The Employment Effects of Mexican Repatriations: Evidence from the 1930's*

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Abstract

During the period 1929-1934 a campaign forcing the repatriation of Mexicans and Mexican Americans was carried out in the U.S. by states and local authorities. The claim of politicians at the time was that repatriation would reduce local unemployment and give jobs to U.S. citizens, alleviating the local effects of the Great Depression. This paper uses this episode to analyze the consequences of Mexican repatriations on labor market outcomes of natives. Analyzing 893 cities in the period 1930-40 we find that repatriation of Mexicans was positively associated with decreases in native employment and increases in native unemployment. These results are robust to the inclusion of many controls. We then apply an IV strategy based on the differential size of Mexican communities in 1930 and we apply a matching method to estimate a causal "average treatment effect". The results do not support at all the claim that repatriations had any expansionary effects on native employment, but suggest instead that they may have depressed their employment and wages.

JEL Codes: J15, J21, J61, N32.

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1 Introduction

At several points in U.S. history, especially at times when the median worker has experienced economic hardship, some political candidates and policy makers have proposed the idea that repatriating (undocumented) immigrants could solve or alleviate the problems of unemployment and low wages.[1] In the period 1929-34, when the Great Depression was producing its direst effects, this idea was proposed and pursued on a large scale at the expenses of first and second generation Mexican immigrants. The repatriation and deportation programs, run by local and state governments, with the approval of the U.S. Federal government and with help from local charities and from the Mexican government resulted in the repatriation of between 400,000 and 500,000 Mexicans in the period 1930-40.[2] This figure corresponds to about one third of the total Mexican population in the U.S. at the time (Gratton and Merchant 2013). Between a fourth to a third of these repatriates were U.S.-born second generation immigrants and the distinction between "legal" and "illegal" immigrant was overlooked in favor of explicitly targeting people of Mexican descent, even when they were US citizens. For this reason this episode has later been considered as a grave violation of civil rights (Johnson 2005).

The explicit goal of the program was to reduce the local economic burden represented by Mexicans, if they were not employed and poor, and to create jobs for the local population of natives, if they were employed and "taking away" labor opportunities. The justification of the repatriations as a way of improving the local economic and job market conditions was very clearly stated in the words of the politicians of the time. A member of the Los Angeles County board of supervisors, H.M. Blaine, is recorded as saying around 1929 "*the majority of the Mexicans in the Los Angeles Colonia were either on relief or were public charges.*"(Balderrama and Rodriguez 2006) Similarly, Congressman Martin Dies of Chicago, wrote in the Chicago Herald-Examiner "*The large alien population is the basic cause of unemployment.*"(see Betten and Mohl 1973).

In this paper we analyze, using Census data from 1930, 1940 and 1950, whether there is any support to the claim that communities where repatriation of Mexican was larger experienced improved labor market conditions for natives or for other immigrants. In our analysis we exploit the substantial variation in the incidence of deportation of Mexicans relative to the local population across cities. This was both because of large differences in the local Mexican population relative to the total population in 1930 and because of differences in the intensity of repatriation across communities. The most intensive period of Mexican deportations and repatriations were the years between 1929 and 1934, but deportations continued till 1936-7 (see Hoffman 1972). The whole

[1] As recently as September 4th, 2017, Attorney General Jeff Sessions, referring to DACA, the program that protects from deportation undocumented who arrived as children said "[It] denied jobs to hundreds of thousands of Americans by allowing those same illegal aliens to take those jobs."

[2] Some estimates (e.g., Balderrama and Rodriguez 2006,) indicate a number of repatriation as large as 1 million. The more reasonable and better documented ones, however, suggest the numbers we reported in the text

1929-39 decade is considered by some scholars as a decade of civil right abuse and prevarications at the expenses of the Mexican American community (see for instance the book "*Decade of Betrayal*" by Balderrama and Rodriguez 2006). In our analysis we consider the total decline between 1930 and 1940 of the Mexican labor force in 893 US cities, relative to the total population in 1930, as a measure of the intensity of repatriation relevant for the local labor market. Then, we analyze as outcomes, the percent change in employment and in unemployment of natives during the same period (1930-40). Our first goal is to see if there was any correlation between native employment or wage growth and Mexican Deportation across economic areas.

The simple correlation obtained from a cross-sectional regression, even when we include a vast array of controls, shows that larger repatriation of Mexicans was associated with *lower* employment of natives and *higher* unemployment of natives. These correlation, which are usually not statistically significant, may not capture causation. Cities that were most negatively affected by the Great Depression, could have experienced voluntary Mexican repatriation as well as native employment decline. To alleviate these concerns and to make some progress towards identification of causality we construct a measure of imputed repatriation by city, based on the national excess-repatriation of Mexicans relative to other migrants, by age groups. We then use the share of Mexicans and their age distribution in 1930 in cities to predict the excess repatriation, independently of any city-specific economic conditions. Nationally, Mexicans were the only group targeted for repatriation and deportation. Hence we consider the excess repatriation rate, in aggregate, for each age group of Mexicans relative to the corresponding age group of recent European immigrants (mainly Italians, Polish and Russians) as the excess of repatriation induced by the organized pressure on Mexicans. Then we distribute these rates across age groups of Mexicans in a city, according to their Mexican population shares, by age, in 1930, and we construct an imputed repatriation rate based on the age structure. Differences in age and in the share of Mexicans across economic areas in 1930 drive the differences in imputed deportation. The imputed repatriation intensity is less likely to be correlated with the intensity of the Great Depression shock 1930-40 across cities or with other economic factors. We use such imputed repatriation rate as an instrument in our analysis and we also include a series of local controls, such as the generosity of New Deal policies, weather variables, presence of police, the local sector composition and other characteristics in 1930 that have been shown to affect employment and wages in local economies (Boustan et al. 2010, Fishback et al. 2005). The IV analysis confirms the positive correlation between Mexican labor force decline and native employment decline, usually with low or marginal statistical significance. Finally we apply a matching method, in order to estimate the average effect of repatriations in a non-parametric and possibly more robust way, relying on weaker assumptions than the 2SLS estimates. We follow Imbens (2005) and we define as "treated" those cities that experienced repatriation intensity larger

than 2 (or 5)% of the population between 1930 and 1940. We define as control those cities whose Mexican repatriation intensity was smaller than 1%. We then match each city in a group with one in the other, so as to minimize the distance of an array of pre-determined variables within the pair. Calculating then the average difference in labor market outcomes of natives between paired treatment and control units we have an estimate of the effect of the treatment (repatriation of 2% or more). The results with this non-parametric method are also in line with the 2SLS results. In most specifications we obtain that, large repatriation rates produced lower native employment growth and larger unemployment growth, although most of the time the coefficients are not statistically significant. Interestingly, isolating cities with really large repatriation rates (more than 5% of population) this methods produces the most significant *negative* effect on native employment indicating that the local labor market disruption caused by repatriations may have affected native employment in a significantly negative way.

Year 1940 is a good time to analyze medium-run effects of the repatriation, which took place over 4-6 years and was supposed to provide relief to native unemployment by freeing jobs that natives wold have taken. Hence our main focus is to analyze whether repatriation affected native labor market outcomes 1930-40. Then we can also investigate whether any such impact was persistent to the 1950 outcomes of natives. The advantage of analyzing this episode is that we can learn the medium and long run effect of a large program of Mexican repatriation obtaining useful test of the claim that this is a way to increase native employment. We should notice, interestingly, that the situation reversed after 1950. With the expansion of the Bracero Program, some of the cities that had experienced a large repatriation of Mexicans in the 1930-40 period because of their large Mexican community in 1930, began to experience larger inflows of Mexicans again after 1950. Hence the size of repatriation in the 1930's become a predictor of the positive flow of Mexican immigrants in the 1950's and later. By then the negative impact of the repatriation on the local Mexican labor force was fully reversed, and it does not make sense to consider area of large repatriation in the 1930's as experiencing lower supply of Mexican workers after the 1950's.

The main finding of our IV analysis is that repatriation of Mexicans in local economic areas were associated with, sometimes significant, loss of employment for natives and decline in their wages. The matching analysis confirms these findings and possibly suggests strongest negative effects on native employments in the cities experiencing the largest repatriation intensities (larger than 5% of population). We explore other outcomes and channels that may explain the negative local effect of repatriation on natives and we find that native workers had a tendency to downgrade their jobs in response to Mexican repatriations and that net migration of natives into the city also declined. Likely, the negative multiplier effect of losing labor and local demand may explain part of the employment and wage effect. We do not find any significant effect on employment of other

immigrants. We also find that the more negative effects from the repatriation of Mexicans were on those jobs complementary to theirs, i.e among more skilled and administrative jobs and crafts as companies likely lost workers and had to cut also on other positions. Finally the effect of larger unemployment rates in areas fo large Mexican repatriations seems to last, although attenuated, as long as 1950.

There are several studies trying to assess the labor market impact of immigrants to the U.S. and some of them, such as Borjas and Katz (2007), Card and Lewis (2007) and Monras (2017), focus specifically on Mexican immigrants. Most of them, however, use variation in their inflow. Episodes that produced sudden and localized increase of immigrants in the U.S., such as the Mariel Boatlift, have also been object of intense study (Card 1990, Borjas 2017, Peri and Yasenov (forthcoming)). They have been considered as valuable "natural experiments" allowing the scholar to isolate likely causal effects. Alternatively the identification of the impact of immigrants on local labor markets has come from exploiting changes in the supply of immigrants constructed using shift-share proxies based on past immigrant location (Card 2001, Basso and Peri 2016) or on combination of policy changes (such as the H1B visa policy in Peri et al. 2016, Kerr and Lincoln 2010) and past location of immigrants. It is common for these studies to find only small effects of immigration on native employment and wages, both on average and specifically for less skilled natives. Several studies have provided explanations for the lack of displacement-competition effects of immigrants, ranging from complementarity of abilities (Ottaviano and Peri 2012), productivity-enhancing specialization (Peri and Sparber 2009), choice of appropriate technology (Lewis 2012) and positive local demand effects (McLaren and Hong 2015).

Rarely have researchers used repatriation of immigrants to analyze the reverse impact on natives. The importance of such analysis is multi-faceted. First, the impact of removing immigrants, who are integrated in the labor force can be very different from, and not symmetric to, the impact of adding them. There are costs of integrating workers and also cost of separating them and disrupting production and they may work different ways. Second, with several executive orders encouraging deportation of undocumented immigrants, the Trump administration is pursuing a repatriation policy with similar goals as that of the 1930's, and given the large economic and human costs of a deportation-based policy it seems important to test whether there is any truth in the promised labor market benefits to natives. Clemens et al. (2017) have recently analyzed the effects of the repatriations following the end of the Bracero Program, when almost half million agricultural workers from Mexico were excluded from the U.S. agricultural labor market. The authors find no significant effects on employment and wages of U.S.-born agricultural workers, and argue that capital-intensive technology and adjustment of crop absorbed the change, which therefore did not affect much labor market outcomes for natives. The Clemens et al. (2017) study has the

advantage of focusing on agricultural workers with the ability of analyzing some specific channels of adjustment. However, the study of such a specific policy, may have limited external validity for the economy as a whole. The margin of adjustment between immigrants and natives may be larger when considering all sectors, and the local multiplier and spillover effects may be more significant. The Bracero program and the subsequent repatriations affected mostly U.S. agricultural markets, currently a small fraction of U.S. labor markets. The repatriations of the 1930's affected, instead, many urban markets with large cities. Los Angeles (California), Gary (Indiana), and East Chicago (Indiana) were among the most active enforcers of deportations and their economies was already based on manufacturing and services. Our paper will complement and extend the analysis in that recent paper.

