Should They Stay or Should They Go? Immigration and Municipal Bonds

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Abstract

Increasing immigration to the United States has sparked mixed debates about its impact. This paper examines the effect of immigration on local communities, documenting immigration inflows lead to declines in municipal bond yields and increases in bond issuances. I use historical migration patterns of immigrants from 1880 onward interacted with the flow of incoming immigrants to provide quasi-random variation in the settlement decision of subsequent immigrants into local communities. The effects are stronger for communities located further away from the border, with more labor-intensive industry concentration, and where labor shortages are more prevalent. The positive impacts of immigrants on local county governments are driven by an expansion of a county's revenue and net income, rather than economies of scale, as a county's net income margin remains unchanged. Positive spillovers accrue to domestic residents through improvements to public infrastructure following immigrant inflows. These results provide evidence for the positive benefits immigrants bring to local communities.

Keywords: Municipal Bonds, Immigration, Public Finance

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1 Introduction

The United States has been facing the largest immigration inflow in its history as population of immigrants has risen from just 10 million individuals in 1970 to nearly 50 million in 2020. This wave of immigration has brought significant challenges and opportunities to the communities these immigrants ultimately settle. Despite the prevalence and importance of immigration throughout the United States' history, the longstanding policy debate surrounding the topic remains unclear.

On one side of the debate, supporters argue that immigration spurs business development and economic growth through immigrants being more likely to be entrepreneurs and higher-skilled inventors (Bernstein et al., 2022; Burchardi et al., 2020) and provide crucial labor and youth to aging communities. On the other side of the debate, skeptics argue that immigrants reduce labor market opportunities for native workers (Doran et al., 2022; Piyapromdee, 2021) or result in increases in crime (Chalfin, 2015) and consumption of public goods that outweigh their contribution. This debate has become heightened as millions of immigrants seek to enter the United States with mixed responses from local communities.[1] Prior research has studied immigration and its individual impacts on labor market prices and employment, crime, and housing prices but this makes it difficult to infer *aggregate* impacts of immigration or the ultimate impact on the communities that receive the incoming immigrants.

In this paper, I use the municipal bond market as a laboratory to examine how immigration affects local communities in aggregate.[2] Building on the notion that municipal bond yields reflect the markets' expectations of future financial risks to local economies, I examine how changes in immigration affect the cost of borrowing for U.S. counties, the use of debt proceeds, and the amount

[1]For example, the city of Wichita, Kansas has been seeking to attract incoming Mexican immigrants to help offset a labor shortage and aging demographic curve while the state of West Virginia facing similar labor and demographic tensions has been largely opposed to immigration https://www.wsj.com/us-news/the-american-city-with-a-message-for-migrants-we-want-you-69ef7049 and https://www.wsj.com/politics/policy/west-virginia-workers-migrants-jobs-0be74c9f

[2]I use the term county, municipality, and local community interchangeably throughout the paper

of debt issued by U.S. counties. Using extensive income statement data from U.S. counties allows me to examine how counties' revenue base responds to inflows in immigration and whether additional immigration benefits local governments through an increase in its taxable base of assets, an increase in taxable revenue from sales within the county, or through tax transfers of revenue from various levels of government. Additionally, data on expense categories allows me to formally test whether increases in public good expenditures on judicial courts, healthcare, policing and welfare outweigh the benefits provided by local immigrants or whether immigrants enable additional investment in public infrastructure that increase productive capacity and benefit all residents.

There are two empirical challenges to estimating the effect of immigration on municipal bond yields. The first is non-random selection of immigrants into communities. For example, immigrants might endogenously sort into communities where the marginal benefit of labor is increasing due to a positive productivity shock resulting in a positive bias or the cost of living is declining due to an exodus of native residents resulting in a negative bias. The second is county-country connections might induce a spurious correlation when a county is particularly exposed to immigrants from a particular country of origin and a specific sector (e.g. Indians settling in Silicon Valley in Santa Clara County which is dominated by tech). This connection implies that productivity shocks in the tech sector will lead to both improvements in the financial situation of these communities and potentially more immigrant inflows as labor demand increases leading to a spurious correlation between immigration and a community's financial situation and cost of borrowing.

To overcome these two concerns, I exploit the fact that immigrants are more likely to settle into communities where others of the same ethnicity have previously settled. Applying the framework of Burchardi et al. (2020), I use historical settlement and migration patterns from the U.S. Census from 1880 onward to provide quasi-random, ex-ante variation in the settlement decision of current immigrants. The framework of Burchardi et al. (2020) proceeds in two steps. First, immigrant inflows from a specific country are predicted to a given county using information orthogonal to the

county-country time pairing. For example, their approach is built upon predicting that a large number of Indian immigrants settled in Fresno County in 1900 if many Indian immigrants were arriving in the United States and many non-Indian immigrants were settling in Fresno County at this time. Second, Burchardi et al. (2020) apply the Card (2001) shift-share method using predicted ancestry as the weights in the Bartik-instrument design. Post-1975, anytime there is a large inflow of immigrants from India to the United States, counties with higher ex-ante Indian immigrant exposure receive a positive immigration shock. This identification approach results in first-stage F-statistics above 200 which far surpasses conventional measures of instrument relevance.

In the instrumental variables framework, I first show that counties with increases in non-European immigration experience a decline in municipal bond issuance yields. This relationship is robust across a variety of fixed effects, bond and county controls, and expressing the issuance yield as a difference rather than in levels. A one-standard deviation increase in non-European immigration over the last five years (17,600 immigrants) results in a decline in issuance yields of about 4 basis points or about 2 percent of the sample issuance yield spread. Consistent with counties facing labor shortages being more likely to benefit from immigration, I find that counties further away from the border, with lower per-capita income, and a smaller proportion of working age population benefit more from immigration. Additionally, I find that counties with a greater proportion of labor-intensive employment in blue-collar and service sector oriented work benefit more from immigration suggesting the benefit of complementary nature of the skill mix of immigrants.

Next, I provide direct evidence for the improving financial situation of municipalities which leads to a reduction in borrowing costs. Linking to county-level data on establishments, employments, and wages, I first show that counties experiencing a one-standard deviation increase in immigration inflows (about 17,600 immigrants) experience a 2.90 percent increase in the number of establishments and about a 5 percent increase in total employment and wages relative to their sample averages. Unlike state and federal governments which directly tax the income of residents, county governments'

revenue is comprised primarily of property and sales taxes and intergovernmental revenue which is allocated to the local government from the state and federal governments based on population or other economic measures. I show that local revenues increase by about 3.6 percent following a one-standard increase in immigration which is driven by a mix of increasing property taxes and higher intergovernmental transfers stemming primarily from the state level.

Do counties experience economies of scale from immigration inflows, leading to improved net income margins, or does immigration merely increase expenses proportionally to revenue (i.e. scaling up), resulting in higher net income? Overall, I find that a one-standard deviation increase in immigration leads to a 4.25 percent increase in expenses suggesting counties scale up rather than benefit from economies of scale. Consistent with anecdotal evidence regarding immigrants and crime, I find evidence that judicial and police expenses increase in response to immigration inflows; however, I find no change in a county's spending on health or public welfare related expenses. I document capital expenses have the strongest sensitivity to immigration inflows as counties invest in physical infrastructure assets such as roads and construction to increase the productive capacity of the county. Notably, in response to immigration inflows counties appear to make investments that benefit both incoming immigrants and native residents rather than seeking to solely maximize their short-term financial positioning.

Increasing immigration comes at the trade-off of increasing debt carried by local communities which is primarily long-term debt. A one-standard deviation increase in immigration leads to a 7.9 percent increase in the outstanding debt a county carries which is driven by increasing the number of bond issuances rather than the average issue amount. In comparison to debt, financial assets held by the city increase by only 4.3 percent increase resulting in a county's debt to equity ratio to increase by about 2 percent. To the extent that increases in issuer leverage lead to an increase in borrowing cost as investors view this municipality as a greater risk is unable to explain my results, but rather it suggests that investors view these communities experiencing immigration as safer to

invest in.

My primary contribution is to examine the effects of immigration on local communities and the broader impact of population changes on local communities. Many previous studies examine risks faced by municipalities and changes in their issuance yields including climate change (Goldsmith-Pinkham et al., 2023; Painter, 2020), the opioid crisis (Cornaggia et al., 2022), and newspaper closures (Gao et al., 2020). Gustafson et al. (2023) is the closest paper in spirit as they study the impact of Covid-induced migration on municipalities from 2020 to 2021 as areas most exposed to the transition toward remote work experience higher municipal bond yields as these areas experience net outflows of population. My paper's effect is distinct as it captures the effect of primarily blue-collar immigrants with limited financial assets settling into a community. In contrast to white-collar workers relocating during the transition to work from home work, immigration of low-skill migrants provides real ambiguity in their true effect evidenced by the large policy debate surrounding their presence.

My paper also connects to a diverse literature on the effects of immigration on local labor markets and productivity (Card, 2001; Doran et al., 2022; Peri, 2012; Piyapromdee, 2021; Tabellini, 2020), foreign-direct investments and firm international trade(Burchardi et al., 2019; Cohen et al., 2017; Eghbali et al., 2024), innovation (Bernstein et al., 2022; Burchardi et al., 2020), labor and housing prices (Cortes, 2008; Saiz, 2003), and the long-term impact on local communities (Sequeira et al., 2020). In a related work, Burchardi et al. (2020) show that immigration leads to an increase in the production of innovation and wage growth in counties receiving immigrant flows. However, the expected directional impact on yield spreads of affected counties is unclear. On the one hand, an increase in expected cash flows should reduce issuance yields while on the other hand, higher growth rates of these municipalities would imply issuance yields might increase as the expected return on county projects increases. By using a forward looking, ex-ante measure of investor expectations and a measure that allows for multiple, contemporaneous shifts in the county (e.g. immigration

causes crime to increase but also leads to increases in economic output), I am able to provide novel inference to the *aggregate* effects of immigration on local communities.

