
Kleibergen–Paap F-statistic		238.556		238.56		238.56
Controls (City)		✓		✓		✓
Sector Shares (16)		✓		✓		✓
State FE		✓		✓		✓

we estimate is analogous to Eq. (10) and is given by:

$$\underset{1930:40}{\Delta} Y_c(\tau) = \alpha + \beta \cdot \tilde{O}^{MEX}_{1930:40,c}\left(IV_{cty}\right) + \lambda_s + \mathbf{X}_{c,1930} + \epsilon_c, \tag{B.2}$$

where $\Delta_{1930:40} Y_c(\tau)$ is a city's 1930–40 growth rate in reported *House Value* or *Rent* at percentile τ. We obtain, for each city, the house value or rent at several points of the house value or rent distribution. Specifically, to avoid the influence of outliers, we consider the interquartile range (i.e., from the 25th to the 75th percentile), breaking it down into 10 percent intervals.

The estimated coefficients and 95% confidence intervals of the two-stage least squares (2SLS) estimates are presented in Figure B.8. The median (50th percentile) effect is the coefficient reported in Table 7. The results show that the Mexican repatriation had statistically significant effects across different percentiles of the house value and rent distributions. Although we do observe some variation at the magnitudes of the coefficients, their differences are not statistically significant.

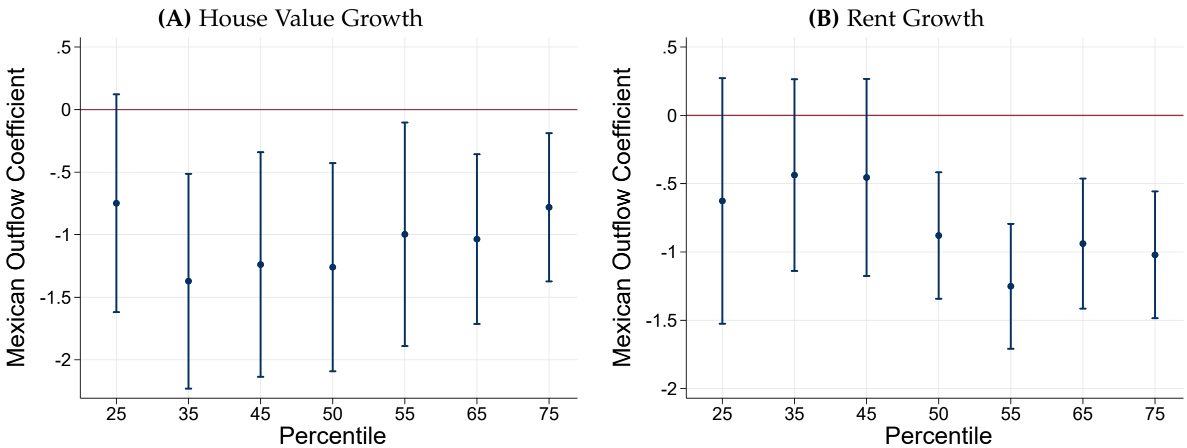


Figure B.8. Heterogeneous effects at different percentiles of the within-city house value and rent distribution. This figure re-estimates the *House Value Growth* and the *Rent Growth* equations from our baseline specification in Columns 9 and 12 of Table 7 but uses the growth rates at different percentiles of each city's *House Value* and *Rent* distributions as the dependent variable. The figure shows the coefficients and 95% confidence intervals for the two-stage least squares (2SLS) estimates of the Mexican outflow on house value growth (Panel A) and rent growth (Panel B). All specifications include the control variables, sector employment shares, and state-fixed effects.