The rest of the paper is organized as follows. Section 2 describes the historical context and some details about the Mexican repatriation program. Section 3 describes the data we use to measure Mexican repatriations and labor market outcomes. Section 4 describes the empirical specification and our identification strategy. Section 5 discusses the framework to interpret our findings. Section **??** shows the estimates and the robustness checks and Section 7 concludes the paper.

2 Historical Background

Immigration from Mexico grew in the early 20th century, especially in the South-West of the United States, driven largely by U.S. employers recruiting Mexican workers for jobs in Railroad, Meatpacking, Steel Mill and Agriculture. In the early part of the 20th century, up to 1924, immigration from Europe was much larger and quantitatively more important. However, with the Immigration Act of 1924, imposing quotas on Europeans, but not on natives of the Western Hemisphere, immigration of Mexicans grew robustly and steadily up to 1929. Mexican immigrants were among the most recently arrived and ethnically different from the native population as of 1929. Hence, easily targeted when the sentiment about immigration turned. As the Great Depression hit the U.S. economy, beginning in year 1929, organized labor, local media and political groups pressed for (and organized themselves to help) repatriation of Mexican and Mexican Americans (see Balderrama and Rodriguez 2006). Hoffman (1972) estimates that over 400,000 Mexicans left the U.S. between 1929 and 1937. Other sources claim much higher levels (up to one million, in some sources even two million), but with little support in the official statistical records (see Gratton and Merchant 2013 for a summary of aggregate figures). The more reliable estimates imply that around 30% of the Mexican population present in the U.S. as of 1930, counted by the Census at 1.3 million people, repatriated.

In most cases, these repatriations were encouraged or forced, mainly by local authorities that

pushed or harassed local Mexicans into returning, provided free transportation in trains, coerced or partially coerced them to leave their U.S. location (see Balderrama and Rodriguez 2006). Only few of those repatriations were actual deportations by the federal government, but the federal authority allowed local and state agents to act in a forceful manner in promoting repatriation. In several cases, at least in the early years, charities and the Mexican Government were involved in helping repatriation, with the idea that this would improve the economic status of Mexican and rejoin them with their people and country. Progressively, however, the local authority, especially States, became more aggressive in promoting repatriation, even those classified as "voluntary". Only recently some U.S. states recognized their role in violating civil liberties and coercing even citizens into repatriation. The state of California has issued in 2005 and "*Apology Act for the 1930s Mexican Repatriation Program*".

One feature of the repatriation program that is very clear is that it was strongly predicated on the economic cost of Mexican immigrants and on their role in increasing local unemployment and depriving citizens of jobs. Somewhat inconsistently the two main reasons adduced by Secretary of Labor William Doak (Hoffman 1972) for repatriation were that (i) "*it was essential to reduce unemployment of citizens*", and that (ii)"*many of the target individuals were jobless and on relief*" (i.e., receiving some form of public or charity assistance). This constant and repeated claim of a positive effect of repatriation on local unemployment was behind the involvement into the program of local authorities and charities. It seems, therefore important, ex-post to evaluate whether, as criticized as this large scale repatriation program was, in terms of civil liberties, personal freedom and social consequences, there is any evidence that it had a positive correlation with (effects on) local labor market conditions for citizens. This paper tackles such question.

We want to emphasize that our measures of Mexican repatriation are simply based on the decline in Mexican labor force in the U.S., after accounting for the natural mortality rate of the existing population. Repatriations were not necessarily deportation, and in fact actual deportations (by the federal and local government) were only a small fraction of the total repatriations (around 20-30% as estimated by Gratton and Merchant 2013). However a series of measures was put in place, from organized return trains, to information campaign to repatriate, to active discouraging Mexicans from working or applying for local support, to paying for their return trip and those certainly had a strong effect in encouraging "voluntary" return. The focus of our analysis is not the effect of coerced removal, but the economic effect of many Mexican and Mexican American leaving the U.S. economy at a rate and following a geographic pattern which, as we show below, was very different from the repatriation of other migrants who returned on a strictly voluntary basis.

One possible complication of our analysis is that the main period we are considering (1930-

40) includes the years of the Great Depression, and hence very deep disruption of the economic activities in many areas and sectors. Other studies (e.g., Boustan et al. 2010, Fishback et al. 2005), have analyzed this period and shown that local weather conditions, especially extreme events such as the Dust Bowl and extreme droughts and differences in the local generosity of New Deal policies, beginning in 1933, have also produced large local effects as well as internal mobility in response to those. We include local weather conditions and intensity of New Deal policy as controls in our analysis to assuage the concern that they may be correlated with Mexican repatriation and local economic conditions.

After 1940, and especially in the 1950's, the introduction of a temporary migration program for Mexicans, the Bracero program, and its progressive growth, opened the door to more Mexican migration. A large number of temporary workers entered the country but also a large number of undocumented workers entered. Deportations of undocumented became systematic in the 1940's with large number of Mexicans apprehended and coerced to return. Periodically some large scale apprehension campaign on Mexicans was enforced (such as operation Wetback in 1954) and eventually the end of the Bracero program between 1959-63 also triggered significant deportation. However, in the historical accounts, for its intensity, relevance and widespread reach, the repatriation campaign of 1929-34 has a very prominent place and we focus on this one.

3 Data

Our main analysis considers 893 cities in the United States that we can identify consistently for the 1930, 1940 and 1950 Censuses (Ruggles et al. 2015). Central cities are place of residence in a metro area that counts at least 200,000 people in 1980. The focus on cities allows us to use the largest samples of the U.S. Census (full count samples for both 1930 and 1940) and to keep the unit of analysis comparable over decades. The 1930 and 1940 Censuses also identify State Economic Areas (SEAs), which encompass the whole U.S. territory, while cities only include the more densely populated localities. However, those units are only identified in the smaller samples (5% sample for 1930 and 1% sample for 1940) of the Census and do not allow precision of measurement of Mexican Immigrant share. Hence in the main analysis of the paper we will consider cities as units [3]. Still, to give an idea of the distribution of repatriations 1930-40 in Figure 1 we show the map of the continental U.S., divided into SEAs. Each area is represented with different intensity of gray, depending on the value of the repatriation of Mexicans as a share of the 1930 total employment which we call "repatriation intensity". The color changes in correspondence of values -0.05, -0.02 and 0 and is darker, the higher is repatriation (hence larger absolute values with negative sign).

[3]The measurement error on the share of Mexicans can be non trivial also because in some cases the variable was missing and subsequently imputed by Ruggles et al. 2015. Hence relying on the full census count is particularly important

We denote with negative sign the net flow of Mexicans out of the area (so a positive sign will imply a net inflow of Mexicans). The "repatriation intensity" of Mexicans is simply calculated as the difference in the number of Mexican in 1930 and 1940 in the area relative to total population in 1930. The areas with largest repatriation intensity are those near the border with Mexico. Then in the states of California, New Mexico, Colorado and Texas there are economic areas with intermediate repatriation and in most other states the intensity of repatriation was low, usually less than 0.02 in absolute value.

The units of observations that we can track consistently over the 1930-50 period and for which we have a sufficiently large individual samples in the Census data so as to construct reliable averages, are 893 cities. As the main goal of the paper is to analyze whether 1930-40 Mexican repatriation intensity across those cities brought better labor market outcomes for natives it is useful to have a first look at a figure plotting Mexican repatriation intensity and change in native employment 1930-40, both standardized by the 1930 working age population, against each other. This is represented in Figure 2, Panel A, in which each city is represented by a bubble whose size is proportional to its population. The first impression is that there is no correlation at all between repatriation and labor market outcomes of natives. While there is a huge variation in employment growth across cities, most of it for cities with very low intensity of repatriation, the cities with large and very large repatriation rates (negative values on the horizontal axis) do not seem to perform very far from the average. Panel B of figure A shows the same scatterplot, with change in native unemployment 1930-40 as share of working age population on the vertical axis and repatriation intensity on the horizontal. Even in this case the association is weak, but somewhat negative (see regression line). This implies that cities with larger repatriation rates (large negative values) also had larger increases in native unemployment rate.

As can be seen from Figures 1 and 2 the net flow of Mexican in most U.S. economic areas and cities was negative during the 1930-40 period. The Great Depression of 1929-35 certainly induced many immigrants of all origin, to return to their country, as employment fell dramatically in those years. However, comparing the repatriation rate of Mexicans (as deduced by their change in population) with that of three other large and recently arrived groups of immigrants, the Italians, the Polish and the Russians, one notices a much larger repatriation rate of the first group. Figure 2 Panel (a) shows 1930-40 repatriation as share of 1930 population for those groups overall. It reveals a repatriation of around 33% of the Mexicans versus only 10-15% of the Italians and Russians and 22% of the Polish. Even more interesting, the panel on the right shows the repatriation relative to initial population for people over 40 years of age. Usually return for economic reasons is prevalent among younger generations, while older migrants, who on average have spent more years in the U.S., are less likely to leave. In fact, even in this period of economic depression the change in

population of cohorts over 40 was positive for the European groups, implying immigration larger than repatriation, while it was negative for Mexicans, implying larger return of older working-age people. These statistics reveal a particularly large tendency of Mexicans to repatriate when compared to to other immigrant groups in this period. In Figure A1 of the the appendix we show that, by considering finer age cohorts (5 years), while among young immigrants the repatriation rate was similar for Mexican and European immigrants in 1930-40, for cohorts over 40 years of age the repatriation of Mexican was much larger. Hence there was an excess of repatriation of "over 40" Mexican individuals. They were probably those more reluctant to leave on their volition (as they were more rooted in the local community after long period of stay) and hence they might have been affected by the repatriation campaign, through pressure, coercion or incentives.

The largest part of the variation in repatriation relative to initial population, across cities was driven by the different size of the Mexican community across those. While there are exceptions, driven by idiosyncratic factors, especially where Mexican communities were very small, usually the total repatriation across most communities was not far from the overall national average of 33% of the Mexican population returning between 1930 and 1940. What percent this represents of the population depends largely on how large Mexican population was relative to the local population. Figure 3 shows the correlation between the size of Mexican population in 1930 as share of population and the Mexican repatriation as share of initial population. We notice a very strong and not far from linear relation in which an increase in the Mexican population as of 1930 by $x\%$ of total population was associated with an increase of about $x/3\%$ in the repatriation of Mexican as share of total population. Table 1 lists the cities with largest repatriation rate 1930-40 relative to initial population. We list all cities with values larger than 2% in absolute value, which is the threshold to define a city as "treated" when we adopt a matching strategy for the analysis. A large share of "treated" areas was in Texas, but Arizona and California are well represented and there are also localities in Indiana [4] and New Mexico.