2 Institutional Background

2.1 Immigration

While the United States has been historically known as a "country of immigrants" or "melting pot" to reflect the significant role immigrants have played in its development, restrictions on immigration extend back to its origins. The 1790 Naturalization Act required individuals seeking citizenship to meet a minimum year of residence in the country, be of "good moral character", and be a "free white person" which excluded Native Americans, indentured servants, enslaved people, free Africans, Pacific Islanders, and non-White Asians from becoming citizens. In 1798, the Federalist Party seeking to limit the influence of immigrants, passed the Alien and Sedition Acts which allowed the president to deport any non-citizen considered dangerous and allowed the deportation of any non-citizen who came from a country at war with the United States. During the mid-1800s, the United States became more encouraging of immigration to meet a growing demand for labor. For example, the Immigration Act of 1864 allowed labor contracts with foreign workers and created a commissioner of immigration who was appointed by the president to serve under the secretary of state. These more open immigration policies were largely restricted to European immigrants as the Chinese Exclusion Act of 1882 banned Chinese laborers from immigrating for the following 10 years, which was later extended until 1943, and authorized deportation of unauthorized, recent Chinese immigrants. Over the period from 1850 to 1910, the large flow of European immigrants enabled by pro-Immigration policy led to the percent of the U.S. population that is foreign born rising from around 10 percent in 1850 to nearly 15 percent in 1910.

Following this period of time, immigration policy became more restrictive as evidenced by the 1921 Emergency Quota Act which capped annual, total immigration at 350,000 (later reduced to 165,000 in the Immigration Act of 1924) and also created country quotas. During this period, the percent of the U.S population that is foreign born declined to just 4.7 percent in 1970. Immigration policy took another turn following the Immigration and Nationality Act of 1965 which abolished the quota system, created a preference system prioritizing family reunification, skilled immigrants, and refugees which resulted in significantly higher immigration from Asia, Latin America, and Africa. This era of pro-immigration policy in the modern era created pathways to permanent residency to unauthorized immigrant workers and protection from deportation through the Immigration Reform and Control Act of 1986. Additionally, the Immigration Act of 1990, created H-1B visas for highly skilled temporary workers and H-2B for seasonal, non-agricultural workers while seeking to limit illegal immigration through increasing enforcement at the border and fences built along the Southwest border (Pew Research Center, 2015). Figure 1 summarizes these historical immigration patterns since 1850 and shows that the United States had its highest absolute number of immigrants in 2020 at nearly 50 million individuals and is also near the maximum proportion of US immigrants in recent history at nearly 15 percent of total residents.

2.2 Municipal Finance

Similar to companies and individuals, local county governments often borrow to fund capital-intensive projects which helps provide a source of funding and align the longevity of financing to an asset's useful life. The borrowing of county governments through debt securities, called municipal bonds, allows investors to lend money to local governments for the promise of future interest payments and the repayment of principal. These municipal bond repayments are backed either by the full faith, credit and taxing power of the issuing municipality in the case of general obligation bonds or the revenue of the project being financed in the case of revenue bonds. Municipal

debt is typically issued in the form of tax-exempt bonds which is generally exempt from federal income tax and often exempt from state income tax if the bondholder resides within the same state of residence. Due to its tax-advantage, municipal investors demand a lower rate of return than holding an otherwise similar, taxable issuance, and the ultimate interest rate charged by investors is a function of the default risk and illiquidity premium assumed by investors. Despite a five-year cumulative default rate of 0.08 percent for all municipal bonds from 1970 to 2014, and 0.01 percent for general obligation bonds, Schwert (2017) estimates that default risk accounts for 74 to 84 percent of the average municipal bond spread after adjusting for tax-exempt status.

2.3 Link Between Immigration and Local Government

The effect of immigrants on their county of settlement might occur through a few potential channels. Immigration would result in an improvement in a county's operating situation (and a decline in borrowing costs) if the inflow of immigrants leads to increased demand for goods which pushes up price levels and the expected tax receivables to the local government or by the presence of additional labor and entrepreneurs spurring development and positive NPV projects that would have otherwise been foregone. Additionally, immigration would also improve a county's operating margin through the intergovernmental transfers increasing in response to an increasing allocation of intergovernmental transfers from the state government. On the other hand, immigration might lead to a deterioration in a county's operating situation (and an increase in borrowing costs) either directly by consuming more public goods than they contribute or indirectly by taking jobs from native workers which leads to more native workers drawing benefits from social programs provided by the local community or moving away. Notably, the effect of immigrants on local communities is likely a function of both the characteristics of the local community (e.g. demand for labor and skill-mix composition) and the characteristics of the immigrants (e.g. education level and age).

3 Data Sources and Sample

3.1 Bond Issuance Data

I begin with a sample of all municipal bond issuances from Refinitiv's SDC Platinum from 1985 to 2010 which returns 374,971 bond issuances. I am able to link 90 percent of these issuances to the ultimate county issuer resulting in 338,959 matched issuance. As my research design uses flows of immigration over five year periods, I keep only bonds issued at five year endpoints (e.g. 1985 and 1990) which returns 72,744 bond issuances. Lastly, conditioning down to bonds that have non-missing information related to the bond's yield and lagged characteristics returns 53,516 bond issuances.[3] My main measure of borrowing cost for a given bond issuance is the tax-adjusted bond yield less the maturity-matched treasury bond yield where following Garrett et al. (2023) is computed as:

$$Spread_{i,c,t} = \frac{Yield_{i,c,t}}{(1-\tau_{c,t})} - r^{f}_{m,t} \tag{1}$$

where $r^{f}_{m,t}$ is the yield of treasury bill of maturity m issued at time t, $\tau_{c,t}$ is the marginal tax rate on personal income calculated as $\tau_{c,t} = \tau_t^{Federal} + \tau_{c,t}^{State} \times \mathbf{1}[Exemption^{State}]_{c,t}$ where $\tau_t^{Federal}$ is the federal tax rate for top earners after adjusting for the deductability of state income taxes at the federal level and $\tau_{c,t}^{State}$ is the state income tax rate for top earners with both measures provided by NBER Taxsim (Feenberg and Coutts, 1993).

Table 1 Panel A presents summary statistics collapsed at the county-issuer, year level which shows that the average U.S. county experienced an inflow of 2,700 non-European immigrants over the five year windows in our sample and a one-standard increase is 17,600 immigrants.[4] Unsurprisingly,

[3] I keep only the longest maturity bond within a given bond issuance as the information required to compute the yield on shorter-dated bonds within the same issuance is not available until 2003.

[4] I label all non-European immigration terms in the Tables as immigration for the sake of brevity. Effect

the flow of immigrants into U.S. counties is quite concentrated with the median county experiencing an inflow of just 160 immigrants suggesting most counties in the sample are relatively unaffected by the direct effects of immigration settlement.

Table 1 Panel B presents summary statistics on key variables at the bond issuance level. The average bond has a yield spread of 2.43 percent in excess of the maturity-matched, treasury bond yield suggesting that investors demand a sizeable default and illiquidity premium from holding municipal bonds. Cross-sectionally, there is sizeable variation across municipalities despite the low, observed default rates as gap between the 25th and 75th percentile of issuances is about 2 percent. The average bond has a maturity of 15 years and a principal amount of $4.5 million suggesting many municipal projects are sizeable in scope and longevity. About 33 percent of bonds are revenue bonds backed only by the cash flows of the underlying project itself and 88 percent of bonds are tax-exempt.

3.2 County Data

I augment the bond issuance panel with county-level data on population characteristics from the U.S. Census and county-level employment data from the County Business Pattern Files (Eckert et al., 2020).[5] Table 1 Panel C shows that the average (median) county has about 175,000 (66,000) people which shows that the sample of bond-issuing counties contains a diverse mix of small and large counties. Regarding demographics, about 60 percent of residents are between the working ages of 18 to 65 and about 12 percent of residents live below the poverty line. The average county has 71,000 employed individuals with 71 percent of these individuals working in more labor-intensive, blue-collar lines of work.[6]

sizes are shown per an additional 100,000 immigrants for the sake of display in later tables.

[5] I backfill observations from the U.S. Census Bureau as these county level measures are provided every 5 years.

[6] I classify 2-digit NAICS codes into blue or white-collar work based on the nature and education required for the position.

Lastly, I include data on two sources of county financial data. The first comes from the Quarterly Census of Employment and Wages which includes data on the number of establishments, employees, and total pay within a given county. Table 1 Panel D shows that the average county has about 5,000 establishments, 80,000 employees, and an average annual CPI-adjusted pay of about $35,000 in 2010 dollars.

The second source provides government financial data from the Government Finance Database which aggregates data primarily from the US Census Bureau's Census of Governments and Annual Survey of State and Local Government Finances (Pierson et al., 2015).[7] These data provide comprehensive information on the income statements and balance sheets of local county governments. Table 1 Panel E shows that the median county has revenues of about $40 million consisting of total taxes, intergovernmental revenue, and other miscellaneous revenue. Regarding expenses, the average county has offsetting expenses which are dispersed broadly across public goods for local citizens such as infrastructure and roads, police, judicial, and public welfare spending. The median county government has about $10 million in debt outstanding while financial assets represent about $35 million which is spread across a mix of cash, trust cash securities, and other securities. In general, the average municipality has much lower leverage than its corporation counterpart as the average county government has a debt to equity ratio of 0.36 which is less than half of the ratio of total debt to equity in the United States at the end of 2023 of nearly 85 percent.

[7] I use the most recent observation from the County Business Pattern Files as these data are provided comprehensively in years ending in the digit 2 or 7.

4 Empirical Approach

4.1 Yield Spread Changes Following Immigration

To examine the impact of immigration on municipal bond yields, I first estimate the following regression specification:

$$\begin{aligned}\text{Yield Spread}_{i,c,t} = \beta_0 + \beta_1 \Delta Immigration_{c,t,t-5} + \tau' \times \text{Bond Controls}_{i,t} \\ + \rho' \times \text{County Controls}_{c,t} + \delta_t + \gamma_c + \epsilon_{i,c,t}\end{aligned} \tag{2}$$

where $\text{Yield Spread}_{i,c,t}$ is the municipal bond's tax-adjusted issue yield less the yield on a maturity-matched treasury bond.[8] $\Delta Immigration_{c,t,t-5}$ is the inflow of immigrants into county c over the last five years. $\text{Bond Controls}_{i,t}$ includes the total issue amount of the bond, the time to maturity, whether the bond is callable, insured, a negotiated bid, taxable, the rating of the bond, whether the bond has a sinking fund, and whether the bond is used to refinance existing issuances. $\text{County Controls}_{c,t}$ is a vector of lag county controls from five years prior which includes the population, percent of the population between 18 and 65, percent below the poverty line, the average income, median age, the number of employed people, and the proportion of employees working in labor intensive fields. δ_t is a time fixed effect to account for differences between observed time units, and γ_c is a county fixed effect to capture time-invariant differences across issuing counties.