B.5 Sensitivity to the Exclusion of Cities not Directly Exposed

One of the concerns with our baseline analysis is that our sample includes many cities that were not directly exposed to the Mexican repatriation. In this section, we investigate the sensitivity of our baseline estimates to different strategies to account for these non-affected cities. We re-estimate our baseline specifications, performing various sample restrictions to exclude the cities that were not directly affected by the Mexican repatriation. The goal is to study the sensitivity of the coefficients to the exclusion of cities and regions with plausibly no exposure to the Mexican repatriation.[41]

Table B.6 presents the estimated coefficients for *Number of Building Permits* (Column 1); *Value of Building Permits* (Column 2); median *House Value* (Column 3); and median *Rent* (Column 4); estimated by two-stage least squares (2SLS) using our IV, which is defined in Eq. (6). All specifications include the same set of control variables and state fixed effects, as discussed in Section 5.3. In Panel A, we restrict the sample to the states that had more than 0.25% of their working age population composed of Mexican workers in 1930 (Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana). In Panel B, we restrict the sample to the states that contained the top 25 cities with the largest Mexican outflow rates (Texas, California, Indiana, Arizona, Colorado, Ohio, and New Mexico). All regressions are weighted by the total working-age population in 1930. We do not include the sector employment shares as controls due to the small sample sizes.

In summary, the results are qualitatively and quantitatively similar to the baseline results on Table 7. It is worth mentioning that the outflow coefficients for house value growth remain consistent with the baseline estimate, at around –2.7 in both panels, while the coefficient for rent growth

[41]In this section, we limit the sample to cities that are above some threshold in terms of the pre-existing Mexican-immigrant population. In doing so, some points are worth emphasizing. First, our measure of the Mexican population is limited to the working-age population. Therefore, the number of working-age Mexican immigrants may represent a much larger number of people after including other household members who are not of working age. Second, because our specifications include a rich set of control variables, some sample restrictions do not provide a sufficiently large sample to provide enough power to estimate our coefficients of interest.

is slightly smaller (in absolute terms) than the baseline. Our findings suggest that the results are robust to different sample restrictions to cities with a reasonable number of Mexican immigrants.

Table B.6. Robustness to the exclusion of regions with few or no Mexican workers in 1930: effects on the housing market, 1930–40. This table presents the estimates of the baseline regressions but performs various sample restrictions to account for the cities that were not exposed to the Mexican repatriation. The goal is to study the sensitivity of our city-level estimates to the exclusion of the cities not directly affected by the Mexican repatriation. The regressions are estimated as given by Eq. (10). We exclude the employment sector shares in these specifications due to the small sample sizes. In Panel A, we restrict the sample to the states that had more than 0.25% of their working age population composed of Mexican workers in 1930 (Arizona, Texas, California, New Mexico, Kansas, Colorado, Wyoming, Utah, Idaho, Nebraska, and Indiana). In Panel B, we restrict the sample to the states that contained the top 25 cities with the largest Mexican outflow rates (Texas, California, Indiana, Arizona, Colorado, Ohio, and New Mexico). Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Panel A. States with more than 0.25% share of Mexican workers

	Building Permit Growth (Number)	Building Permit Growth (Value)	House Value Growth	Rent Growth
	(1)	(2)	(3)	(4)
Mexican Outflow	–0.286	–2.667***	–1.266**	–0.650***
	(8.074)	(0.236)	(0.527)	(0.132)
Observations	39	47	158	158
R-squared	0.22	0.49	0.20	0.22
Kleibergen–Paap *F*-statistic	409.47	382.74	199.47	199.47
Controls	✓	✓	✓	✓
State FE	✓	✓	✓	✓

Panel B. States with the 25 cities with highest Mexican outflow

	Building Permit Growth (Number)	Building Permit Growth (Value)	House Value Growth	Rent Growth
	(1)	(2)	(3)	(4)
Mexican Outflow	2.859	–3.504***	–1.276***	–0.562***
	(12.053)	(0.626)	(0.307)	(0.045)
Observations	51	51	186	186
R-squared	0.29	0.30	0.34	0.22
Kleibergen–Paap *F*-statistic	236.02	299.26	139.82	139.82
Controls (City)	✓	✓	✓	✓
State FE	✓	✓	✓	✓