4 Empirical Strategy

4.1 Instrumental Variable and Regression Approach

Our explanatory variable of interest is the repatriation of Mexicans between 1930 and 1940 relative to the population in 1930 for each U.S. city. We then relate such change to the change of several labor market outcomes for native workers between 1930 and 1940. In order to achieve identification of the causal effect of repatriation on labor market outcomes of natives, however, we need variation in repatriation that is uncorrelated with determinants of local labor market outcomes. We discuss

[4] The area in Indiana is East Chicago which had a very aggressive repatriation program, noticed and described by several historians such as Simon (1974).

here what is our approach to approximate such condition. Formally the repatriation variable is defined as follows

$$\frac{\Delta MEX_c}{P_{c,1930}} = \left[\frac{MEX_{c,1940} - MEX_{c,1930}}{MEX_{c,1930}}\right] \cdot \frac{MEX_{c,1930}}{P_{c,1930}} \tag{1}$$

The term $\Delta MEX_c = MEX_{c,1940} - MEX_{c,1930}$ represents the change in the Mexican labor force between 1930 and 1940 in city c[5]. This change in labor force is taken as a proxy for the repatriation of Mexicans. The term $P_{c,1930}$ is the total working age population in city c and year 1930 and we use it as standardization. Any effect of repatriation will depend on how large the decline in Mexicans was relative to the local population. The decomposition on the right hand side of equation (1) shows how the variation of the repatriation variable across cities, depends on two terms. The first term, $\left[\frac{MEX_{c,1940} - MEX_{c,1930}}{MEX_{c,1930}}\right]$ is the intensity of repatriation of the Mexican community in city c, or what percentage of Mexicans repatriated between 1930 and 1940. The second, $\frac{MEX_{c,1930}}{P_{c,1930}}$, is the share of Mexicans in the population of working age of city c.

We will begin our empirical analysis showing the correlation between the repatriation variable in (1) and several labor market outcomes of natives across cities. However, a first order concern is that of identifying a source of variation for $\frac{\Delta MEX_c}{P_{c,1930}}$ which, after controlling for some observable city features, is uncorrelated with local determinants of labor market demand and economic performance between 1930 and 1940. In the decomposition it is clear that the first term, capturing intensity of local repatriation of the Mexican community, can be highly correlated with local economic and labor market trends 1930-40: in cities more affected by the Great Depression the tendency of Mexicans (and any other group) to leave will be higher. Moreover, on average, the Mexican repatriation rate can be correlated with repatriation rate of all immigrant groups, and hence be a very bad proxy for the specific "excess repatriation" of Mexicans that we would like to capture as explanatory variable. On the other hand the share of Mexicans in the local working age population, $\frac{MEX_{c,1930}}{P_{c,1930}}$, is at least pre-determined relative to the labor market outcomes of the 1930-40 period. While that share is not random, and certainly correlated with other observable and unobservable city-characteristics as of 1930 that may have affected economic trends 1930-40 we can at least begin from it as it is less directly correlated with labor market outcomes 1930-40, but is highly correlated with Mexican repatriation (as showed in Figure 3).

In our main instrumental variable strategy we will exploit variation of the Share of Mexican in the city-Population in 1930 and its age composition in 1930, and apply a national repatriation rate of Mexican by age, relative to European, as such difference suggests an excess repatriation likely achieved because of the campaign (as discussed in 2). At the same time we can control for several

[5]Throughout our analysis, we restrict our sample to individuals aged 18 to 65 who were not self-employed, living in group quarters, or enrolled in school.

economic characteristics in year 1930, that may correlate with the share of Mexicans such as the share of employment in agriculture, in manufacturing, the share of nonwhite in the population and the age composition of the native population. If those variables affect economic performance 1930-40 their inclusion reduces the risk of spurious correlation.

At the same time we will control for several measures related to the intensity of the depression across cities 1930-40 such as New Deal incentives, weather variables, employment growth as predicted by a Bartik, intensity of crime as predicted by police forces and state fixed effects.

Finally to have some insight if the share of Mexican can be correlated to other unobservable determinants of employment and wage of natives that are not observable but persistent over time we will check whether such a share in 1930 was correlated to the labor market trends 1910-30.

The IV that we construct which we can call an imputed repatriation rate, therefore, is:

$$\frac{\Delta \widehat{MEX}_c}{P_{c,1930}} = \sum_g \left[\frac{MEX^g_{1940} - MEX^g_{1930}}{MEX^g_{1930}} - \frac{EU^g_{1940} - EU^g_{1930}}{EU^g_{1930}} \right] \cdot \frac{MEX^g_{c,1930}}{P_{c,1930}} \tag{2}$$

In it we exploit the different share of Mexicans, by age (g) in the population of city c and we apply to it the excess deportation intensity of Mexicans relative to Europeans in that age group [6] Such a variable will be larger in cities with larger share of Mexicans, and particularly large in cities with large share of Mexicans among the age groups that experienced large excess repatriation. A simpler alternative Instrument that we will also use applies the national repatriation rate of Mexicans to the Mexican population share as follows.

$$\left(\frac{\Delta \widehat{MEX}_c}{P_{c,1930}} \right)_{Alt} = \left[\frac{MEX_{1940} - MEX_{1930}}{MEX_{1930}} \right] \cdot \frac{MEX_{c,1930}}{P_{c,1930}} \tag{3}$$

This second method simply uses differences in the share of Mexicans as identifying variation across cities.

The main equation that we estimate, first in OLS and then in 2SLS with the instruments described above is as follows:

$$y^j_c = \phi_s + \beta^j_y \frac{\Delta MEX_c}{P_{c,1930}} + \gamma X^j_c + \varepsilon^j_c \tag{4}$$

The variable y^j_c is the period (1930-40) change in outcome y (either employment or unemployment in our main specifications) for the subgroup (j) of workers (either natives or other foreign-born or sub-groups of those populations), standardized by local population in 1930. The term ϕ_s captures state-specific effects. Our main variable, $\Delta MEX_c/P_c$, is the period (1930-40) change in Mexican-origin workers, standardized by total local employment in 1930. The term X_c includes other city-specific controls,measured either in year 1930 taken as changes over the 1930-40 decade

[6] We use the following nine age groups: 18-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, and 61-65.

and ε_c^j is an idiosyncratic, zero-mean error term.

Note that we define Mexicans as Mexican-origin, including those born in Mexico and the children of Mexican parents, because the deportation program was conducted based on ethnicity-race rather than their place of birth. This means that many of the repatriated people of Mexican-origin workers were U.S. citizens [7]. Accordingly, native-born workers are also defined as U.S.-born who are not children of Mexican-born parents. Other immigrants only include the first generation foreign-born without Mexican-origin.

If the exclusion restrictions are satisfied, once we control for the variables X_c^j, the coefficient $\beta_y^j/100$ can be interpreted as the effect on outcome y, for subgroup j, of a deportation intensity of Mexicans equal to one percent of the working age population, when estimated using 2SLS.

4.2 Matching

As an alternative to the 2SLS strategy we also implement a matching method. Its main advantage is that it does not depend on linearity and parametric assumptions about the effect of repatriation on native labor outcomes and therefore is more robust. Hence, it will strengthen the credibility of our results and provide another estimate of the average effect of repatriation, using somewhat different identification assumptions. The core idea of this method consists in, upon classifying cities as either treated or control units, matching each one of them with one or more similar cities in the opposite group (Imbens 2015). In our setting we define "treatment" to be the experience of a high Mexican repatriation intensity between 1930 and 1940, while "control" corresponds to the experience of a very low (near zero) level of Mexican outflow. The identifying assumption is that, after conditioning on a set of covariates (or the propensity score), the treatment assignment is random. In other words, the only systematic differences between matched cities in different groups is, essentially, the share of Mexicans, which drives the differences in repatriation rate. We are able to condition on a rich set of labor market characteristics including pre-1930 employment and unemployment trends, Bartik index as well as demographic, industrial and human capital city compositions as of 1930.

To be more specific, consider the potential outcomes framework (Rubin 1974) where Y_i^1 denotes the outcome of city i if it is the treated group and Y_i^0 its outcome if it was in the control group. For each city only one of these outcomes is observed. For instance, for all cities in the treatment group we observe Y^1 but we have no information on the counter-factual outcome Y^0. Conversely, for the control group, we observe Y^0 but we have no information on the values Y^1. The missing counter-factual outcomes then need to be imputed. The matching estimator does that by averaging

[7] The fact that U.S. citizens were encouraged or coerced to repatriate was later considered as a grave civil right violation by states and local governments. In 2005, the State of California passed the "*Apology Act for the 1930s Mexican Repatriation Program*", apologizing for the state government's role in the repatriation.

the outcomes for the most similar cities in the opposite group.

We implement two different estimators, nearest neighbor and propensity score matching. The first one defines similarity among cities as a weighted function of a set of variables, chosen in the matching. These variables in our case will be relative to demographic/economic and labor market characteristics in 1930 and to their 1910-30 trends. Hence a city with the closest economic/demographic/labor market characteristics, but in the opposite group, will be matched to each treatment and each control. The method is non-parametric as it does not impose any explicit functional form for either the treatment or the outcome. The second approach we use is matching the propensity score. It, on the other hand, defines similarity based on estimated treatment probability. It requires estimating the probability of being in the treatment group in a first stage which is done parametrically, imposing a linear (or logit) model.

The main parameter of interest, when implementing this method, is the average treatment effect (ATE).[8] Namely, this is the mean difference between the potential outcomes (either observed or imputed) in the treated and untreated matched units across all cities, $E[Y_1 - Y_0]$. It is estimated via its sample analog

$$ATE = \frac{1}{N}\sum_{i=1}^{N} Y_i^1 - Y_i^0.$$[9]

The estimates are then interpreted as the average effect of Mexican repatriation on natives' labor market outcomes. Upon multiplying by a scaling factor they can be compared to the ones obtained from the 2SLS method. We show robust standard errors derived by Abadie and Imbens (2006, 2011, 2016)

5 Framework to Interpret the Estimated Coefficients

Our main empirical approach focuses on the identification of the effect of repatriations on the change in employment of natives using a reduced-form approach. The estimates of such effect (captured by the coefficient β in the regression and the average treatment effect in the matching method) can be interpreted within the framework of a labor demand and labor supply model. Its sign and magnitude will be compatible with some levels of complementarity between native and Mexican workers and with the existence of technological-productive spillovers and not with others.

The easiest way to interpret our estimated coefficient is to think of the repatriation of Mexicans as a decrease in the supply of the specific type of labor provided by that group. Mexicans have skills, occupational distribution and task employment that characterize them. Repatriating them

[8] A related parameter potentially of interest is the average treatment effect on the treated ATET, $E[Y_1 - Y_0|treated]$. In our case, however, the number of treated cities is very small so this is a noisy and potentially unreliable parameter.

[9] For notational simplicity we ignore denoting imputed outcomes. Technically, the treatment effect for the control group should be denoted $\hat{Y}_1 - Y_0$ and for the treatment it should be $Y_1 - \hat{Y}_0$

will cause a decrease in the supply of those. As we are considering a decade of repatriations and its consequences we should think of the effects as medium-long run effects. It is reasonable to think that over the decade the change in Mexican supply is accompanied with changes in capital. This, as a complementary factor, would leave locations where there is decline of Mexicans implying a decline in labor demand that accompanies the lower labor supply. However, if capital is significantly slower than labor to adjust, there may be an increase in capital per workers in correspondence of repatriation and hence average wages would increase more where more Mexicans are repatriated. Hence, a negative estimate of the coefficient β in equation 4 would be consistent with the idea that departure of Mexicans free up some capital per worker and natives' employment opportunity benefit from it. This is a "short run effect" emphasized in Borjas (2003). It may still be present in the 10-year horizon only if capital is quite slow to adjust.

A second relevant aspect in determining the sign of the β coefficient is the complementarity of Mexican and native workers are in the production process. If their jobs and tasks are rather different (e.g., Mexicans are farm workers and natives are administrators or Mexicans are laborers and natives are white collars) and complementary, (i.e., both needed for production), then a decrease in Mexicans will also decrease the demand for native workers, implying a negative estimate of β. To the contrary if Mexicans and Natives are substitutes for each other and competing for same jobs, then a decrease in Mexican supply would create job opportunities and increase employment of natives, implying a positive vale of β. Mexicans can be complementary to natives because they have different skills (Ottaviano and Peri 2012), because they specialize in different occupations (see Peri and Sparber 2009 or Foged and Peri 2016). More generally, their presence may trigger adjustment in technology and capital (Lewis 2011, Clemens et al. 2017) that affects productivity of natives and hence may generate complementarity in the long-run.