Table 2 examines how changes in immigration affects municipal bond yield spreads. Increases in immigration consistently lead to lower issuing yields for counties across the OLS estimator. In columns (1) to (5), I regress the yield spread directly onto immigration, and I find that a one-standard deviation increase in immigration leads to between a 1.4 to 4.2 basis point decline

[8] I also use $\Delta\text{Yield Spread}_{i,c,t}$ as a measure of yields where $\Delta\text{Yield Spread}_{i,c,t} = \text{Yield Spread}_{i,c,t} - \overline{\text{Yield Spread}}_{c,t-5}$

in an issuing county's yield spread on average. Columns (6) to (8) provide similar evidence when modeling *changes* in the yield spread with an estimated effect between 0.5 and 4 basis points. These results are robust across the inclusion of bond and county controls, and the inclusion of county fixed effects providing initial evidence of a link between immigration and reduced borrowing costs for communities. Notably, this link between immigration and reduced municipal bond yields is not present when using measures of internal migration. The results in Table A.1 provide limited evidence that either changes in population in Panel A or net flows of IRS filing residents are linked to lower municipal bond yields as only 1 of 16 coefficient estimates is negative and statistically significant.

Although, the OLS estimator provides initial evidence that immigration leads to lower yields, it is possible these estimates do not recover the *true* average treatment effect for two reasons. The first, is due to the non-random selection of immigrants into communities as they typically decide where to settle. For example, immigrants might settle into communities where the marginal benefit of labor is increasing from enhancements to the total factor productivity (positive selection) or the marginal cost of living is declining due to an exodus of native residents (negative selection) the coefficient estimate β_1 might suffer from bias in either direction. Additionally, county-country specific factors can also bias these estimates as workers from a specific country might settle into counties which have concentrated exposure to a specific sector (e.g. Indians settling in Silicon Valley in Santa Clara County due to tech exposure). Productivity shocks in this sector will lead to both improvements in the financial situation of these communities and more immigrant inflows leading to a spurious correlation between immigration and a community's financial situation.

4.2 Instrumental Variables and Bartik-Instrument Approach

While immigrants typically choose their settlement location, I follow Burchardi et al. (2020) in exploiting the fact immigrants are more likely to settle into communities where others of the

same ethnic group have previously settled. Applying the framework of Burchardi et al. (2020), I use historical settlement and migration patterns from the U.S. Census from 1880 onward to provide quasi-random, ex-ante variation in the settlement decision of current immigrants. Using the settlement decision of historic migrants to determine the exposure of counties to ongoing immigrant flows helps to guard against the settlement decision of immigrants reflecting private information connected to a county's time varying financial performance (e.g. immigrants end up in only improving/declining counties). Additionally, to guard against country-county private information or counties with concentrated exposure to an origin country and a highly concentrated employment sector inducing a spurious connection between immigrant flows and a county's financial performance in their settlement decision, immigrant inflows from a specific country are predicted to a specific county using information orthogonal to the county-country time pairing.

The framework of Burchardi et al. (2020) proceeds in two steps:

4.3 Predicting Ancestry

First, immigrant inflows from a specific country are predicted to a given county using information orthogonal to the county-country time pairing. Following Burchardi et al. (2019), they predict the number of residents with ancestry from *origin: o*, who reside in *county, c* at *time, t*: $\mathrm{A}_{o,c,t}$. This reduced form model of migrations driven by "push" and "pull" shocks combined with a leave-out strategy allows the identification of variations in $\mathrm{A}_{o,c,t}$ that are plausibly exogenous to local county factors (c) but also to bilateral country $\times$ county factors, *(o,c)* specific. They estimate:

$$A_{o,c,t} = \delta_{o,r(c)} + \delta_{c(o),d} + X'_{o,d}\varsigma + \sum_{\tau=1880}^{t} a_{r(c),\tau} I_{o,-r(c),\tau} \frac{I_{Europe,.,d,\tau}}{I_{Europe,\tau}} + v_{o,c,t}, \tag{3}$$

where $I_{o,-r(c),\tau}$ is the total number of migrants arriving from o at τ who settle in counties *outside* of the region *r(c)* where d is located, a push from o shock. $\frac{I_{Europe,.,d,\tau}}{I_{Europe,\tau}} + v_{o,c,t,}$ is the share of

European migrants who settle in d at τ, a pull to d shock. $\delta_{o,r(c)} + \delta_{c(o),d}$ are a series of origin country $\times$ destination region and continent of origin $\times$ destination county interacted fixed effects, and $X'_{o,d}$ contains a series of time-invariant controls for o,d characteristics. This is estimated separately for each time period t = *1980,1985,1990,1995,2000,2005,2010* using all non-European countries in the sample. From this estimation, they derive predicted ancestry

$$A^{\hat{o},c,t} = \sum_{t=\tau}^{1880} \hat{a}_{r(c),\tau}(I_{o,-r(c),\tau} \frac{I_{Europe,d,\tau}}{I_{Europe,.,\tau}}) \tag{4}$$

For example, rather than directly using the number of Indian immigrants settling in Fresno county in 1900, the approach of Burchardi et al. (2019) predicts that a large number of Indian immigrants settled in Fresno County in 1900 if many Indian immigrants were arriving in the United States (push) and many immigrants were settling in Fresno County at this time (pull). These early settlement patterns based on historical settlement decisions partly explain the large subsequent population of immigrants within a given community.

Figure 2 provides evidence to support the relevance of using historical migration patterns to explain subsequent immigration waves. Panel A of Figure 2 provides empirical validation of the relevance in using historical migration patterns to explain subsequent variation in the settlement decision of immigrants. Due to sticky immigration patterns, the composition of immigrant flows into a given county are quite persistent. The composition of inflows of immigrants by country into a given county in 1880 have a 30 percent correlation with the composition of immigrants in 2010, and this correlation at the country-county level increases to more than 50 percent following 1920. Panel B of Figure 2 shows that historically much of the Mexican immigration has been concentrated along the United States' southern border and western region. Although, Mexican immigration has been dispersed more broadly across the United States after 1980, the identifying variation relies upon areas with a a larger magnitude of *historic* settlement when more Mexican immigrants were

entering the United States such as 1920 as shown in Figure 3 Panel A when Mexican immigration made up 40 percent of US immigration.

4.4 Predicting Immigration

Second, Burchardi et al. (2020) apply the Card (2001) shift-share method using predicted ancestry as the weights in the Bartik-instrument design. Crucially, this design results in exogenous weights used in the Bartik-instrument design which is sufficient for identification as shown in Goldsmith-Pinkham et al. (2020).[9] Having predicted pre-existing ancestry, Burchardi et al. (2019) apply the canonical shift-share approach by interacting *predicted* pre-existing ancestry in a given county with contemporaneous (US-wide) immigration from that origin,

$$I_{o,c,t} = \delta_{o,r(c)} + \delta_{c(o),d} + \delta_t + X_{o,d}^{'}\theta + b_t \times [A^{o,\hat{c},t-1} \times \tilde{I}_{o,-r(c),t}] + u_{o,c,t} \tag{5}$$

where again the δ's are time, country $\times$ region, and continent $\times$ county fixed effects, $X_{o,d}^{'}$ observable controls, $A_{o,d}^{\hat{t}-1}$ predicted ancestry from Equation (1) and $I_{o,\tilde{-r(c)},t} = I_{o,-r(c),t} \frac{I_{Europe,r(c),t}}{I_{Europe,-r(c),t}}$ the scaled push factor from o.

Adding up across foreign origins, they derive the main instrument for the total number of migrants settling in county d in period t, Immigration$_{c,t}$ as shown in Equation 1,

$$\hat{I}_{.,c,t} = \sum_o \hat{b_t} \times [A_{o,\hat{c},t-1} \times I_{o,\tilde{-r(c)},t}] \tag{6}$$

This identification approach is aided by variation in the push factor of immigrants entering the

[9] Borusyak and Hull (2023) show the importance of controlling for spatial spillovers to ensure the Stable Unit Treatment Value Assumption (SUTVA) assumption is likely to hold which implies the potential outcomes for any unit are unaffected by the treatment status of other units. I incorporate a measure of immigration spillovers in subsequent drafts to address this concern.

United States from various countries of origin. Figure 3 Panel A shows that Mexican immigration experiences widespread variation in relative magnitude over time as Mexican immigration made up less than 10 percent of immigration prior to 1900, peaked at 40 percent of all immigrants in 1920 and hovered between 20 to 40 percent of all immigrants after 1970. Additionally, an implicit source of variation in the design is that U.S. counties have varying exposures to immigrant inflows over time which results in significant variation within the *same* county *over* time as the research design uses variation in the *flow* of immigration over time for identification. Figure 3 Panel B provides empirical support for this source of variation by showing that some areas in the United States were less affected by some immigration waves (e.g. Colorado and Nevada prior to 1990) while exposure to immigration increases over time. Crucially, the design relies on identifying exogenous variation in the levels of these endogenous settlement patterns that vary within county over time based on the historical immigrant settlement patterns by nationality and the flow of immigrants from varying sender countries over time.[10]

4.5 Identification Assumption

A sufficient condition for the validity of this instrument is that predicted ancestry $\hat{A_{o,c,t-1}}$ is exogenous in Equation (1) which in combination with our baseline regional and continental leave-outs implies the condition can be written as:

$$I_{o,-r(c),\tau}\frac{I_{Europe,d,\tau}}{I_{Europe,.,\tau}} \perp \epsilon_{c,t} \forall o, \tau \leq t. \tag{7}$$

This requires that any confounding factors that drive temporary increases in a given county's financial situation post-1975 ($\epsilon_{c,t}$) do not systematically correlate with pre-1975 immigration from

[10]Figure A.1 shows a similar figure in summarizing the magnitude of immigration waves by region of origin over time.

a given origin to other regions with the United States ($I_{o,-r(c)}$) interacted with the simultaneous settlement of European migrants in that US destination ($\frac{I_{Europe,d,\tau}}{I_{Europe,\tau}}$). Satisfying this condition implies the ancestry variable used to predict immigration in Equation (4) is exogenous.