B.6 Robustness to Controlling for Other Migration Shocks and Racial Segregation

Despite our instrumental variable approach and the validation tests presented so far, some concerns may persist about the potential association between our instrument and other important migration trends and residential segregation of the time. To address these concerns, we include three additional control variables in our baseline specifications. First, we include the measure of the 1920s quota intensity from Abramitzky et al. (2023). The idea is to control for the potential influence of the 1924 Immigration Act, which barred immigrants, mostly from Asian, Eastern, and Southern European countries (Abramitzky et al., 2023). Second, we include the percent change in the Black American population in the county between 1900 and 1930. The idea with this variable is to capture the first wave of the Great Migration when Black families migrated in large numbers to the North of the country (Boustan, 2010; Derenoncourt, 2022). It is important to highlight that the moving rate of Black Americans from the South was significantly slower during the 1930s and that its first wave between 1910 and 1930 was much smaller compared to the second wave between 1940 and 1970 (Derenoncourt, 2022). Third, we include the neighbor-based measure of residential racial segregation from Logan and Parman (2017). The idea is to control for the influence of racial segregation on the local housing market.

Table B.7 presents the results with the inclusion of the variables. Panel A estimates a similar specification to Table 3 at the house level, Panel B uses the specification of Table 6, and Panel C of Table 7. We find that all estimates after controlling for the additional variables are quantitatively similar to what we have found before. The only exception is the coefficient for rent change at the house level, which becomes larger.

Table B.7. Robustness to the inclusion of additional controls for other local migrations shocks. This table presents the results from estimating our baseline specifications with the inclusion of additional control variables for local exposure to other migration shocks. Panel A estimates a similar specification to Table 3 at the house level, Panel B uses the specification of Table 6, and Panel C of Table 7. All specifications include the controls and fixed effects from the baseline analysis. In addition, we include the quota intensity exposure measure from Abramitzky et al. (2023), the neighbor-based measure of residential segregation from Logan and Parman (2017), and the percent change in black U.S.-born population between 1900 and 1930 in the county. Standard errors in parentheses are clustered by state. Statistical significance: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Panel A. Effects on house-level prices

	House value change (%)		Rent change (%)	
	Mexican-Occupied	U.S.-born-Occupied	Mexican-Occupied	U.S.-born-Occupied
	(1)	(2)	(3)	(4)
Mexican Outflow	–10.34***	–0.902	–14.86***	–7.492**
	(2.115)	(0.841)	(2.820)	(3.282)
Observations	3,566	173,852	9,448	165,615
R-squared	0.024	0.001	0.012	0.003
Kleibergen–Paap *F*-statistic	226.75	173.17	4,142.3	115.03
Controls + Sector Shares + State FE	✓	✓	✓	✓
Additional Controls	✓	✓	✓	✓

Panel B. Effects on neighbors

	House value change (%)		Rent change (%)	
	Mexican-Neighboring	U.S.-born-Neighboring	Mexican-Neighboring	U.S.-born-Neighboring
	(1)	(2)	(3)	(4)
Mexican Outflow	–5.062***	–0.934	–11.81*	–7.993*
	(0.905)	(0.816)	(5.954)	(3.891)
Observations	2,506	117,431	3,685	105,955
R-squared	0.023	0.001	0.005	0.003
Kleibergen–Paap *F*-statistic	434.33	204.57	3,302.1	117.63
Controls + Sector Shares + State FE	✓	✓	✓	✓
Additional Controls	✓	✓	✓	✓