The sign of the average effect on natives (employment, unemployment and wages) coefficient will reveal the aggregate intensity of complementarity-competition-return to scale effect of Mexicans on all natives. A negative sign of β in the employment regression (or positive in the unemployment regression) implies that more repatriations increase the employment of natives and hence that, in net, the competition /decreasing return effects prevail: decreasing Mexican supply is beneficial to the aggregate demand/productivity of natives. To the contrary a positive β estimate implies that the complementarity/increasing return effects prevail and fewer Mexicans reduce the demand for native labor. A zero effect will imply that those two forces balance each other and a decrease in Mexican labor does not affect natives' productivity.

Before presenting the estimation we provide a descriptive element for the Mexican immigrants, that begins to describe their labor market characteristics in comparison to Natives. Table 2 shows the distribution of three groups of workers: Mexican, other foreign-born and natives across 11

broad occupation groups. These occupations are ranked, based on their average hourly wage paid in 1940, which are reported in the last column of the table. This table provides a clear representation of the very different occupational distribution between Mexicans and Natives. Relative to natives Mexicans are heavily employed among the low-wage occupations, such as Laborers and Farm workers. Bout two thirds of Mexican workers are in those two groups while only 20% of natives are. To the contrary they are under-represented among Clerical, Managerial. Professional and sales occupations, which pay relatively high wages, at the top of the table. While about one third of natives is employed in the top 4 groups, only 5% of Mexicans is. Other immigrants seem to concentrate in intermediate wage occupations such as Craftsman and Operatives. Such complementary occupational distribution between Mexican immigrants and natives, and the heavy Mexican employment at the lower rungs of the wage ladder, implies that the mechanisms of complementarity (as in Ottaviano and Peri 2012), different specialization (as described in Peri and Sparber 2012) and possible "push-up" of natives in the ladder of occupations (as in Foged and Peri 2016) are likely to be at work between Mexicans and Natives of this era.

6 Implementation and Results

6.1 Instrumental Variables: Validity and First stage

Our main identification strategy consists in implementing the 2SLS estimation described in Section 4.1. The main instrumental variable used is the one described in (2). In robustness checks we also use the simpler specifications (3). iIn Table 3 we show the coefficients from the first-stage regression:

$$\frac{\Delta MEX_c}{P_{c,1930}} = \alpha_s + \theta \frac{\Delta \widehat{MEX}_c}{P_{c,1930}} + \gamma X_c^j + e_c \tag{5}$$

The coefficient θ, reported in the first row of the table, represents the effect of the imputed change in Mexicans (obtained as in formula 2) on the actual change in Mexicans as share of the population in working age, which is the explanatory variable in our second-stage regression (4). The key identifying assumption when using these instruments is that the predetermined shares of Mexicans in each city by age group in 1930 - after controlling for other variables and local characteristics - are independent of other unobservable factors varying across cities and affecting labor market outcome of natives. We will provide some tests of this identifying assumption in Table 4 below.

First let's review Table 3 and the different specifications we considered. The unweighted and weighted regression coefficients, without any controls, are reported in column 1 and 2 respectively. The weights consist of the population in working age in the city as of 1930. The estimated coeffi-

cients are highly significant and around 0.4. Specifically, an increase in the imputed repatriation intensity by one percentage point leads to 0.4 percentage point increase in actual repatriation intensity between 1930 and 1940. In column 3, we add state dummies to capture state-specific trends. It is important to include state effects in our context, because the Mexican repatriation was highly concentrated in some states and hence within state variation provide a much tighter comparison of differential repatriation rates. Including the state fixed effects, does not alter significantly the estimated coefficient and the explanatory power of the instrument.

In Column 4, we directly control for a set of local economics and demographic characteristics in 1930 that may be correlated with the presence of Mexican communities in 1930. They may also be correlated with the labor market performance of a city in the 1930-40 period. Specifically, we first include the share of agricultural and manufacturing workers in the local labor force. As described in Table 2, Mexicans were highly concentrated in Agriculture. Moreover Manufacturing was a very important sector in this period, deeply affected by the Great Depression. At the same time, we add demographic variables including share of nonwhite and the share of young individuals (aged 18 to 40) in the city. As the Mexican repatriation was targeting ethnicity (sometimes defined as race) and the excess repatriation was higher for older people (Figure 3), controlling for these variables should reduce the risk of spurious correlation. We also include, as control, the logarithm of total population in working age as of 1930. As this variable contributes, as standardization in the denominator, both to the explanatory variable and to the IV, it may create a spurious correlation (see Clemens and Hunt 2017 for a detailed account of this potential problem). Even controlling for these local characteristics, our instruments strongly explain the actual repatriation with an FD-statistics around 25. We always include these variables in the subsequent columns.

Column 5 then addresses two additional important concerns. The first is the difference in severity of the Great Depression across cities in the U.S.. As this period experienced a major drop in economic activity in several specific sectors, the sector composition of cities might explain large part of the employment performance, and could be correlated with Mexican share. Hence we construct a Bartik instrument that predicts the employment growth of workers based on each city's industrial composition in 1930 and the national employment growth of that industry in the 1930-40 period. Namely the included control is:

$$BIV_c = \sum_i \eta_{ic} \Delta E_i \tag{6}$$

where η_{ic} is the share of total employment of city c in industry i as of 1930; ΔE_i is the national-level change in the log of total employment in the same industry between 1930 and 1940.[10] The

[10]We use sixteen broadly defined industries according to Census industrial code in 1950 (a variable "ind1950" in IPUMS.

second is the different intensity of local police. This may be an indicator of local crime. As a proxy, we include the number of policemen in 1930, standardized by local population in 1930. With these two controls, compared to Column 4, the estimated coefficient changes little and keeps its power.

In Column 6, we also control for the generosity of New Deal (log total grants received) and extreme weather (Dust Bowl intensity and the sum of months with extreme wet or drought) both from Fishback et al. (2010).[11] Previous studies (Fishback et al. (2010)) have documented that these factors have affected the migration of natives during the Great Depression. Nonetheless, when controlling for these factors, our instrument strongly predicts the actual repatriation of Mexicans.

Lastly, in Column 7, we use the simpler instrument in (3), applying the national repatriation rate of Mexicans, instead of using the excess repatriation rate by age groups. This simplification actually increases the power of the imputed repatriation instrument, as it likely proxies closer for the repatriation intensity of Mexicans. Overall these different specifications show that the instrument is strong (F-stat around 25 in most specifications with controls) and robust in its power to the inclusion of several controls.

Table 4 tests the correlation between the share of Mexicans in population 1930 and the pre-trends (1910-30) of our three outcome variables: native employment, native unemployment, and growth of native occupational wage. This is an important test to check whether potential unobservable, but persistent, local factors, are correlated with the Mexican distribution in 1930 and with labor market performance of natives. Reassuringly, there is no significant correlation between the Mexican communities in 1930 and pre-1930 trends of the outcome variables for native workers.

Table 5, then, tests whether our imputed IV, constructed to predict the negative change in Mexican immigrants during the forced repatriation period, has some predictive power on the change of the Mexican population across cities in the long-run, namely over the period 1930-50 and 1930-60. Assuming that our IV proxies for forced repatriations in the 1930-40 period, Table 5 checks whether that decline still had predictive power on change of Mexicans at the local level between 1930 and 1950 (column 2) and between 1930 and 1960 (Column 2). Interestingly, the tables reveal that larger imputed repatriations still affected the change of Mexican population over the 1930-50 period: the localities with larger repatriations had larger decline of Mexican over the whole twenty-year period. This is revealed by the positive and significant coefficient. However by 1960, when Mexican had started coming back to the US, through the Bracero program and through other channels, the correlation turns negative. This reveals that cities of large repatriation (which therefore had a large Mexican community in 1930) became cities of larger positive inflow, as Mexicans were again attracted by existing networks of previous immigrants. Hence, when looking at the impact of repatriations, i.e. of an outflow of Mexicans, we need to focus on the 1930-1950

[11] We translate the county-level data into city-level measures using the information from 1930 Census.

period as after that the outflow reversed.

Overall, our first stage results along with the falsifications demonstrate that our constructed instruments have significant power in predicting the actual repatriation of Mexicans and not significantly correlated with the unobservable factors that affects labor market outcomes of native workers.

6.2 Regressions: Employment and Unemployment Outcomes

Before we present the Instrumental Variables regression results we show, in Table 6, the OLS results obtained estimating equation (4). These results show simply partial correlations. The top Panel A shows the results when the dependent variable is (changes in) native employment relative to the 1930 working age population. The bottom Panel B shows estimates from corresponding specifications when (changes in) native unemployment is the dependent variable. Units of observation are 893 cities in the continental US. In each column we consider a different model specification. In Column 1 we show a basic specification that includes only state fixed effects. In Columns 2, 3 and 4 we progressively add city characteristics as of 1930 and control for variables in the 1930-40 period. In Column 5 we control also for pre-trends in employment and unemployment during the period 1910-30. In the last two columns we consider some specific subsamples. In Column 6 we focus only on the targeted states where the policy was enforced with particular intensity, i.e., Arizona, California, Colorado, Illinois, Indiana, Michigan, New Mexico and Texas. These are the states in which most historical accounts of the repatriation campaign have identified strongest intensity. Finally, in Column 7 we retain only the cities with a net outflow of Mexicans between 1930 and 1940 as some cities had actually a net positive inflow of Mexicans in the decade.

Focusing on the coefficient of interest $\Delta MEX_C/P_C$ in Panel A of Table 6, when we control for predetermined characteristics (Column 2 and following ones) we see that Mexican outflow is only weakly correlated with changes in natives' employment. The point estimates suggest that a one percent Mexican outflow is correlated with about 0.2 percent *lower* employment of natives as share of 1930 labor force. This estimate is not significant however. The sign on the Bartik index is positive, denoting the important role of industry composition in predicting native employment growth. The sign of the "police" variable is rather unstable and usually not significant.

In Panel B, we see that Mexican repatriations were correlated with higher unemployment for natives. A Mexican outflow of 1 percent of the population is associated with higher natives' unemployment bu 0.02 percent of the working age population. Some coefficients are statistically significant. These correlations in Table 6, of course, may be the affected by the fact that Mexicans were voluntarily leaving cities which were severely hit by the Great Depression. In order to estimate a coefficient which better captures the causality link from repatriation to native employment we

look at the instrumental variable results.

In Table 7 we show the 2SLS estimates of equation 4 using $\Delta\widehat{MEX}_C/P_C$ as an instrument for $\Delta MEX_C/P_C$. Similarly to Table 6, in the top (bottom) Panel we present the results for changes in natives' employment (unemployment) as dependent variable. Each column considers a different specification. The first 7 columns are analogous to the ones in Table 6. In columns 7 to 11 we provide four additional results. First, as a robustness check, in Column 8 we use our alternative instrumental variable $(\Delta MEX_C/P_C)_{Alt}$. That variable is simpler and based only on the variation of Mexican share across cities. In Column 9 we focus on occupations with a high share of Mexicans. Those represent the subset of the labor market that should experience some reduction in competition from repatriation. Then in Column 10 we restrict the outcome for the subgroup of natives aged 41-65. The Mexican repatriation resulted in more intense decrease in this subgroup and hence the competition effect might be stronger and the complementarity effect weaker.