Combining the previous two steps, to correct for the non-random flows of immigration into county c, I instrument for immigration into a given county using an instrumental variables framework with the following first-stage equation:

$$\begin{aligned}\Delta Immigration_{c,t,t-5} = \beta_0 + \beta_1 \hat{Immigration}_{c,t,t-5} + \tau' \times \text{Bond Controls}_{i,t} \\ + \rho' \times \text{County Controls}_{c,t} + \delta_t + \gamma_c + \epsilon_{i,c,t}\end{aligned} \tag{8}$$

While the second-stage regression below identifies the effect of immigration on municipal bond yields.

$$\begin{aligned}\text{Yield Spread}_{i,c,t} = \beta_0 + \beta_1 \Delta \widehat{Immigration}_{c,t,t-5} + \tau' \times \text{Bond Controls}_{i,t} \\ + \rho' \times \text{County Controls}_{c,t} + \delta_t + \gamma_c + \epsilon_{i,c,t}\end{aligned} \tag{9}$$

5 Main Results

The results in Table 3 examine the effects of immigration on municipal bond yields using the instrumental variables approach. Increasing immigration leads to a decline in a municipality's yield spread with a one-standard deviation in immigration (17,160 people or a 9.6 percent increase in population for the average county) leading to a 1 basis point decline estimated with no additional controls and only additive state and year fixed effects. The estimated effect is fairly stable as bond and county controls are included, although the estimated effect on yields increases in magnitude to about 5 basis points as I include county-fixed effects to view the within-unit estimator. In general,

the estimated effect of immigration increases in magnitude rather than attenuates as additional bond county controls and tighter fixed effects are added while the results are fairly robust to modeling Δ yield to make the specification akin to a first difference.

The relevance of the identification approach following Burchardi et al. (2019) in using predicted ancestry linked with the flow of country specific immigrants results in F-statistics above 200 in all of the specifications. The strong relevance of the identification approach provides tight confidence bands to the true impact of immigration which is about 2 percent of the average yield spread. In terms of economic magnitude, the average issuer experiencing a one-standard deviation increase in flow of immigrants would save over $150,000 in interest expense payments over the lifetime of the average bond it issues. With the average county issuer, issuing 6.65 bond issuances per year, the estimated annual savings are over $1 million in interest payments over the lifetime of these issuances.[11]

What areas of the United States benefit the most from immigration? If immigration has heterogeneous effects across counties based on their ex-ante characteristics, it might provide empirical support for varying public debate about the topic. For example, immigration might have a stronger impact on a county's financial situation if labor shortages are more prevalent or the labor skill of immigrants better overlaps with needs in the local area. Table 4 examines the heterogeneous impact of immigration on a county's yield spread interacting different county characteristics with the exogenous flow of immigrants.[12] Columns (1) and (2) examine the effect on counties by the median distance to the Mexican or Cuban border with state and county, fixed effects respectively. I find evidence that counties further away from the border benefit more from immigration with a one standard deviation increase in immigration leading to an estimated decline in a county's yield spread of about 5 to 10 basis points. It might be the case that counties further away from

[11] This saving in interest payments is computed as 5 basis points $\times$ $21.22 million (mean issue amount for county issuers) $\times$ 14.74 years = $156,391.

[12] The instrumental variables model, now includes two endogenous terms to instrument for (i.e. immigrant flow and immigrant flow $\times$ county characteristic) which results in some reduction to the F-statistic.

the border are less exposed to illegal immigrant flows or rely on more specialized, immigrant labor inflows providing the additional benefit.[13]

Columns (3) and (4) of Table 4 show that counties below the median average income actually have stronger effects of immigrants on improving a municipality's financial situation. These results suggest that augmenting skilled labor or areas with higher capital assets are the not the sole benefits of immigrants. Consistent with the idea of immigrants filling gaps in the labor market, columns (5) and (6) show that the effects of immigration are strongest in communities with a smaller proportion of individuals between the working ages of 18 and 65. Lastly, regarding the complementary nature of of immigrants to their destination county, I find in columns (7) and (8) stronger effects of immigrants entering counties with a higher proportion of employees working in labor-intensive, blue-collar and service oriented sectors.

5.1 Robustness & Additional Tests

In Table A.2 I show that the effect of immigration in reducing a county's municipal yield spread is robust across various sampling and instrument choices. In rows 2A and 2B, I show that the effect size is similar in economic magnitude when including the logarithm of yield spread as the dependent variable or weighting by the county's initial population in 1970. Row 2C helps reinforce the idea that immigration rather than internal U.S. migration are the mechanism of the results as the relationship remains largely unchanged when I control for the net flow of IRS filers in the previous year. Additionally, row 2D back fills immigration data from the most recent 5-year estimate and shows the relationship between immigrant flows and a reduction in yield spreads continues to remain. Lastly, in rows 3A and 3B I provide evidence that although counties with larger immigration

[13]While, I am unable to disentangle between illegal and legal immigration effects, Pew Research Center (2019) estimates the gap of undocumented immigrants to be between 5 to 15 percent of Census respondents from countries with more undocumented individuals. Stephen and Lo Wang (2024) found in a simulated headcount across administrative records that about 20 percent of non-citizens had addresses that couldn't be matched in the 2020 Census versus 5.4 percent for citizens.

flows are the strongest driver of the relationship, the relationship between immigration and reduced bond yields holds when excluding the counties in the top percentile of absolute immigration flows or scaling immigration by the county's initial population in 1970.

Do counties change their debt issuance patterns following increased immigration? The results in Table A.3 shows that the explicit use of proceeds raised in bond issuances remains largely unchanged. I find evidence that county's increase their debt issuances tied to more general uses while all other use cases (e.g. transportation, utilities, education, or healthcare) remain largely unchanged. Table A.4 examines changes in bond issuance characteristics and finds the characteristics of issuances are largely responsive to increased immigration. The results in column (1) find no evidence that counties increase the size of a given debt issuance in response to increase immigration, but instead column (2) supports the idea the counties take on increasing debt loads by *increasing* the number of issuances themselves. Overall, column (3) provides limited evidence of changes in ratings while column (4) finds evidence that increasing immigration reduces the probability of a county issuing debt rated below-AA which helps explain the decline in yield spreads these counties experience. In regards to the bond features themselves, counties do not appear to issue longer maturity debt, but are less likely to issue callable debt and more likely to issue insured debt.[14]

5.2 Mechanism

Thus far, I have shown that counties exposed to increasing immigration experience lower municipal yield spreads with heterogeneity across counties with more likely labor shortages experiencing stronger effects. In this section, I provide evidence of the causes of the decline in the municipal yield spread for county governments by examining the local labor market, wages, and the financial situation of the local county government. Building on the notion that municipal bond yields reflect

[14]In my empirical design, I control for contemporaneous bond ratings when modeling yield spreads which provides a lower-bound to the true effect of immigration on municipal yield spreads.

the markets' expectations of future financial risks to local economies, immigration might improve the credit risk of a given county by either increasing the size of the taxable base as the population increases or by higher skilled immigrants displacing lower skilled, domestic residents while the population flows offset. It is also not clear whether counties experience an increase in cash flows on an absolute or relative basis as significant investments in infrastructure might be made to accommodate an influx of immigrants and spur additional business development. Additionally, it's possible that county investments in infrastructure lead to declines in short-term profitability as counties develop a significant infrastructure base to support business development growth.

The results in Table 5 provide evidence that immigration results in significant growth in the local labor market. Consistent with immigrants being more likely to serve as entrepreneurs and innovators (Bernstein et al., 2022), a one standard deviation increase in immigrants leads to a 2.90 percent increase in the number of establishments as shown in Panel A of Table 5.[15] Overall, I find a larger effect of immigration on employment and total wages in the community with an estimated effect size increase of 4.87 percent and 5.10 percent, respectively. In terms of economic magnitude, the effects of immigration are quite large with an estimated creation of about 150 additional establishments, 4,000 additional employees, and additional wages of $175 million for the average county. The results in column (4) estimates wage growth increases by a statistically insignificant amount of 1.3 percent. The strength of my empirical design allows me to rule out wage increases of 1.75 percent with 95 percent confidence given the strong relevance of my instrument. In comparison to the OLS estimator results in Panel B of Table 5 the effect sizes are about 90 percent of the magnitude of the IV for the number of establishments, total employment, and total wages. I find a statistically significant of immigrant on average wages in OLS suggesting higher wage growth might have partially attracted an influx of immigrants although the estimated effect is about half of the IV estimator.

How do these gains in the local labor market ultimately flow back to the local county government?

[15] $2.90\% = 0.169 \times 100\% \times 17{,}900/100{,}000$ immigrants.

Table 6 examines the effect on the revenues of the local county government and Panel A of Table 6 finds that increasing immigration flows lead to about a 3.6 percent increase in total revenues using the instrumental variables estimator. The composition of county government revenue base is made up of about 40 percent taxes from property and sales taxes, 40 percent intergovernmental transfers which are allocated from other governmental levels back to the local county based on population or need-based formulas, and the rest is composed of various license and other fees to local residents. The results in columns (2) to (4) show that immigrants lead to an increase in total inflows from taxes while this increase is predominantly driven by increases in property taxes rather than additional inflows from sales and recreation taxes. The results in column (5) shows that intergovernmental transfers have a similar sensitivity to additional immigrant inflows as taxes. The results in columns (6) and (8) show that federal and local intergovernmental transfers have the strongest sensitivity to additional immigrant inflows; although the increase in state intergovernmental transfers are most consequential as they comprise the majority of intergovernmental transfers provided to the local county government. For reference, the OLS estimates in Table 6 are similar in magnitude and direction although intergovernmental revenues experience a slightly larger effect size in the OLS estimator.

Table 7 examines how immigration affects the expense patterns of county governments which are spent on various public goods such as capital and roads, judicial courts, and police. One key benefit of immigration inflows to a local community is that it might allow the county to spend on long-lasting, infrastructure projects which might increase the productivity and capacity of the local business environment that benefit both incoming immigrants and native residents. The results in column (1) document that a one-standard deviation increase in immigration leads to a 4.25 percent increase in expenses. The results in column (2) show that capital expenses have a much higher sensitivity to immigration inflows than general expenses which are allocated on more temporary needs providing evidence consistent with the positive spillovers of immigration to local residents.

Consistent with potential adverse effects of immigration, I find evidence of increasing court activity as column (3) shows an increase in judicial expenses. The results in column (4) show that adverse effects on county health spending are less consequential while column (5) shows a positive effect on road expenses by county governments in response to immigration inflows. Lastly, columns (6) to (8) show that while local communities spend more on policing while increased spending on welfare and parks are statistically insignificant. For context, the OLS estimates in Table 7 are similar in magnitude and direction although non-instrumented immigration inflows have a lower sensitivity to capital spending and more spending allocated towards health and welfare.