Panel C. Effects on city-level prices

	Building Permit Growth (Number)	Building Permit Growth (Value)	House Value Growth	Rents Growth
	(1)	(2)	(3)	(4)
Mexican Outflow	–15.986*	–2.710*	–1.343***	–0.962***
	(8.973)	(1.343)	(0.407)	(0.239)
Observations	232	189	830	830
R-squared	0.28	0.17	0.51	0.24
Kleibergen–Paap *F*-statistic	1186.51	687.034	246.867	246.867
Controls + Sector Shares + State FE	✓	✓	✓	✓
Additional Controls	✓	✓	✓	✓

Appendix C Quantifying the Effect of the Mexican Repatriation

In this section, we use a quasi-counterfactual exercise to illustrate the quantitative implications of our findings. This empirical exercise, similar to Burchardi et al. (2018), is not meant as a formal counterfactual but rather offers a visualization of the effects of the Mexican repatriation on aggregate outcomes. How different would the growth rates of the housing market in U.S. cities have been had the Mexican repatriation not happened?

We first assume that the general equilibrium effects from the repatriation are either negligible or non-existent. In this case, our reduced-form results could be used to estimate the predicted changes in the outcome variables under the scenario without the Mexican repatriation. We also require an estimate of the outflow of Mexican immigrants in the absence of the Mexican repatriation. We use the data and the estimated coefficients from the first stage to derive a rough estimate. We start by assuming that the repatriation effect is completely captured by our instrumental variables, conditional on the control variables. The underlying assumption is that, if the repatriation had not happened, we would not have observed any effect of the instrumental variables on the Mexican outflow. The results in Table 10 support this idea.

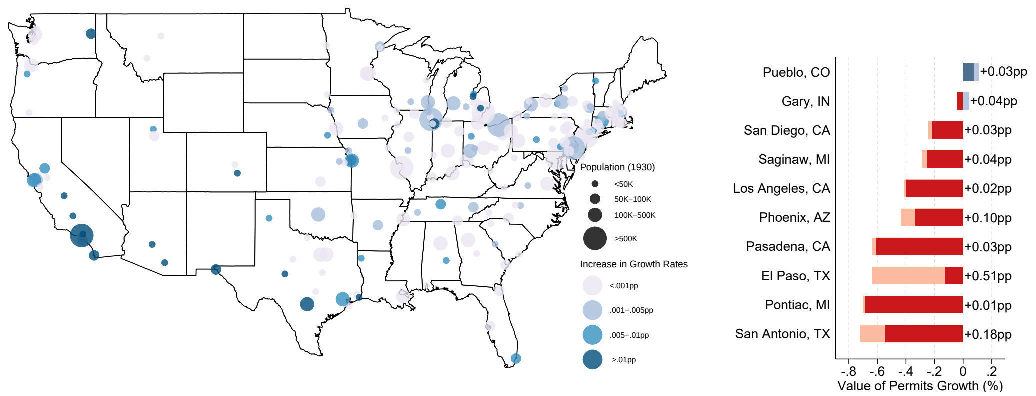
The results show that the instrumental variables are relevant to explaining Mexican immigrants' outflow and that they do not have a statistically significant association with the outflow of immigrants from other nationalities. We use the estimates from the first stage regressions to obtain the hypothetical Mexican outflow in the absence of the repatriation. We calculate the hypothetical Mexican outflow in the case of no repatriation as $\ddot{O}^{MEX}_{1930:40,c} \equiv O^{MEX}_{1930:40,c} - \hat{\xi} \cdot IV_{cty}$, where $O^{MEX}_{1930:40,c}$ is the observed Mexican outflow and $\hat{\xi}$ is the estimated coefficient of the instrumental variable IV_{cty} in the first stage. We rearrange this expression to represent the predicted change in Mexican outflow as $dO^{MEX}_{1930:40,c} \equiv \hat{\xi} \cdot IV_{cty}$.