Panel A of Table 7 shows mainly positive non significant coefficients of repatriations on native employment, confirming the OLS correlation that shows association between repatriation and native employment decline. Most of the coefficients are positive, signaling that Mexican repatriations are associated with lower natives employment growth. The point estimates in columns 2-5 range between 0.277 and 0.468, stating that a 1 percent outflow of Mexicans caused between 0.27 and 0.47 lower employment rate for natives. The estimates in (6), (7) and (8) are small and not significant. The only borderline negative and significant coefficient is the one in column (9). It shows that employment in the occupations in which Mexican were most represented experienced, possibly, a higher natives employment growth. We will develop further the analysis across occupational groups in Table 8 below, to identify which groups that were (negatively) affected by the complementarity effect and which one profited from a reduced competition effects from Mexicans. The bottom panel of Table 7 shows the 2SLS results for (changes in) natives' unemployment. These results also confirm those from Table 6 in that most of the estimated coefficients are negative and some are significant. This implies that cities which experienced high Mexican repatriations also had higher natives' unemployment in the decade to follow. The medium-run coefficients range between -0.01 and -0.041 stating that an outflow of Mexicans equal to one percent of population was associated with an increase of native unemployment between 0.01 and 0.04 percent of the population.

Our instrumental variable approach confirms that the OLS results are not merely spurious, driven by differential voluntary Mexican outflow. In fact, we find that Mexican repatriation caused lower employment and higher unemployment for natives. Overall, our results in Table 7 suggest that the policy did not accomplish the stated objectives by local and federal authorities. Moreover, it actually may have detrimental labor market effects for US-born natives.

In Table 8 we break down the employment results by occupation types. Namely, we identify low- (Column 1), intermediate- (Column 2) and high-skill (Column 3) occupations. These three groups include, respectively, the bottom two, the intermediate four and the top four occupational groups showed in Table 2. As shown in that Table, Mexican workers specialized in low-skill occupations, and about two thirds of them were in the two bottom occupations (Laborers and Farm Laborers). Hence, we expect the estimate in the first column to be the most negative -a boost from repatriation -in terms of labor market effects, while the second and third column should be positive as complementary jobs may experience depressing effects from Mexican repatriations. The estimates of Column (1) are in fact rather similar to the one in Column 9 of Panel A in Table 7. Indeed, we see that the magnitudes are very similar and they are negative and borderline significant.Low-skilled occupations experienced higher native employment growth (Column 1) as Mexicans left. However, the opposite is true for medium- and high-skill occupations (Columns 2 and 3). The magnitude of the positive estimates in the last two columns is much larger than the negative estimate in the first. This indicates that the employment effect on complementary occupations were stronger than the competition effects in the "Laborer" and "Farm Laborer" occupations. The estimates of Table 8 imply that more natives lost jobs as Mexican were repatriated, because local complementary jobs were lost, than found jobs as substitutes of Mexicans.

6.3 Other Outcomes

One possibility is that, other immigrants, rather than natives, benefited from the repatriation of Mexicans in their employment outcomes. Table 2 shows that other immigrants were not as strongly concentrated among laborers as Mexicans but, rather jobs as craftsmen and operatives employed most of them. One may still think that their employment was helped to a greater extent by repatriations if their skills were closer substitute to those of Mexicans and if the local labor market conditions were improved. In Table 9 we present the results using the change in employment of non-Mexican Foreign-born workers as dependent variable and six specifications just as those of table 6. While the point estimates of these effects are usually negative, they are very small and never significant. The point estimates are between -0.018 and -0.04 and very far from statistical significance. While one can argue that other immigrants may not have been harmed in their employment opportunities by the repatriation of Mexicans, there is no evidence that they were helped.

We then analyze in Table 10, whether "occupational wages" of natives changed in response to the repatriation of Mexicans. Occupational wages are constructed by associating to an individual the average wage in her occupation in 1940 (there are no wage data for 1930). Hence the occupational wage in a city reflects the distribution of occupations and an increase in this wage implies

that there has been a shift in the distribution towards better paying occupations. By focusing on this variable for natives and on its change between 1930 and 1940 we capture whether natives had an occupational "upgrade" (positive change) or 'downgrade" (negative change) in the decade. We have emphasized that the repatriation of Mexicans may have opened some jobs for Farm laborers and laborers but also eliminated jobs in sales, administrative and clerical positions. This type of job replacement at the bottom of the wage ladder and job destruction at the top should have implied an occupational downgrading of natives in cities where repatriations were more intense. Table 10 shows that the impact of Mexican repatriation on native occupational wage was also negative, although mostly non significant, as cities with larger deportation (by 1 percent of population) had a decline in natives' occupational wages (by 0.1-0.2 percent) although not statistically significant. rather than providing better labor market options to natives the repatriations worsened the occupational wage of natives.

What we have found so far suggests that locations with large repatriation intensity experienced labor market conditions for natives similar to or somewhat worse than those with no repatriations. This is far from the promised beneficial effects mentioned by the authorities. A final test of whether repatriation rates enticed native workers, is to analyze whether those rates were correlated with net internal migration of natives and faster growth of working age population of natives. Even a positive "perceived" (if not real) effect of those repatriations may have attracted natives to those cities, looking for the jobs vacated by Mexicans and supposedly available. Table 11 shows the impact of repatriation on native population in working age (column 1) and on net internal migration of natives (column 4). Both dependent variables show a positive and not significant coefficient, implying smaller immigration and smaller native population growth in cities with larger repatriation of Mexicans. Column 2 and 3 seem to imply that cities with large Mexican repatriation had also more native churning, i.e. more immigration and emigration of them. However the net of the two effects is small and positive, as shown in the last column.

6.4 Matching

If the effects of repatriation of Mexicans are not linear and if other omitted variables also impact non linearly labor market outcomes, then the 2SLS method can be mis-specified. As described above, we also use a more robust and non-parametric method to identify the effects of repatriations. In our main specification of the Matching method, we define a city as a treated one if the repatriation rate is two percent of the initial labor force or larger and as a control one if it is equal to one percent or less. There is an intermediate group of cities with repatriation values between one and two percent which are dropped from the sample as they did not experience a significant shock and are difficult to classify as strictly treated or control. This yields 14 treated cities and 527 of control cities.

We use the following matching variables: pre-trends for employment and unemployment rates of natives in the period 1910-30, Bartik index, labor force share in manufacturing, agriculture, young (18-40), and non-white. These variables proxy labor market conditions, occupational structure and human capital across cities in our sample. In the main specification, we match each city with a single one in the opposite group (i.e., its nearest neighbor). The first stage in the propensity score analysis is estimated via logistic regression.

The average treatment effect results for changes in native employment 9Panel A) and native unemployment (Panel B) as outcome variable and the robust standard errors are shown in Table 12. The outcome variable is denoted in the title of each panel. Different specifications vary in terms of matching variables and sample specification. In Column (1) we match only the pre-trend variables. In Column 2 we show our main specification where we add to pre-trends the city sector and demographic composition in 1930 as matching variables. In the rest of the table we consider various robustness checks. In Column 3, we match each city with the two most similar cities to it in the opposite group. In the next column, (4) we focus on targeted states only. Moving to Column 5, we change the treatment threshold to experiencing a repatriation larger than five percent of the initial labor force. Note that this lowers the number of treated cities to only six. We also consider, in Column 6, the instrumental variable to assign treatment status rather than the raw repatriation rate. Lastly, in Columns 7 and 8 we implement propensity score matching where in Column 7 we match with the single nearest neighbor and in Column 8 we use the two closest cities to form the match.

The results in these tables are consistent with the ones presented in the regression analysis and they are rather robust across specifications. We find that cities which had higher level of Mexican repatriation (treated) also experienced lower employment growth and higher unemployment change between 1930 and 1940. In Panel A we see that, on average, cities which experienced large Mexican outflow had between 1 and 15 percent lower natives' employment. Only two of the estimated coefficients, however, are statistically significant. Similarly, Panel B shows small negative estimated treatment effects, with two of the coefficients attaining significance. In other words, we certainly find no robust evidence that cities with higher Mexican repatriation intensity had higher employment growth or lower unemployment levels for natives in the period 1930-40. The one significant result, which is interesting, is obtained by selecting those cities with extremely high repatriation rates (column 5). In this case cities experiencing repatriation larger than 5% of the initial population may have really been disrupted by it in their economic activity and labor markets. That column shows that they experienced growth rate of native employment lower by 15 percentage points and one percent higher unemployment, when compared with control cities.

Overall the point estimates of the 2SLS estimation and the ATE from the matching model

suggest a small not always significant depressive effect of Mexican repatriation on native employment, occupational wages and native internal migration. Also unemployment increased in cities with higher repatriations and native employment in skilled and intermediate-skilled occupations decreased. Employment of other immigrants did not seem to be much affected by repatriations. We never find any evidence that repatriation of Mexicans improved labor market outcomes of natives over the 1930-40 or over the 1930-50 period.

7 Conclusion

This paper is one of the very few studies that focuses on a large scale repatriation campaign, enacted in the US between 1929 and 1934 against Mexican and people of Mexican descent. In particular using labor market data for 893 US cities between 1930 and 1940 we analyze whether the very strong claims of politicians who enacted such measure at the time arguing that this measure was needed and would have given jobs to American and attenuated the unemployment problems, had any validity in the facts. We find that cities with larger repatriation intensity, driven by a larger initial Mexican community, performed worse in terms of native employment and wages, relative to cities which were similar in most Labor market characteristics but experienced small repatriation intensity. Not only the politician's claim is not true but the opposite seems closer to what happened. The repatriation of Mexicans, who were laborers and farm workers, reduced demand for other jobs, and especially skilled craftsman and managerial, administrative and sales jobs were mainly held by natives. And other immigrants did not gain jobs either. Given the large amount of pain, disruption and suffering that this campaign caused to Mexicans and to their families, it is very important to notice that it did not deliver any of the labor market benefits promised to natives, and in fact increased their unemployment and depressed their wages.

References

[1] Abadie, A. and Imbens, G. W. (2006). Large sample properties of matching estimators for average treatment effects. *Econometrica*, 74(1), 235-267.

[2] Abadie, A., and Imbens, G. W. (2011). Bias-corrected matching estimators for average treatment effects. *Journal of Business & Economic Statistics*, 29(1), 1-11.

[3] Abadie, A., and Imbens, G. W. (2016). Matching on the estimated propensity score. *Econometrica*, 84(2), 781-807.

[4] Balderrama, F. E. and Rodriguez, R. (2006). Decade of Betrayal: Mexican Repatriation in the 1930s. *UNM Press*. ISBN 9780826339737.

[5] Basso, G., and Peri, G. (2015). The association between immigration and labor market outcomes in the United States.

[6] Betten, N. and Mohl, R. A. (1973). From Discrimination to Repatriation: Mexican Life in Gary, Indiana, during the Great Depression. *Pacific Historical Review*. 42 (3): 370–388. ISSN 0030-8684. doi:10.2307/3637683.

[7] Borjas, G. J. (2017). The wage impact of the Marielitos: A reappraisal. *ILR Review*, 0019793917692945.

[8] Borjas, G. J., and Katz, L. F. (2007). The evolution of the Mexican-born workforce in the United States. In Mexican immigration to the United States (pp. 13-56). *University of Chicago Press*.

[9] Boustan, L. P., Fishback, P. V., and Kantor, S. (2010). The effect of internal migration on local labor markets: American cities during the great depression. *Journal of Labor Economics*, 28(4), 719-746.

[10] Card, D. (1990). The impact of the Mariel Boatlift on the Miami labor market. *ILR Review*, 43(2), 245-257.