Table 8 examines the net effect of immigration on a county's net income margin and balance sheet. The results in Panel A column (1) show that relative rather than absolute changes in net income are driving the increase in county financial health as the change in net income margin is near zero. The results in columns (2) and (3) show that counties take on additional debt (primarily long-term debt) to fund the additional immigrants. A one-standard deviation increase in the number of immigrants leads to a 7.9 percent increase in the outstanding debt a county carries, and it appears that counties use debt to offset short-term expenses (e.g. judicial and policing) and also fund long-term infrastructure projects targeted at accommodating additional residents and additional business development. The results in columns (4) to (7) provide some evidence that counties also experience an increase in financial assets with the growth driven primarily by other trust assets. Lastly, while the growth in debt outpaces financial assets held by local counties, column (8) documents this 2.3 percent increase in leverage relative to the mean is statistically insignificant. The OLS estimates in Table 8 are similar in magnitude and direction as shown in Panel B.

6 Discussion

The fact that county debt increases in response to increasing immigration suggests a decline in the supply of debt issued cannot explain the decline of municipal bond yield spreads for counties experiencing additional immigration. Rather, it appears that counties benefit from the inflow of immigrants and issue additional debt at a lower spread to fund infrastructure and long-term projects that investors consider to be of lower risk. In terms of interpretation, the effects of immigration on municipal cash flows are increasing in *levels* rather than *per-capita* suggesting that a sort of scaling up of existing county operations and the presence of new business growth lead to the improved financial situation of the local county government.

7 Conclusion

Counties in the United States face significant risks linked to their existing population base, physical climate, and evolving demographic and population. The United States has experienced a surge in immigration near its highest recorded proportion in U.S. history, and despite this topic receiving much policy debate, the evidence for and against immigration have largely been anecdotal or composed of studies examining individual outcomes which makes determining the aggregate effects unclear.

In this paper, I provide causal evidence of the impact of immigration on local communities using the municipal bond market and investors' expectations about future cash flows and risk of these communities. I exploit the historical migration and settlement patterns of immigrants dating back to 1880 to provide quasi-random, ex-ante variation in the settlement decision of current immigrants which guards against the endogenous sorting decision of current immigrants. I find that increased immigration leads to a decline in municipal bond yield spreads with a one standard deviation

increase in immigration leading to a 2 percent relative to the sample yield spread. Consistent with immigration helping to offset labor shortages, I find stronger effects of immigration for counties further away from the border with a lower proportion of working age population. Immigrant inflows lead to robust changes in the local labor market with significant growth in the number of establishments and employment although average wages remain largely unchanged.

Consistent with immigrants scaling up a county's eligible taxable base, I document similar increases in revenue and expenses that leave a city's net income margin unchanged but additional cash flows in absolute. These additional cash flows are allocated with the highest sensitivity to capital and long-term infrastructure projects like roads which increases the productive capacity for local communities and provides positive spillovers to domestic residents. I provide evidence that counties take on additional debt to fund the influx of immigrants and offset higher expenses while leverage increases are only around one percent. Understanding other risks that municipalities face, and the broader effects of immigration on the local economy represent interesting future areas of work.

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Figure 1: Immigration to the United States Over Time

This figure shows the stock of US immigrants over time as a percent of the total population and in absolute magnitude. Immigrants are defined as individuals born outside of the United States. Immigration data are based on respondents from the US Census Bureau decennial and American Community Survey.

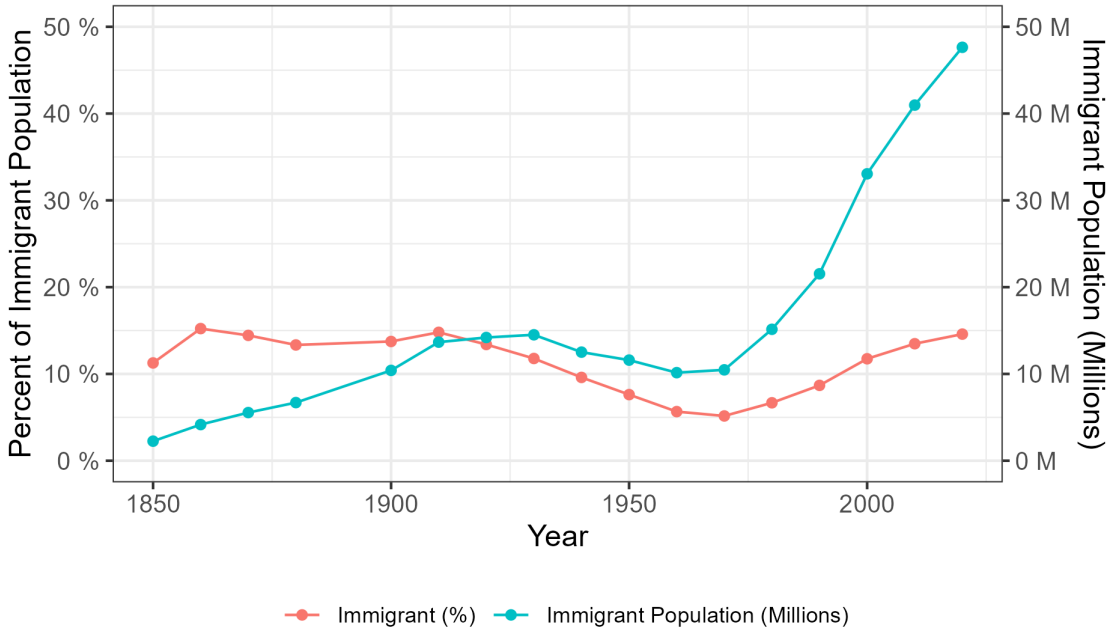
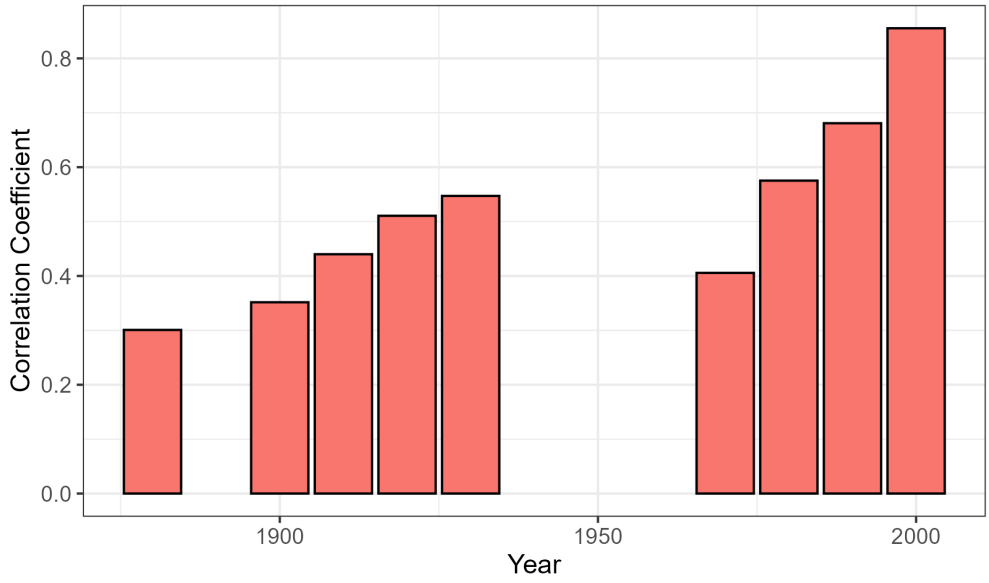


Figure 2: Persistence of Immigration Patterns Over Time

This figure shows the the persistence of immigration patterns at the country-county level. Panel A displays the correlation between the proportion of immigrants from a given country into a given county in 2010 onto the year denoted in the plot where the bar represents the correlation coefficient between the two (e.g. 1880 versus 2010). Panel B shows the percent of Mexican immigrants settling into U.S. counties over time. Immigration data are based on respondents from the US Census Bureau decennial and American Community Survey.

Persistence of Immigration to the United States



Proportion of Mexican Immigration by County

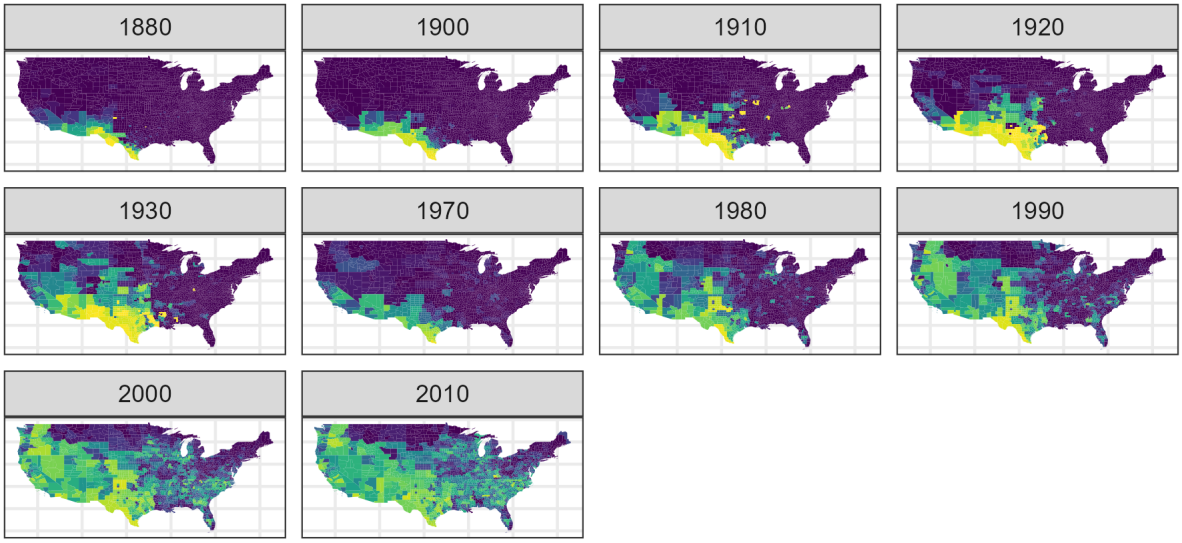
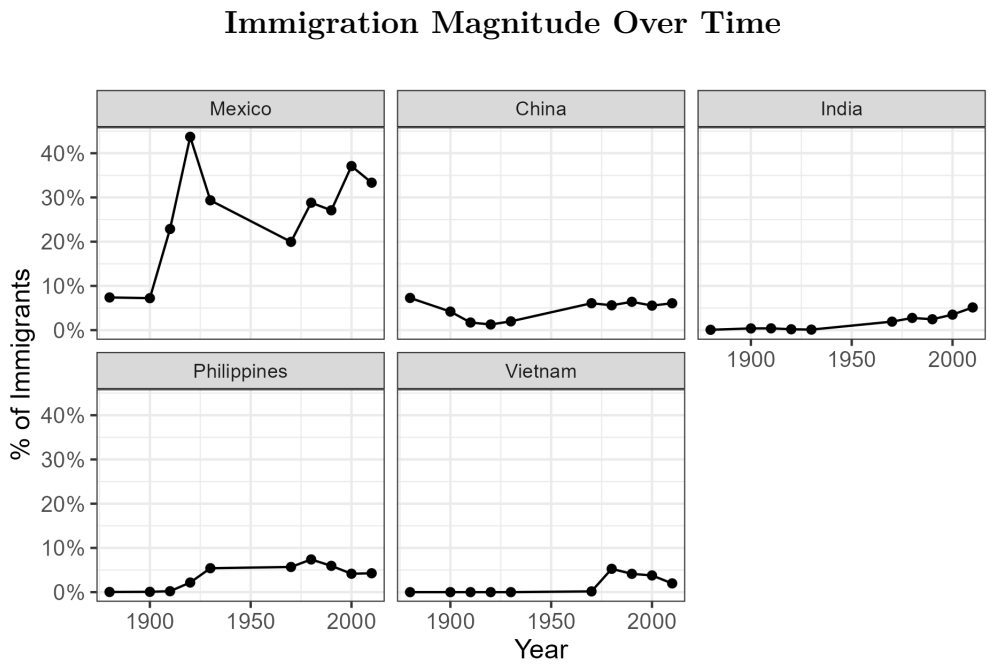