Given this predicted change in the Mexican outflow, we use the estimates from Table 7 to calculate the hypothetical change in the growth rates of our housing market outcome variables. The predicted change in the outcomes is specified by $d\left[\underset{1930:40}{\Delta} Y_c\right] \equiv \hat{\gamma} \cdot dO^{MEX}_{1930:40,c}$. Figure C.1 illustrates the predicted changes in the growth rates. The maps on the left depict the geographic distribution of the changes, while the bar graphs on the right show the predicted changes for the cities with the highest Mexican outflow between 1930 and 1940. For cities with negative growth rates, the counterfactual (depicted in light red) cancels out the observed decline (depicted in vivid red). For cities with positive growth rates, the counterfactual (in light blue) increments the observed growth rate (in vivid blue).[42]

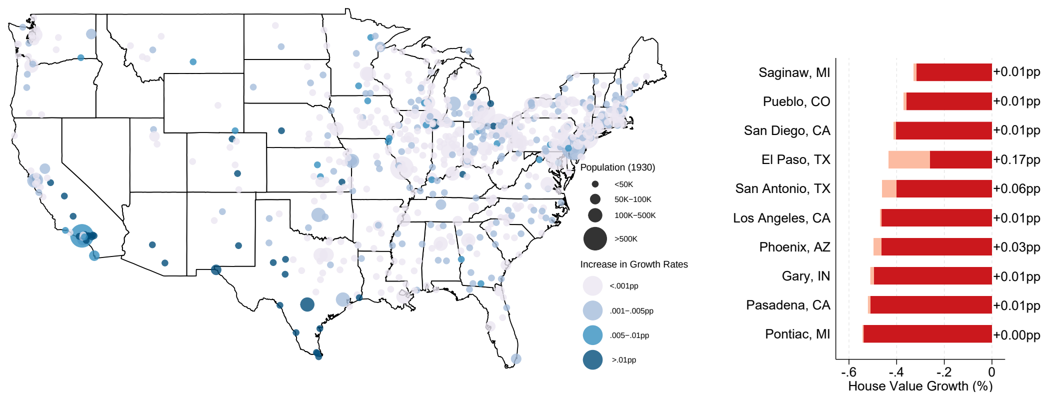
The results in Figure C.1 suggest that the predicted change in the Mexican outflow would have been highly heterogeneous across U.S. cities, translating into heterogeneous changes in the growth rates of housing market outcomes. We find that the growth rates of the value of building permits, house values, and rents would have been significantly larger in the hypothetical scenario of no repatriation, especially for the cities closer to the U.S.–Mexico border. For example, the value of building permits growth rate (Panel A) in El Paso would have been 0.51 p.p. higher in the counterfactual scenario, almost fully canceling out the drop in the observed growth rate. Finally, the deep dive into the growth rate of El Paso's median house value (Panel B) would be roughly cut in half in the counterfactual.

[42] The only exception to this description is Gary, IN, depicted in Panel A. In this case, the observed growth rate is negative (red bar). In contrast, the counterfactual is represented in a blue bar, indicating that the increment under this scenario is enough to cancel out the decline and make the overall growth rate positive.