[11] Card, D. (2001). Immigrant inflows, native outflows, and the local labor market impacts of higher immigration. *Journal of Labor Economics*, 19(1), 22-64.

[12] Card, D., and Lewis, E. G. (2007, May). The diffusion of Mexican immigrants during the 1990s: Explanations and impacts. In Mexican immigration to the United States (pp. 193-228). *University of Chicago Press*.

[13] Clemens, M. A., Lewis, E. G., and Postel, H. M. (2017). Immigration Restrictions as Active Labor Market Policy: Evidence from the Mexican Bracero Exclusion (No. w23125). National Bureau of Economic Research.

[14] Fishback, P., William H. and S. Kantor (2005) Did New Deal Grant Program Stimulate Local economies? A study of federal Grants and retail Sales During the Great depression, *The Journal of Economic History*, Vol. 65, No. 1 (March 2005).

[15] Foged, M., and Peri, G. (2016). Immigrants' effect on native workers: New analysis on longitudinal data. *American Economic Journal: Applied Economics*, 8(2), 1-34.

[16] Gratton, B., and Merchant, E. (2013). Immigration, repatriation, and deportation: The Mexican-Origin population in the United States, 1920–1950. *International Migration Review*, 47(4), 944-975.

[17] Hoffman, Abraham (1972). Mexican Repatriation Statistics: Some Suggested Alternatives to Carey McWilliams. *The Western Historical Quarterly*. 3 (4): 399. ISSN 0043-3810. doi:10.2307/966864.

[18] Hong, G., and McLaren, J. (2015). Are Immigrants a Shot in the Arm for the Local Economy? (No. w21123). National Bureau of Economic Research.

[19] Imbens, G. W. (2015). Matching methods in practice: Three examples. *Journal of Human Resources*, 50(2), 373-419.

[20] Johnson, K. R. (2005). The forgotten repatriation of persons of Mexican ancestry and lessons for the war on terror. *PACe* l. rev., 26, 1.

[21] Kerr, W. R., and Lincoln, W. F. (2010). The supply side of innovation: H-1B visa reforms and U.S. ethnic invention. *Journal of Labor Economics*, 28(3), 473-508.

[22] Lewis, E. (2011). Immigration, skill mix, and capital skill complementarity. *The Quarterly Journal of Economics*, 126(2), 1029-1069.

[23] Monras, J. (2017). Immigration and wage dynamics: Evidence from the mexican peso crisis. mimeo.

[24] Ottaviano, G. I., and Peri, G. (2012). Rethinking the effect of immigration on wages. *Journal of the European Economic Association*, 10(1), 152-197.

[25] Peri, G., Shih, K., and Sparber, C. (2015). STEM workers, H-1B visas, and productivity in U.S. cities. *Journal of Labor Economics*, 33(S1), S225-S255.

[26] Peri, G., and Sparber, C. (2009). Task specialization, immigration, and wages. *American Economic Journal: Applied Economics*, 1(3), 135-169.

[27] Peri, G., and Yasenov, V. (2017). The labor market effects of a refugee wave: Applying the synthetic control method to the Mariel Boatlift, *Journal of Human Resources*, (forthcoming)

[28] Rubin, D. B. (1974). Estimating causal effects of treatments in randomized and nonrandomized studies. *Journal of educational Psychology*, 66(5), 688.

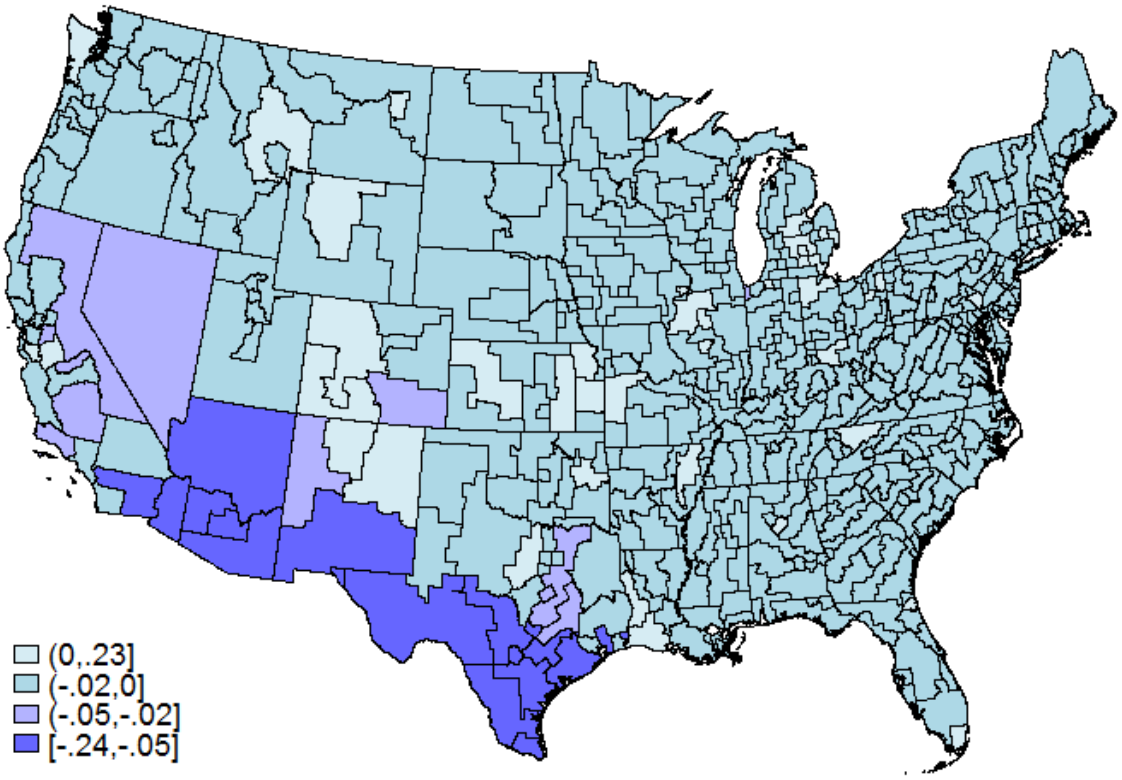
[29] Ruggles, S., K. Genadek, R. Goeken, J. Grover, and M. Sobek. (2015). Integrated Public Use Microdata Series: Version 6.0 [dataset]. Minneapolis: University of Minnesota, . http://doi.org/10.18128/D010.V6.0.

[30] Simon, D. (1974) Mexican repatriation in East Chicago, Indiana *The Journal of Ethnic Studies.* 2(2), 11.

Figures and Tables

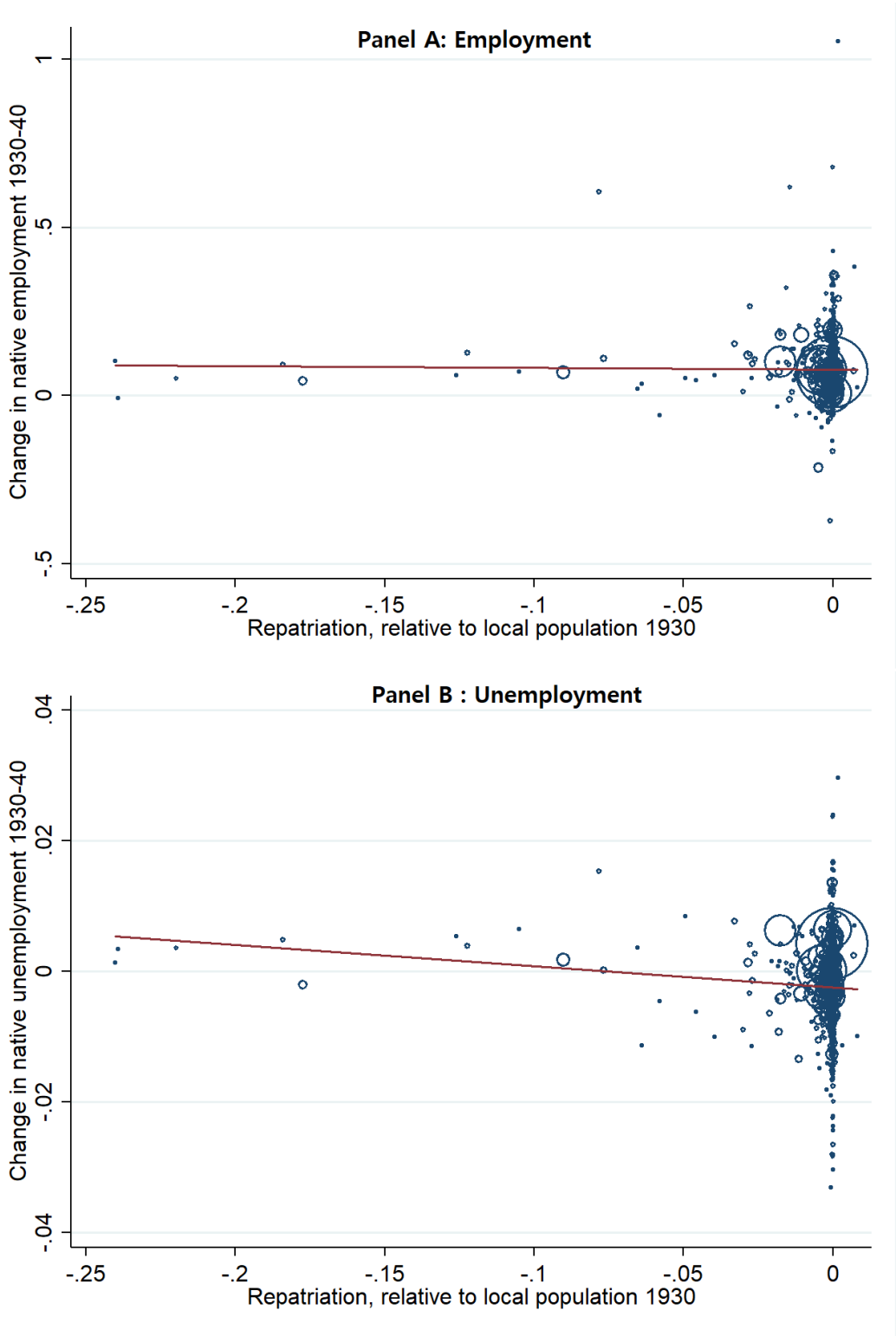
Figures

Figure 1: Mexican Repatriation Shock, as Percent of 1930 Employment



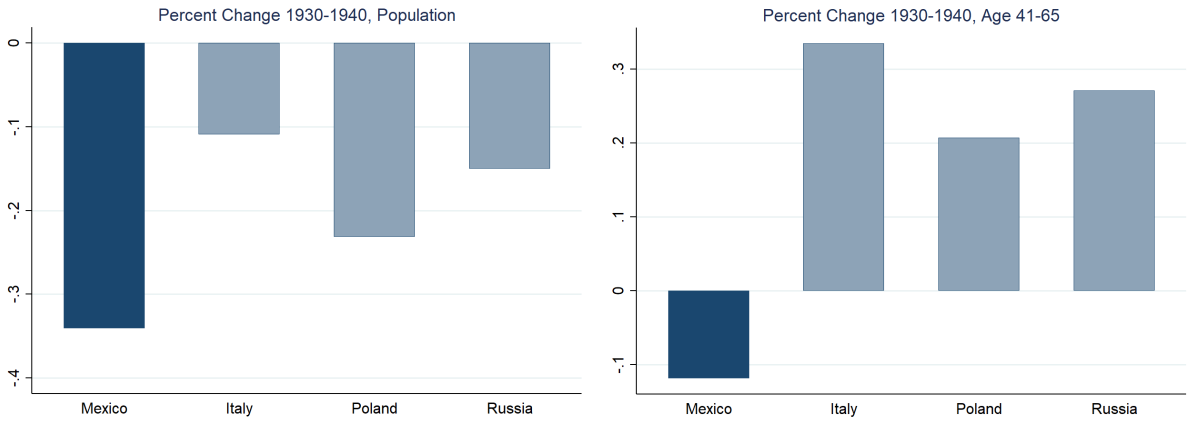
Notes: Map of changes in Mexicans between 1930 and 1940 as a share of the employment in 1930. The geographic units are State Economic Areas.