Figure 3: Immigration Patterns to the United States Over Time & Persistence
This figure shows the non-European, immigration into U.S. counties over time and the location and magnitude of US immigration since 1980. Panel A plots the proportion of immigrants by country of origin at a given time point across the six largest sender countries over the sample. Panel B shows the magnitude of immigration of non-European immigrants per 100,000 residents over five year intervals from 1980 to 2010. Immigration data are based on respondents from the US Census Bureau decennial and American Community Survey.



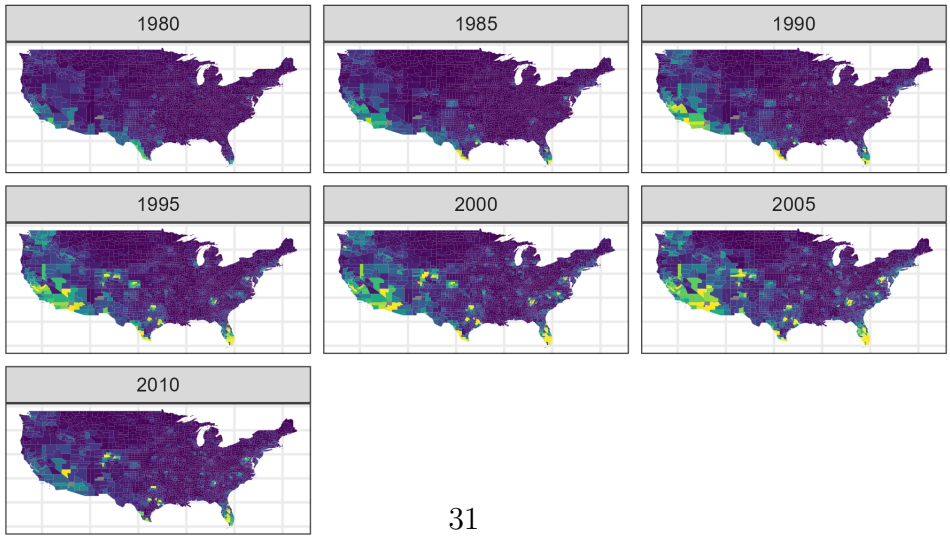


Table 1: Summary Statistics

This table presents the summary statistics for the sample of bond issuances and the underlying county issuer. Panel A summarizes immigration inflows and the instrument collapsed at the county-issuer level. Panel B describes the characteristics at the bond issuance level including its yield, features, and rating. Panel C describes the characteristics of county issuer including its demographics, average income, and labor-force composition. Panel D contains information on employment including establishments, number of employees, average annual pay, and total wages. Panel E contains information on the income state and balance sheet of county governments. Immigration denotes non-European immigration.

	Panel A: Immigration Characteristics							
	N	Mean	SD	p1	p25	Median	p75	p99
Non-European Immigration (000's)	10489	2.70	17.16	0.00	0.05	0.16	0.72	43.26
Non-European Immigration Instrument	10489	0.27	7.16	-4.68	-0.24	-0.04	0.01	9.17
	Panel B: Bond Characteristics							
Yield Spread (%)	42637	2.33	1.41	-0.18	1.36	2.14	3.08	6.92
Δ Yield Spread (%)	42637	-0.56	2.02	-4.94	-1.59	-0.53	0.72	4.35
Years to Maturity	42637	14.74	9.27	0.75	7.75	15.01	20.10	35.00
Total Issue Amount ($ Million)	42637	21.22	55.58	0.20	2.21	5.90	16.00	300.00
Callable Issue	42637	0.69	0.46	0.00	0.00	1.00	1.00	1.00
Insured	42637	0.27	0.44	0.00	0.00	0.00	1.00	1.00
Negotiated Bid	42637	0.57	0.49	0.00	0.00	1.00	1.00	1.00
Revenue Bond	42637	0.33	0.47	0.00	0.00	0.00	1.00	1.00
Tax-Exempt	42637	0.88	0.32	0.00	1.00	1.00	1.00	1.00
Ratings Combined	42636	3.67	3.15	0.00	0.00	5.00	7.00	7.00
Sinking Fund	42637	0.28	0.45	0.00	0.00	0.00	1.00	1.00
Refinancing Flag	42637	0.27	0.44	0.00	0.00	0.00	1.00	1.00
	Panel C: County Census Characteristics							
Total Population (000,000's)	6302	1.79	4.32	0.06	0.32	0.66	1.60	15.45
Population Change (000's)	6302	10.05	32.26	-11.74	0.13	1.97	8.70	128.76
IRS Net Flow (000's)	6065	0.17	4.68	-8.73	-0.17	0.04	0.45	9.59
% Working Population	6302	0.61	0.04	0.54	0.58	0.61	0.63	0.72
% Below Poverty	6302	0.12	0.05	0.03	0.08	0.11	0.14	0.27
Median Age	6302	35.84	4.23	27.00	33.00	36.00	38.00	47.00
% Labor-Intensive	6302	0.71	0.08	0.51	0.66	0.72	0.77	0.86

(Continued on next page)

Table 1 (*continued*)

	Panel D: County Census Wages							
	N	Mean	SD	p1	p25	Median	p75	p99
Establishment Count (000's)	6302	4.80	12.68	0.20	0.76	1.61	4.15	47.13
Number of Employees (000's)	6302	81.14	205.81	1.93	10.58	24.59	66.92	789.85
Total Annual Wages ($ Billions)	6302	3.47	10.24	0.05	0.33	0.83	2.47	39.48
Average Annual Pay (000's)	6302	34.74	6.96	24.99	30.07	33.46	37.93	58.39
	Panel E: County Financial Characteristics ($ Billions)							
Revenue Composition								
Total Revenue	6302	0.17	0.63	0.00	0.02	0.04	0.12	2.32
Total Taxes	6302	0.06	0.18	0.00	0.01	0.01	0.04	0.85
Property Taxes	6302	0.04	0.13	0.00	0.00	0.01	0.03	0.57
Total Sales & Recreation Tax	6302	0.01	0.05	0.00	0.00	0.00	0.01	0.20
Total Intergovernmental	6302	0.06	0.29	0.00	0.00	0.01	0.04	0.83
Federal Intergovernmental	6302	0.00	0.02	0.00	0.00	0.00	0.00	0.07
State Intergovernmental	6302	0.05	0.27	0.00	0.00	0.01	0.03	0.75
Local Intergovernmental	6302	0.00	0.01	0.00	0.00	0.00	0.00	0.06
Expense Composition								
Total	6302	0.17	0.59	0.00	0.02	0.04	0.12	2.21
Total Capital Outlays	6302	0.02	0.05	0.00	0.00	0.00	0.01	0.23
Judicial	6302	0.01	0.04	0.00	0.00	0.00	0.01	0.11
Health	6302	0.01	0.06	0.00	0.00	0.00	0.01	0.20
Total Highway Expenses	6302	0.01	0.02	0.00	0.00	0.00	0.01	0.09
Police	6302	0.01	0.04	0.00	0.00	0.00	0.01	0.13
Public Welfare	6302	0.02	0.14	0.00	0.00	0.00	0.01	0.39
Parks & Recreation	6302	0.00	0.01	0.00	0.00	0.00	0.00	0.06
Profitability								
% Net Income	6302	-0.01	0.14	-0.50	-0.08	-0.00	0.07	0.34
Balance Sheet								
Total Debt	6302	0.14	0.47	0.00	0.00	0.01	0.08	2.29
Total Long-Term Debt	6302	0.14	0.46	0.00	0.00	0.01	0.08	2.24
Financial Assets	6302	0.35	1.40	0.00	0.02	0.06	0.21	4.83
Total Cash Securities	6302	0.18	0.90	0.00	0.01	0.02	0.09	2.64
Non-Insured Trust Cash Securities	6302	0.12	0.37	0.00	0.01	0.02	0.08	1.74
Other Non-Insured Trust Cash Securities	6302	0.05	0.17	0.00	0.00	0.01	0.04	0.72
Leverage	6252	0.36	0.41	0.00	0.08	0.27	0.48	2.43

Table 2: OLS: Effect of Immigration on Municipal Bond Yield Spreads

This table presents OLS estimates of the effect of non-European Immigration on a municipality's yield spread. The dependent variable *Yield Spread* is a municipality's issuing yield adjusted based on its tax-exemption less the maturity matched treasury rate used in columns (1) to (5) and Δ *Yield Spread* is the prior measure less the measure's first difference from 5 years prior. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Yield Spread					Δ Yield Spread		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	-0.082***	-0.041***	-0.090***	-0.103***	-0.240***	-0.026**	-0.039	-0.218**
	[0.014]	[0.014]	[0.032]	[0.022]	[0.045]	[0.011]	[0.068]	[0.092]
Observations	42637	42636	42637	42636	42396	42637	42636	42396
Adjusted R^2	0.26	0.58	0.27	0.58	0.59	0.50	0.64	0.67
State F.E.	Yes	Yes	Yes	Yes	No	Yes	Yes	No
State $\times$ Year F.E.	No	No	No	No	No	No	No	No
County F.E.	No	No	No	No	Yes	No	No	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	Yes	No	Yes	Yes	No	Yes	Yes
County Controls	No	No	Yes	Yes	Yes	No	Yes	Yes