(A) Value of Building Permits



(B) House Value



(C) Rents

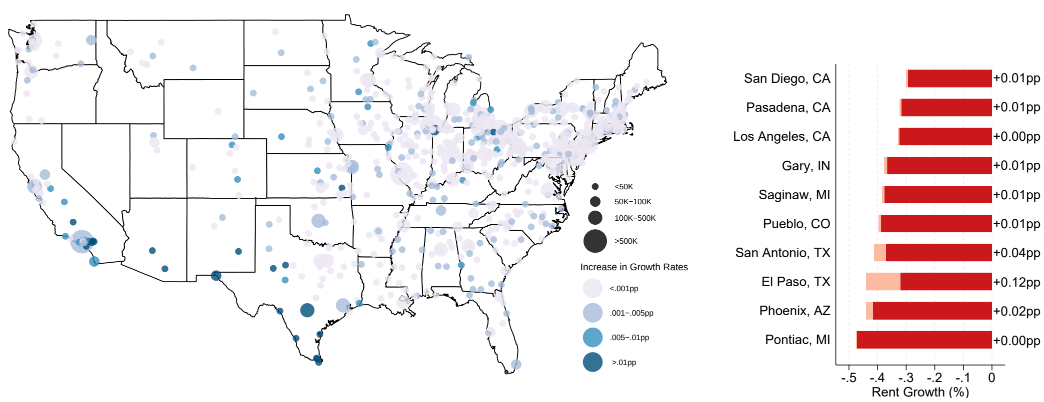


Figure C.1. Real estate outcomes without the Mexican repatriation (continued on the next page). This figure summarizes the quasi-counterfactual for the housing market outcomes of interest: value of building permits (Panel A), house value (Panel B), and rents (Panel C). We omit the number of building permits, as the estimated coefficients are not statistically significant from Table 7. The maps depict the predicted increase in the growth rates of the city's respective real estate outcome as detailed in Section C. The size of each bubble is proportional to the city's working-age population in 1930. Darker shades of blue represent greater predicted increases in percentage points. The bar graphs show the top 10 cities with highest Mexican outflow between 1930 and 1940 with non-missing information on all outcome variables. For cities with negative growth rates (red bars), the counterfactual (depicted in light red) cancels out the observed decline (depicted in dark red). For cities with positive growth rates (blue bars), the counterfactual (in light blue) increments the observed growth rate (in dark blue).

Appendix D Address Linking Approach: 1930–1940 Censuses

This section describes the procedure we adopted to construct a sample of matched houses between 1930 and 1940. Our goal is to match U.S. houses in 1930 to their records in the 1940 U.S. Census. Our source of U.S. houses and their addresses are from the IPUMS Restricted Complete Count Data (Ruggles et al., 2020). In addition to state and city, the main variables used in this linking approach are the street name and the house number of the household's street address, as written on the original census form.

Our approach to link addresses across censuses is similar in essence to previous approaches proposed in the literature of linking individuals across censuses (Abramitzky et al., 2012, 2014, 2021). To the best of our knowledge, the first study to match addresses across the 1930 and 1940 Censuses is Akbar et al. (2022). The authors perform the address matching for ten major U.S. cities. Our procedure is similar to theirs in essence and follows four basic steps:

1. We remove observations with unidentifiable addresses, that are missing any component of the address: state, city, street name, or house number. We remove from the sample all housing units that are categorized as group quarters.

2. We standardize street names in the census, which are prone to typos and abbreviations. We standardize all the directional prefixes and street suffixes, convert ordinal street numbers to their cardinal text forms, remove special characters or punctuation, and remove any redundant information from street names. We also standardize house numbers by removing special characters or punctuation.

3. We restrict the sample to addresses that are unique by state, city, street name, and house number. We identified over 10 million unique U.S. addresses in 1930.

4. We match observations in 1930 to 1940 records using the following procedure. For each unique address in 1930, we search for an exact match by state, city, street name, and house number in 1940. If we find a unique match, we stop and consider the observations matched. If we find multiple matches for the same address, the observation is discarded to avoid a potential incorrect match. If there are no matches for an address from 1930 and the street name contains a suffix, we perform another search for an exact match in 1940, but excluding the street name's suffix. Observations that find multiple matches are discarded. If none of these attempts produces a unique match, the observation is also discarded.

The final sample contains only the addresses that can be successfully and uniquely matched between 1930 and 1940. This procedure generates a sample of over 4 million linked addresses, a matching rate of 41.7% of the identifiable addresses in 1930.

The approach we adopt has been shown to yield precise house links as seen from geo-coded blocks in northern U.S. cities by Akbar et al. (2022). For southern U.S. cities, Baerlocher et al. (2024) validate our approach by comparing our house-level matches to modern street geo-locations using standard geo-coding sources for Los Angeles, CA, finding an overwhelmingly precise match.