Figure 2: Mexican Repatriation and Employment and Unemployment of Natives, 1930-1940



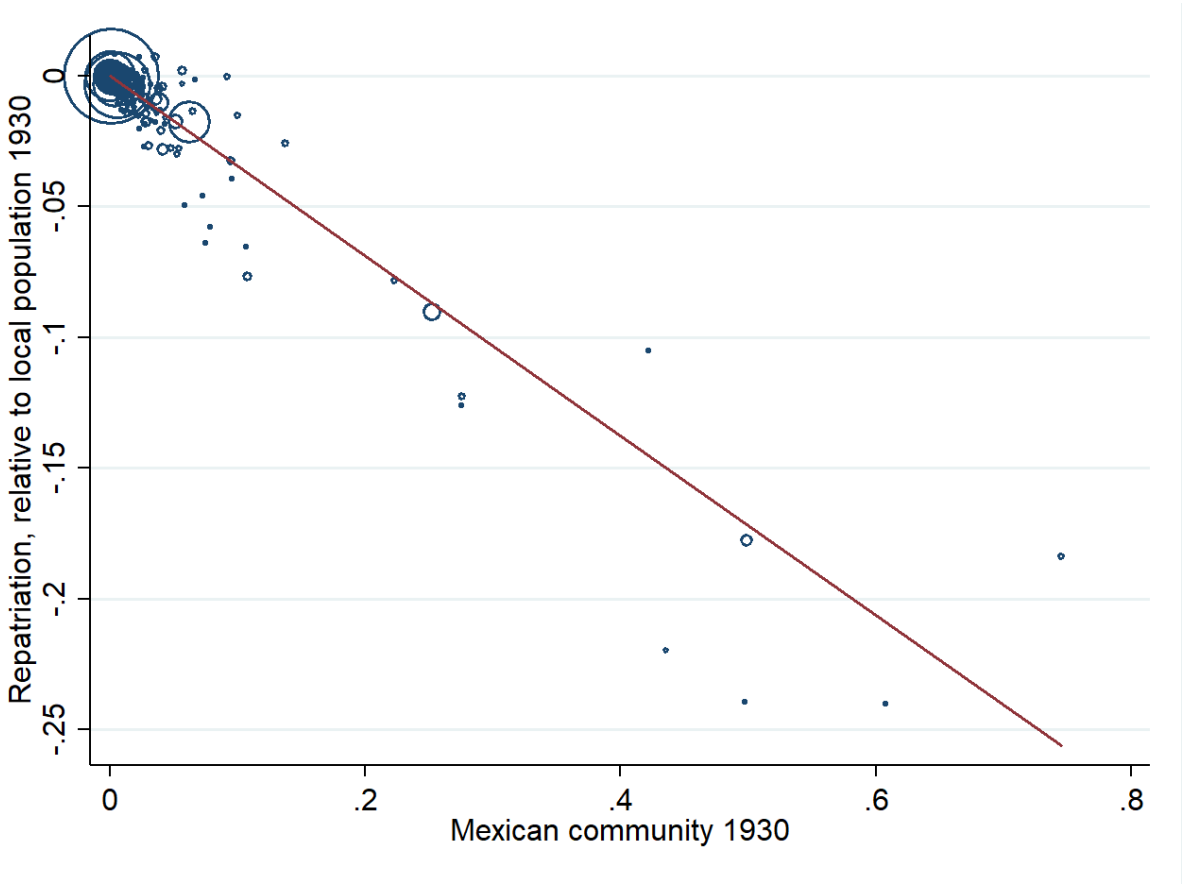
Notes: Scatter plot of the change in native employment (unemployment) between 1930 and 1940 (Y-axis) versus the change in Mexican labor force in the same period (X-axis), both as shares of the population in 1930. The circumference of the markers is proportional to the city's population in 1930.

Figure 3: Percent Change 1930-1940, Population



Notes: Percent changes in the population by ethnic groups. The left panel shows these for the overall population, and the right panel shows the same for people aged 41-65.

Figure 4: The Relationship between Repatriation and Mexican Community



Notes: Scatter plot of the change in Mexican population between 1930 and 1940 (Y-axis) versus the number of Mexicans (X-axis), both as shares of the population in 1930. The circumference of the markers is proportional to the city's population in 1930.

Tables

Table 1: Cities with Largest Shocks

State	City	Shock
TX	Del Rio	-0.24
TX	San Benito	-0.24
TX	Brownsville	-0.22
TX	Laredo	-0.18
TX	El Paso	-0.18
TX	Harlingen	-0.13
AZ	Tucson	-0.12
CA	Brawley	-0.11
TX	San Antonio	-0.09
TX	Corpus Christi	-0.08
IN	East Chicago	-0.08
CA	Anaheim	-0.07
TX	Sweetwater	-0.06
TX	Big Spring	-0.06
NM	Roswell	-0.05
CA	Fullerton	-0.05
CA	Redlands	-0.04
AZ	Phoenix	-0.03
TX	San Angelo	-0.03
IN	Gary	-0.03
CA	Bakersfield	-0.03
CA	Santa Monica	-0.03
CO	Fort Collins	-0.03
OH	Lorain	-0.03
CA	San Bernardino	-0.03
CO	Pueblo	-0.02
NE	North Platte	-0.02

Notes: List of cities ordered by largest, in absolute value, changes in Mexican labor force between 1930 and 1940 as a share of the population in 1930.

Table 2: Distribution of Workers across Occupations

Occupation	Mexican	Native	Other Foreign-born	Mean Wage
Professional, Technical	1.10%	7.39%	3.33%	3.50
Managers, Officials, and Proprietors	0.58%	4.26%	3.40%	3.89
Clerical and Kindred	1.51%	13.17%	5.24%	3.15
Sales workers	2.64%	9.13%	6.64%	3.29
Craftsmen	6.25%	14.30%	21.50%	3.35
Operatives	11.72%	15.76%	22.63%	3.02
Service workers (household)	4.64%	5.79%	6.61%	2.05
Service workers (non-household)	3.90%	5.68%	8.51%	2.82
Farm laborers	29.50%	11.83%	3.73%	2.46
Laborers	38.08%	12.51%	18.30%	2.80

Notes: Columns 2-4 show the percent workers from the specified ethnicity in various occupation categories in 1930 so that the values across columns add up to 100%. The last column shows the mean of log weekly wage for each occupation in 1940.

Table 3: First Stage Regressions, Dependent Variable: Change in Mexican Employment, 1930–1940

	(1) Basic	(2) Weighted	(3) Weighted & State FE	(4) Control: 1930 charact.	(5) Control: Bartik IV & Police	(6) Control: New Deal & Weather	(7) Applying constant rate
$\Delta\widehat{MEX}_c/P_c$	0.414***	0.415***	0.396***	0.397***	0.396***	0.395***	1.016***
	(0.060)	(0.069)	(0.073)	(0.080)	(0.080)	(0.080)	(0.079)
Bartik					0.015	0.018	0.009
					(0.014)	(0.014)	(0.006)
Police					-0.044	-0.046	-0.286**
					(0.467)	(0.500)	(0.138)
1st stage F	46.87	36.46	29.55	24.73	24.65	24.33	164.22
State FE			X	X	X	X	X
Weighted		X	X	X	X	X	X
Observations	894	893	893	893	893	868	868
R-squared	0.791	0.720	0.792	0.798	0.799	0.800	0.932

Notes: The dependent variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The explanatory variable is the imputed change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930. Local characteristics in 1930 include share of agriculture, manufacturing, nonwhite, aged 18 to 40, and log of population.
***p< 0.01, **p< 0.05, *p< 0.1

Table 4: Falsification Tests

	(1) Native employment growth 1910–1930	(2) Native unemployment growth 1910–1930	(3) Native wage growth 1910–1930
$MEX_{c,1930}/P_{c,1930}$	-0.329	-0.061	-0.134
	(0.398)	(0.045)	(0.175)
State FE	X	X	X
Observations	580	580	580
R-squared	0.414	0.417	0.175

Notes: The employment and unemployment growth between 1910 and 1930 are standardized by total working age population in 1910. The explanatory variable is the share of Mexicans in the total working age population. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 5: Long-run impact on Mexican employment, Dependent Variable: Change in Mexican

	(1) 1930–1940	(2) 1930–1950	(3) 1930–1960
$\Delta\widehat{MEX}_c/P_c$	0.396***	0.182***	-0.246
	(0.072)	(0.025)	(0.170)
State FE	X	X	X
Observations	868	92	137
R-squared	0.795	0.718	0.686

Notes: The dependent variable is the change in Mexican labor force, relative to total working age population in 1930. The explanatory variable is the imputed change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 6: Effects on Employment and Unemployment of Natives, 1930–1940 (OLS)

	(1) State FE & Weighted	(2) Control: 1930 Charact.	(3) Control: Bartik & Police	(4) Control: New Deal & Weather	(5) Control: Pre-trend	(6) Targeted States only	(7) Dropping cities with inflow of Mexicans
Panel A: Change in *Employment*							
$\Delta MEX_c/P_c$	0.017	0.179	0.153	0.152	0.199	-0.146	-0.038
	(0.203)	(0.179)	(0.181)	(0.197)	(0.184)	(0.194)	(0.204)
Bartik			0.209*	0.311***	0.105	0.538**	0.155
			(0.110)	(0.099)	(0.125)	(0.253)	(0.145)
Police			-0.900	2.471	-3.715	26.019**	1.209
			(3.822)	(3.369)	(3.563)	(12.788)	(4.691)
Panel B: Change in *Unemployment*							
$\Delta MEX_c/P_c$	-0.026*	-0.025*	-0.024*	-0.020*	-0.021	-0.023*	-0.021
	(0.014)	(0.013)	(0.013)	(0.012)	(0.015)	(0.013)	(0.014)
Bartik			-0.001	0.000	0.001	0.045**	-0.010
			(0.008)	(0.008)	(0.011)	(0.020)	(0.012)
Police			0.321	0.143	-0.083	-0.046	0.102
			(0.291)	(0.319)	(0.389)	(0.860)	(0.370)
State FE	X	X	X	X	X	X	X
Weighted	X	X	X	X	X	X	X
Observations	893	893	893	868	540	224	466

Notes: The dependent variable is either the change in employment or unemployment of natives between 1930 and 1940, relative to total working age population in 1930. The explanatory variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 7: Effects on Employment and Unemployment of Natives, 1930–1940 (2SLS)