Table 3: IV: Effect of Non-European Immigration on Municipal Bond Yields

This table presents IV coefficient estimates of the relationship between non-European immigration and municipal bond yields. The table displays the IV second-stage results from regressing municipal yield spreads onto *Non-European Immigration*. The dependent variable *Yield Spread* is a municipality's issuing yield adjusted based on its tax-exemption less the maturity matched treasury rate used in columns (1) to (5) and Δ *Yield Spread* is the prior measure less the measure's first difference from 5 years prior. *Non-European Immigration* is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Yield Spread					Δ Yield Spread		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	-0.090***	-0.054***	-0.140**	-0.140***	-0.288**	-0.057**	-0.123***	-0.488***
	[0.010]	[0.011]	[0.053]	[0.031]	[0.116]	[0.024]	[0.031]	[0.149]
F-Statistic	2820.04	2981.95	205.19	204.97	434.11	2820.04	204.97	434.11
Observations	42636	42636	42636	42636	42396	42636	42636	42396
State F.E.	Yes	Yes	Yes	Yes	No	Yes	Yes	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	No	No	No	No	Yes	No	No	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	Yes	No	Yes	Yes	No	Yes	Yes
County Controls	No	No	Yes	Yes	Yes	No	Yes	Yes

Table 4:

IV: Heterogeneous Effect of Non-European Immigration on Municipal Bond Yields

This table presents estimates of the relationship between non-European immigration and municipal bond yields across different county characteristics. The table displays the IV second-stage results from regressing municipal yield spreads onto *Non-European Immigration*. The dependent variable *Yield Spread* is a municipality's issuing yield adjusted based on its tax-exemption less the maturity matched treasury rate used in columns (1) to (5) and Δ *Yield Spread* is the prior measure less the measure's first difference from 5 years prior. *Non-European Immigration* is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. Interaction variables include the indicator variable *Distance to Border* which takes the value 1 for issuing counties above the median distance to either Mexico or Cuba, *Average Income* which takes the value 1 for issuing counties above the median average income, *% Working Age Population* which takes the value 1 for issuing counties above the median proportion of population between 18 and 65, and *% Labor Intensive Employees* which takes the value 1 for issuing counties above the median proportion of workers in 2-digit NAICS codes that correspond to professions with more blue-collar oriented work rather than white-collar. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Yield Spread							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	-0.166***	-0.224***	-0.202***	-0.348***	-0.400***	-0.533***	-0.144***	-0.279**
	[0.046]	[0.068]	[0.034]	[0.124]	[0.132]	[0.197]	[0.040]	[0.123]
I(Distance to Border)	-0.317***	-0.664***						
	[0.084]	[0.070]						
I(Average Income)			0.075*	0.081**				
			[0.038]	[0.032]				
I(% Working Age Population)					0.253**	0.260		
					[0.109]	[0.246]		
I(% Labor-Intensive Employees)							-0.123*	-0.176***
							[0.071]	[0.043]
F-Statistic	74.38	336.92	115.92	180.28	32.12	34.21	18.99	6.89
Observations	42637	42397	42637	42397	42637	42397	42637	42397
State F.E.	Yes	No	Yes	No	Yes	No	Yes	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	No	Yes	No	Yes	No	Yes	No	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	No	No	No	No	No	No	No
County Controls	No	No	No	No	No	No	No	No
Y-mean	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33

Table 5: IV: Effect of Non-European Immigration on Labor Market

This table presents estimates of the relationship between non-European immigration and the local labor market. The table displays the IV second-stage results from regressing labor market outcomes onto *Non-European Immigration*. The dependent variables of interest include *Log(Establishments)*: the logarithm of the number of establishment, *Log(Employment)*: the logarithm of the number of employees, *Log(Total Wages)*: the logarithm of total wages paid, and *Log($\overline{Wages}$)* is the average wages paid per employee. *Non-European Immigration* is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. Labor market data come from the Quarterly Census of Employment and Wages. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Panel A: IV: Effect of Immigration on Wages			
	Log(Establishments)	Log(Employment)	Log(Total Wages)	Log($\overline{Wages}$)
	(1)	(2)	(3)	(4)
Non-European Immigration	0.169**	0.272***	0.285***	0.013
	[0.064]	[0.083]	[0.082]	[0.009]
F-Statistic	257.07	257.07	257.07	257.07
Observations	6313	6313	6313	6313
Adjusted R^2	0.23	0.11	0.14	0.08
State F.E.	No	No	No	No
State × Year F.E.	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes
	Panel B: OLS: Effect of Immigration on Wages			
	Log(Establishments)	Log(Employment)	Log(Total Wages)	Log($\overline{Wages}$)
	(1)	(2)	(3)	(4)
Non-European Immigration	0.133***	0.213***	0.271***	0.058***
	[0.043]	[0.033]	[0.039]	[0.019]
Observations	6313	6313	6313	6313
$AdjustedR^2$	0.99	0.99	0.99	0.96
State F.E.	No	No	No	No
State × Year F.E.	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes

Table 6: IV: Effect of Non-European Immigration on County Revenues

This table presents estimates of the relationship between non-European immigration and the local county's financial revenues. The table displays the IV second-stage results from regressing county financial revenues onto *Non-European Immigration* which is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. Data on local government finances comes from the Government Finance Database. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Panel A: IV: Effect of Immigration on Revenues							
	Log(Total)	Log(Taxes)			Log(Intergovernmental Transfers)			
	Total	Total	Property	Sales & Rec	Total	Fed	State	Local
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	0.200***	0.230*	0.264*	0.085	0.261***	0.613***	0.150*	0.496**
	[0.068]	[0.133]	[0.153]	[0.145]	[0.070]	[0.176]	[0.078]	[0.232]
F-Statistic	257.88	258.07	258.14	312.00	258.06	280.66	258.06	277.70
Observations	6302	6280	6272	4136	6265	4592	6263	4314
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B: OLS: Effect of Immigration on Revenues							
	Log(Total)	Log(Taxes)			Log(Intergovernmental Transfers)			
	Total	Total	Property	Sales & Rec	Total	Fed	State	Local
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	0.295***	0.311**	0.310**	0.128	0.398***	0.450***	0.344**	0.480**
	[0.080]	[0.123]	[0.118]	[0.190]	[0.127]	[0.100]	[0.134]	[0.191]
Observations	6302	6280	6272	4136	6265	4592	6263	4314
$AdjustedR^2$	0.97	0.97	0.97	0.86	0.95	0.72	0.94	0.67
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: IV: Effect of Non-European Immigration on County Revenues

This table presents estimates of the relationship between non-European immigration and the local county's financial expenses. The table displays the IV second-stage results from regressing county financial expenses onto *Non-European Immigration* which is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. Data on local government finances comes from the Government Finance Database. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Panel A: IV: Effect of Immigration on Expenses							
	Log(Total)	Log(Infrastructure and Public Goods Expenses)						
	Total	Capital	Judicial	Health	Roads	Police	Welfare	Parks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	0.248**	0.593*	0.313***	0.118	0.294**	0.218**	0.283	0.115
	[0.095]	[0.300]	[0.115]	[0.120]	[0.138]	[0.097]	[0.172]	[0.192]
F-Statistic	257.88	259.82	258.12	262.59	261.09	259.23	290.61	270.32
Observations	6302	5946	6186	5831	5998	6194	5438	4631
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B: OLS: Effect of Immigration on Expenses							
	Log(Total)	Log(Infrastructure and Public Goods Expenses)						
	Total	Capital	Judicial	Health	Roads	Police	Welfare	Parks
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	0.313***	0.264**	0.305***	0.372*	0.247***	0.280***	0.339**	-0.051
	[0.092]	[0.113]	[0.065]	[0.197]	[0.087]	[0.103]	[0.155]	[0.197]
Observations	6302	5946	6186	5831	5998	6194	5438	4631
$AdjustedR^2$	0.96	0.76	0.94	0.88	0.89	0.92	0.91	0.84
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 8: IV: Effect of Non-European Immigration on Labor Market

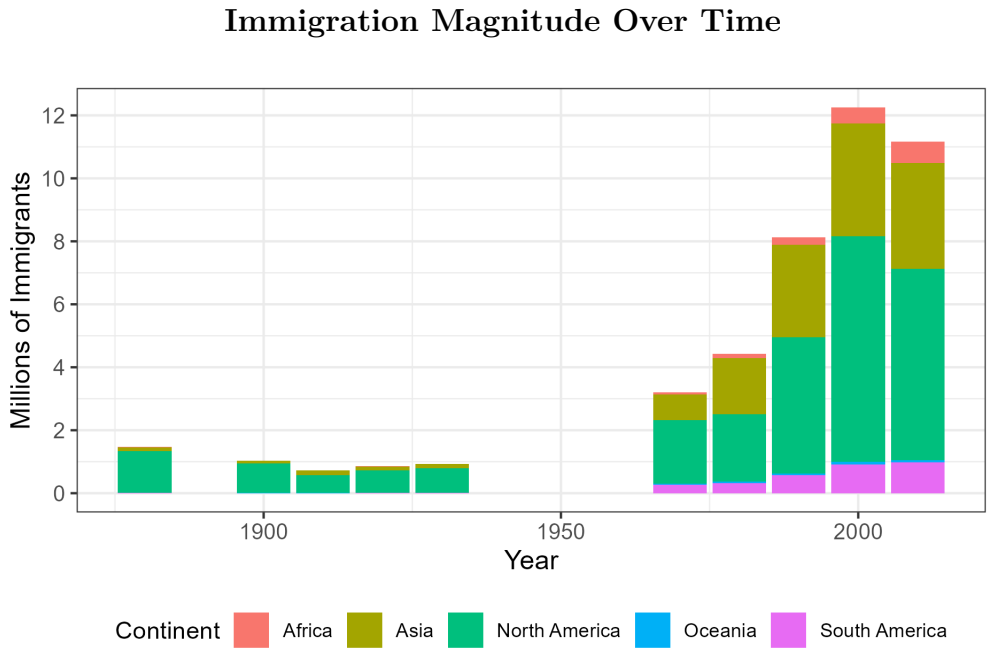
This table presents estimates of the relationship between non-European immigration and the local county's profitability and balance sheet. The table displays the IV second-stage results from regressing county profitability and balance sheet measures onto *Non-European Immigration* which is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. Data on local government finances comes from the Government Finance Database. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Panel A: IV: Effect of Immigration on Financial Position							
	Profit	Log(Debt)		Log(Assets)				Leverage
	% Net Income	Total	Long-Term	Fin. Assets	Cash	Trust	Other Trust	$\frac{Debt}{\text{Financial Assets}}$
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	-0.046	0.443***	0.388**	0.215*	0.190	0.199	0.337***	0.129
	[0.036]	[0.160]	[0.156]	[0.126]	[0.121]	[0.168]	[0.099]	[0.092]
F-Statistic	257.88	265.09	265.29	258.03	258.03	258.66	258.65	258.03
Observations	6302	5347	5304	6237	6237	6214	6178	6237
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Panel B: OLS: Effect of Immigration on Financial Position							
	Profit	Log(Debt)		Log(Assets)				Leverage
	% Net Income	Total	Long-Term	Fin. Assets	Cash	Trust	Other Trust	Leverage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-European Immigration	-0.019	0.294**	0.264**	0.160*	0.127	0.127	0.423***	0.112
	[0.016]	[0.120]	[0.120]	[0.086]	[0.086]	[0.112]	[0.107]	[0.085]
Observations	6302	5347	5304	6237	6237	6214	6178	6237
$AdjustedR^2$	0.20	0.83	0.83	0.90	0.90	0.89	0.88	0.24
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Appendix

Figure A.1: Immigration to the United States Over Time

This figure shows the magnitude and proportion of immigration to the United by continent over time. Panel A shows the magnitude of immigrants entering the United States by sender continent while Panel B provides the breakdown of the proportion of immigrants by their birth continent. Immigration data are based on respondents from the US Census Bureau decennial and American Community Survey.



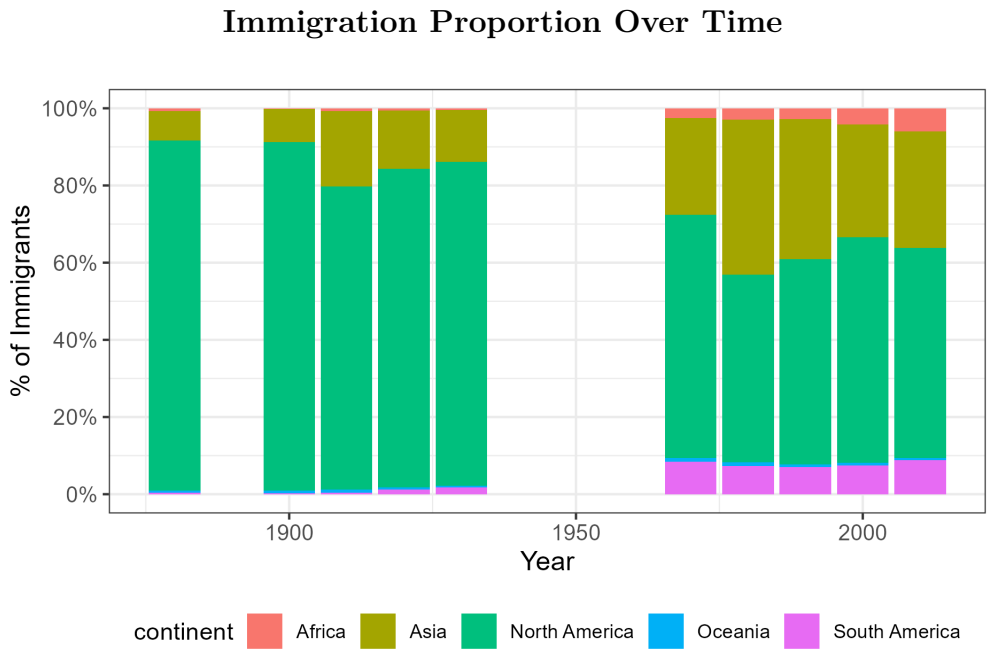


Table A.1: OLS: Effect of Immigration on Municipal Bond Yield Spreads

This table presents OLS estimates of the effect of measures of a county's population change on a municipality's yield spread. The dependent variable *Yield Spread* is a municipality's issuing yield adjusted based on its tax-exemption less the maturity matched treasury rate used in columns (1) to (5) and Δ *Yield Spread* is the prior measure less the measure's first difference from 5 years prior. The independent variable of interest in Panel A is *Population Change* which is change in population at five year intervals and in Panel B is *Net Flows* which the increase in IRS filers in the county from the prior year. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Panel A: OLS: Effect of Population Changes							
	Yield Spread					Δ Yield Spread		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Population Change	-0.023	-0.036	0.007	-0.031	-0.110***	-0.021	-0.048	-0.087
	[0.026]	[0.027]	[0.030]	[0.030]	[0.028]	[0.029]	[0.057]	[0.056]
Observations	42637	42636	42637	42636	42396	42637	42636	42396
Adjusted R^2	0.26	0.58	0.27	0.58	0.59	0.50	0.64	0.67
State F.E.	Yes	Yes	Yes	Yes	No	Yes	Yes	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	No	No	No	No	Yes	No	No	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	Yes	No	Yes	Yes	No	Yes	Yes
County Controls	No	No	Yes	Yes	Yes	No	Yes	Yes
	Panel B: OLS: Effect of IRS Net Flows Residents							
	Yield Spread					Δ Yield Spread		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Net Flows	0.306***	0.085	0.397*	0.221	0.093	0.040	-0.120	-0.102
	[0.089]	[0.054]	[0.204]	[0.154]	[0.228]	[0.078]	[0.178]	[0.348]
Observations	41721	41720	41721	41720	41479	41721	41720	41479
Adjusted R^2	0.20	0.56	0.21	0.56	0.57	0.51	0.65	0.68
State F.E.	Yes	Yes	Yes	Yes	No	Yes	Yes	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	No	No	No	No	Yes	No	No	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	Yes	No	Yes	Yes	No	Yes	Yes
County Controls	No	No	Yes	Yes	Yes	No	Yes	Yes

Table A.2: IV: Effect of Non-European Immigration on Municipal Bond Yields

This table presents robustness estimates of the relationship between non-European immigration and municipal bond yields. The table displays the IV second-stage results from regressing municipal yield spreads onto *Non-European Immigration* which is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. The first panel represents the base specification from column (5) of Table 3. The second panel presents results from various sampling choices: Row 2A uses the logarithm of yield as the dependent variable, row 2B weighs observations by the initial county's population in 1970, row 2C controls for the Census flow of internal migration, row 2D uses the full sample of bonds by back-filling immigration date. The third panel presents results from various alterations of the instrument: Row 3A keeps only counties with non-European immigration below the 99th percentile and row 3B scales non-European immigration by the county's initial population in 1970. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Yield Spread			
Instrument Variable	Coefficient	Standard Error	F-Statistic	Observations
1. Base Specification				
Immigration	-0.288**	0.12	434.11	42,396
2. Sampling Choices				
A. Use Log Dependent Variable				
Immigration	-0.123**	0.05	442.15	41,233
B. Weight by Initial County Population				
Immigration	-0.303***	0.10	715.64	42,396
C. Control Census Flow of Internal Migration				
Immigration	-0.274**	0.10	129.03	41,479
D. Include Full Sample of Bonds and Back-fill Immigration Data				
Immigration	-0.132***	0.02	432.09	248,200
3. Instrument Choices				
A. Immigration $\leq$ 99th Percentile				
Immigration	-0.885***	0.17	55.81	41,940
B. Scale Immigration by Initial County Population				
Immigration	-0.221***	0.08	18.62	42,396

Table A.3: IV: Effect of Non-European Immigration on Use of Bond Proceeds

This table presents estimates of the relationship between non-European immigration and the use of debt proceeds. The table displays the IV second-stage results from regressing indicator variables forthe use of debt proceeds onto *Non-European Immigration* which is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. The use of debt proceeds are based on the stated purpose of the bond issuance from Refinitiv. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Transportation	Utilities	Economic Dev.	Education	General	Healthcare	Housing
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Immigration	-0.004	0.002	0.008	0.022	0.013*	-0.022	-0.018
	[0.006]	[0.006]	[0.008]	[0.018]	[0.006]	[0.019]	[0.016]
F-Statistic	435.46	435.46	435.46	435.46	435.46	435.46	435.46
Observations	42397	42397	42397	42397	42397	42397	42397
$AdjustedR^2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State F.E.	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	No	No	No	No	No	No
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y-mean	0.04	0.14	0.03	0.35	0.36	0.03	0.04

Table A.4: IV: Effect of Non-European Immigration on Bond Features

This table presents estimates of the relationship between non-European immigration and bond features. The table displays the IV second-stage results from regressing bond features onto *Non-European Immigration* which is instrumented by *Immigration Shock* which is exogenous immigrant inflows based on the historical settlement and migration data. The dependent variables of interest include *Issue Amount*: the amount of the bond, *# Issues* the number of issuances in a given year by a given county, *Rating* is an ordinal variable from 1 to 7 representing the range of the rating which takes the value of underlying issuer if unrated or the insured rating if the bond is insured, *Below-AA rated* denotes whether the bond's rating is below AA, *Years to Maturity* denotes the time until the issuance matures, *Callable, Insured, and Refinancing* are indicator variables denoting whether the bond has these features. *Non-European Immigration* is per an additional 100,000 non-European immigrants entering a county over the last five years. Immigrants are defined as individuals born outside of the United States. Fixed effects and controls are denoted in the table while standard errors are clustered at the state level. ***, **, * correspond to statistical significance at the 1%, 5%, and 10% level, respectively.

	Issue Amount	# Issues	Rating	Below-AA Rated	Years to Maturity	Callable	Insured	Refinancing
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Immigration	-0.015	0.897*	-0.075	-0.018***	0.089	-0.035**	0.035*	0.007
	[0.043]	[0.483]	[0.185]	[0.005]	[0.407]	[0.014]	[0.021]	[0.020]
F-Statistic	435.46	435.46	435.46	435.46	435.46	435.46	435.46	435.46
Observations	42397	42397	42396	42396	42397	42397	42397	42397
$AdjustedR^2$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
State F.E.	No	No	No	No	No	No	No	No
State × Year F.E.	No	No	No	No	No	No	No	No
County F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year F.E.	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bond Controls	No	No	No	No	No	No	No	No
County Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Y-mean	1.80	6.37	3.67	0.12	14.74	0.69	0.27	0.27