	(1) State FE & Weighted	(2) Control: 1930 Charact.	(3) Control: Bartik & Police	(4) Control: New Deal & Weather	(5) Control: Pre-trend	(6) Targeted States only	(7) Dropping cities with inflow of Mexicans	(8) Applying constant rate	(9) Occupations with largest shocks	(10) Older natives (age 41-65)	(11) Long-run 1930–1950
Panel A: Changes in *Employment*											
$\Delta MEX_c/P_c$	0.145	0.306	0.285	0.277	0.468**	-0.132	0.092	0.074	-0.103*	0.101*	-0.392
	(0.220)	(0.216)	(0.215)	(0.236)	(0.221)	(0.246)	(0.238)	(0.201)	(0.057)	(0.055)	(0.954)
Bartik			0.205*	0.307***	0.100	0.536**	0.150	0.314***	-0.066***	0.052**	0.191
			(0.107)	(0.096)	(0.119)	(0.244)	(0.137)	(0.096)	(0.021)	(0.022)	(0.858)
Police			-0.763	2.575	-3.303	25.991**	1.346	2.405	1.923***	-0.157	38.907
			(3.690)	(3.242)	(3.378)	(12.290)	(4.368)	(3.254)	(0.747)	(0.892)	(44.837)
Panel B: Changes in *Unemployment*											
$\Delta MEX_c/P_c$	-0.016	-0.020	-0.019	-0.016	-0.010	-0.017	-0.013	-0.028**	-0.042***	-0.016	-0.210***
	(0.011)	(0.013)	(0.013)	(0.013)	(0.015)	(0.014)	(0.014)	(0.014)	(0.014)	(0.013)	(0.067)
Bartik			-0.002	0.000	0.000	0.044**	-0.010	0.001	0.010	0.000	0.143**
			(0.008)	(0.008)	(0.010)	(0.019)	(0.011)	(0.008)	(0.011)	(0.008)	(0.058)
Police			0.326	0.147	-0.065	-0.056	0.110	0.136	0.798**	0.147	6.348**
			(0.280)	(0.307)	(0.367)	(0.832)	(0.344)	(0.308)	(0.351)	(0.307)	(2.516)
1st stage F	29.55	24.73	24.65	24.33	21.65	20.83	20.85	164.22	24.33	24.33	131.10
State FE	X	X	X	X	X	X	X	X	X	X	X
Weighted	X	X	X	X	X	X	X	X	X	X	X
Observations	893	893	893	868	540	224	466	868	868	868	92

Notes: The dependent variable is either the change in employment or unemployment of natives between 1930 and 1940, relative to total working age population in 1930. The explanatory variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 8: Effects on Employment of Natives by Occupation, 1930–1940 (2SLS)

	(1)	(2)	(3)
Dependent Variable:	Low-skilled natives	Intermediate-skilled natives	High-skilled natives
$\Delta MEX_c/P_c$	-0.089*	0.278***	0.337**
	(0.051)	(0.095)	(0.133)
Bartik	-0.075***	0.295***	0.275***
	(0.018)	(0.059)	(0.039)
Police	2.036***	-2.346	-1.800
	(0.681)	(2.028)	(1.580)
1st stage F	24.33	24.33	24.33
State FE	X	X	X
Weighted	X	X	X
Observations	868	868	868
R-squared	0.241	0.402	0.448

Notes: Each dependent variable is the change in employment of natives for each occupational group, relative to total working age population in 1930. Low-skilled occupations are laborers and farm laborers. Intermediate-skilled occupations are craftsmen, operatives, and service workers. High-skilled occupations are Professional, Managers, and Clerical. The explanatory variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 9: Effects on Employment of Other Foreign-born, 1930–1940 (2SLS)

	(1) State FE & Weighted	(2) Control: 1930 Charact.	(3) Control: Bartik & Police	(4) Control: New Deal & Weather	(5) Targeted States only	(6) Dropping cities with inflow of Mexicans
$\Delta MEX_c/P_c$	-0.020	0.017	-0.012	-0.018	-0.036	-0.038
	(0.013)	(0.022)	(0.019)	(0.020)	(0.028)	(0.025)
Bartik			0.141***	0.140***	0.112***	0.152***
			(0.020)	(0.020)	(0.037)	(0.029)
Police			-4.730***	-4.326***	-3.915*	-3.628***
			(0.903)	(0.927)	(2.196)	(1.222)
1st stage F	29.55	24.73	24.65	24.33	20.83	20.85
State FE	X	X	X	X	X	X
Weighted	X	X	X	X	X	X
Observations	893	893	893	868	224	466
R-squared	0.632	0.691	0.745	0.710	0.726	0.700

Notes: The dependent variable is the change in employment of foreign-born (other than Mexican-origin) between 1930 and 1940, relative to total working age population in 1930. The explanatory variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 10: Effects on Occupational Wages of Natives, 1930–1940 (2SLS)

	(1) State FE & Weighted	(2) Control: 1930 Charact.	(3) Control: Bartik & Police	(4) Control: New Deal & Weather	(5) Targeted States only	(6) Dropping cities with inflow of Mexicans
$\Delta MEX_c/P_c$	0.321**	0.198*	0.169	0.155	0.183	0.129
	(0.125)	(0.113)	(0.112)	(0.119)	(0.129)	(0.124)
Bartik			0.206***	0.243***	0.350***	0.281***
			(0.036)	(0.036)	(0.073)	(0.045)
Police			-3.012**	-1.280	2.177	-1.073
			(1.445)	(1.449)	(3.789)	(1.699)
1st stage F	29.55	24.73	24.65	24.33	20.83	20.85
State FE	X	X	X	X	X	X
Weighted	X	X	X	X	X	X
Observations	893	893	893	868	224	466
R-squared	0.575	0.648	0.665	0.660	0.370	0.705

Notes: The dependent variable is the log change in occupational wage of natives between 1930 and 1940. Occupational wages are mean hourly wage of each occupation from 1940 Census. The explanatory variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 11: Effects on Internal Migration of Natives, (2SLS)

Dependent Variable:	(1) Working age population 1930–1940	(2) Migration inflow 1935–1940	(3) Migration outflow 1935–1940	(4) Migration netflow 1935–1940
$\Delta MEX_c/P_c$	0.512	0.572***	0.515***	0.057
	(0.923)	(0.178)	(0.124)	(0.189)
Bartik	1.118***	0.550***	0.234***	0.316***
	(0.379)	(0.070)	(0.041)	(0.067)
Police	20.546*	-0.008	-1.057	1.048
	(11.220)	(2.546)	(1.519)	(2.338)
1st stage F	24.33	24.33	24.33	24.33
State FE	X	X	X	X
Weighted	X	X	X	X
Observations	868	868	868	868
R-squared	0.343	0.726	0.716	0.419

Notes: The dependent variables are standardized by total working age population in 1930. The explanatory variable is the change in Mexican labor force between 1930 and 1940, relative to total working age population in 1930. The units of observations are cities. Standard errors in parenthesis are heteroskedasticity-robust. All the regressions are weighted by total working age population in 1930.
***p< 0.01, **p< 0.05, *p< 0.1

Table 12: Matching Results

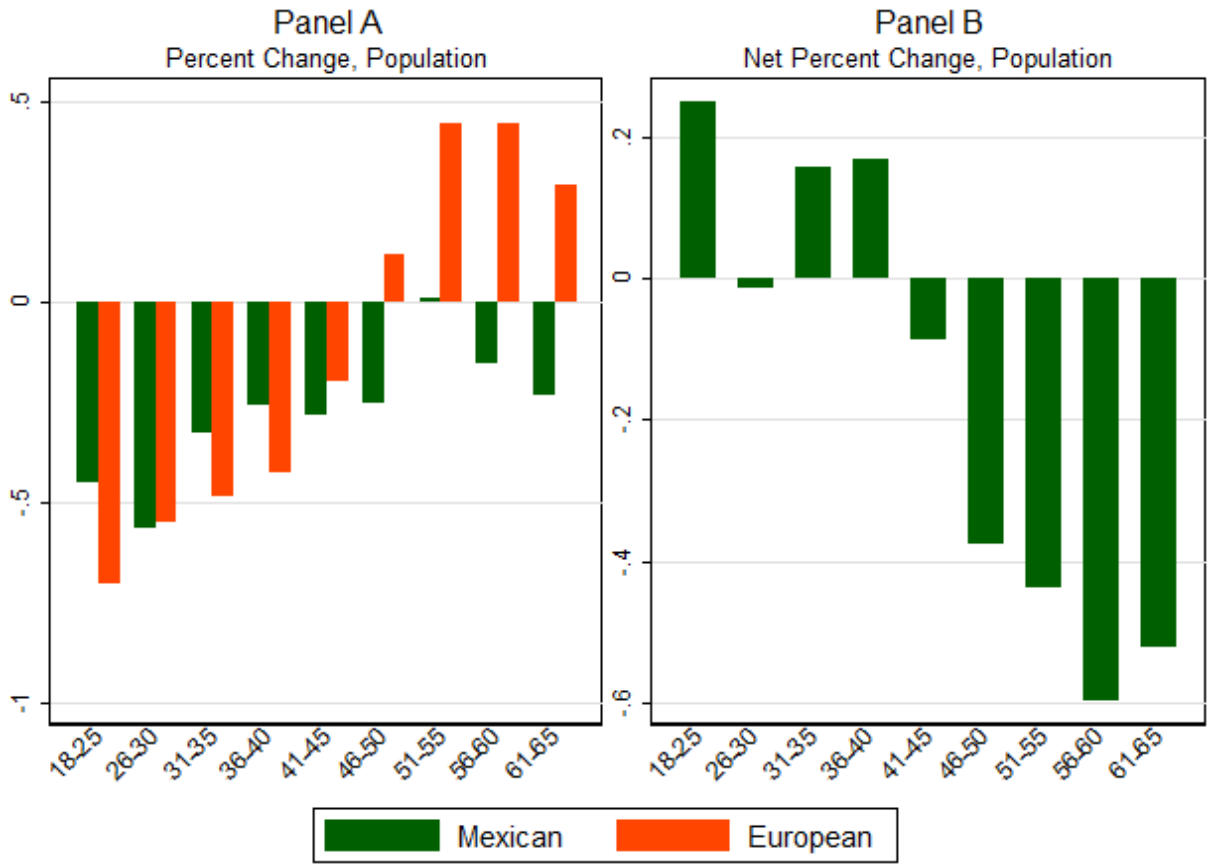
	(1) Only Pre-Trends	(2) + City Variables	(3) 2 NN	(4) Targeted States	(5) −5% Shock Threshold	(6) Imputed Shock	(7) PS Match	(8) PS Match 2 NN
	Panel A: Outcome Variable: Changes in Employment							
ATE	0.005	-0.011	-0.009	-0.014	-0.059*	-0.154***	0.001	0.015
	(0.010)	(0.016)	(0.014)	(0.022)	(0.023)	(0.024)	(0.020)	(0.014)
	Panel B: Outcome Variable: Changes in Unemployment							
ATE	-0.002	0.001	0.001	0.001	0.012***	-0.009***	-0.002	0.000
	(0.002)	(0.002)	(0.001)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
N	541	541	541	116	555	549	541	541
N treated	14	14	14	13	6	21	14	14

Notes: Each entry is an estimated average treatment effect (ATE) of Mexican repatriations and each columns considers different specification. The outcome variable in Panel A is change in natives employment and in Panel B it is change in natives' unemployment. Robust standard errors are shown in parenthesis. The first six columns show estimates from nearest neighbor (NN) matching, while the last two show propensity score (PS) matching results. Treatment (control) is defined as experiencing repatriation rate larger (smaller) than two (one) percent of the initial labor force. The matching variables are employment and unemployment pre-trends, Bartik, share young, nonwhite, in manufacturing and in agriculture. Unless otherwise noted, the default number of matches is one. See Sections 4.2 and 6.4 for more details.
***p< 0.01, **p< 0.05, *p< 0.1

Appendix

A Figures

Figure A1: Percent Change 1930-1940, by age group



note