The Impact of Cultural Preferences on Homeownership*

Caitlin S. Gorback, McCombs School of Business, UT-Austin†

and

Gregor Schubert, UCLA Anderson School of Management‡

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Abstract

Homeownership has long been a core tenet of the American Dream, but this is not universal across countries. In this paper, we study homeownership decisions among a large and growing segment of the U.S. population: foreign born U.S. residents. We identify a new channel driving immigrants' selection into homeownership, cultural preferences for homeownership. We show that high homeownership in their country of origin ("HOCO") has an effect on tenure choices for foreign-born U.S. residents: moving across the interquartile range of *HOCO* increases homeownership by 3ppt. We show in a simple tenure choice model how higher cultural affinity can increase homeownership responses to credit supply shocks and test this prediction empirically. Using an exogenous credit shock based on county exposure to lenders that are increasing their mortgage lending nationally, we show that, in response to a 1 SD mortgage credit shock, above-median HOCO residents see an annual increase in their homeownership rate that is 0.2 ppt larger than below-median-HOCO groups. These findings imply that country-of-origin-related preferences can change the impact of credit cycles and policies supporting homeownership which target historically marginalized groups.

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†Email: caitlin.gorback@mccombs.utexas.edu

‡Email: gregor.schubert@anderson.ucla.edu.

I. Introduction

In the United States, homeownership has long been viewed by policymakers as a bellwether for quality of life and a core tenet of the American Dream (Layton, 2021; Goodman and Mayer, 2018). As such, many policies have striven to support high homeownership rates, including, among others, the mortgage interest rate deduction, securitization of mortgage products, and low-down payment programs for first-time homebuyers, though none have pushed homeownership sustainably above 65% (Layton, 2022). More recently, during the global Covid-19 pandemic, President Biden declared a foreclosure moratorium in an effort to prevent a decline in homeowership. Given this policy interest in promoting homeownership, it is important to understand what drives the marginal homebuyers potentially targeted by these programs. Moreover, changes in the availability of mortgage credit have played an important role in increasing access to homeownership for minority borrowers, but also in the exposure of the latter to downturns in the housing market Mian and Sufi (2009); Bhutta (2015). As a result, understanding the degree to which changes in mortgage credit availability have a larger or smaller effect on enabling a transition into homeownership for different minority groups is important for targeting housing policy and anticipating vulnerability to credit cycles.

In this paper, we analyze an understudied yet growing set of homeowners: U.S. immigrant households. The U.S. foreign born population is large and has been growing, representing about 10% of residents in 2000, and rising to 14% by 2019. We collect new data on cultural preferences towards homeownership among foreign-born U.S. residents, with variation driven by households' differential birthplaces. We show that these country-of-origin-related preferences significantly affect household tenure choice in the U.S. Moreover, we provide evidence that these preferences also change the responsiveness of different groups' homeownership to mortgage credit supply shocks.

First, we develop a simple conceptual framework based on Brueckner (1986) that shows how cultural preferences that lead to an additional consumption benefit of homeownership lead to higher homeownership and also – in a model with downpayment constraints – can increase the responsiveness of a group's homeownership to mortgage credit supply shocks.

Second, we compute current homeownership rates by marital status across a suite of immigrant-origin countries using international census data; these cover the majority of countries from which

migrants to the U.S. originate. We use these origin-country homeownership rates as proxies for cultural norms around homeownership at different life stages. Using this data, we show the importance of these cultural factors for understanding homebuying among immigrants, a large and growing population sector, in the U.S.

We map these origin-country homeownership propensities to foreign-born residents living in the U.S. Then, we use household level data from the American Community Survey (ACS) and American Housing Survey (AHS) to show that immigrant households from countries with high homeownership rates for their respective marital status are more likely to own homes after immigrating to the U.S. than are immigrant peers from countries with higher renter rates. Moving between the interquartile range of homeownership preferences implies a 3 percentage point increase in homeownership rates. This explains about 13% of the cross-sectional variation in homeowership rates across U.S. zip codes, suggesting that lived experience is an important driver of tenure choice.

This effect survives rigorous controls for households' financial standings, demographics, household size and composition. We also control for a variety or origin-country characteristics, such as inflation experience, credit supply, property rights, and measures of cultural affinity with the U.S. Finally, we address sample selection concerns by replicating the results in the AHS, using alternative measures of origin preferences, and removing particularly large immigrant population groups. That our results survive these robusntess checks suggests that the surviving variation reflects cultural preferences that transfer from one's origin country to the U.S., consistent with the growing literature on the effects of cultural and social influences on tenure choice.

Third we move from cross-sectional household-level analysis to group-level analysis over time to study the impact of mortgage credit supply shocks on groups with different homeownership propensity. We aggregate households into panels of groups by homeownership propensity within each CBSA for 2006-2018 and compare how their homeownership changes in response to exogenous shocks to mortgage credit supply.

We construct these local credit shocks as "shift-share" instruments based on a county's exposure to lenders that are expanding their mortgage portfolio for reasons unrelated to local credit demand. This approach follows a long existing literature that uses non-local lender-level shocks to construct exogenous shocks to the availability of credit to borrowers.[1] We follow Garcia (2020) and estimate the non-local component of the national change in mortgage lending by each lender as time-varying

lender fixed effects when controlling for county-level mortgage lending activity. This isolates the degree to which a lender increases its activity in a way that is unrelated to the changes in overall credit demand in each county that it has a presence in. Counties that have higher exposure to lenders that are expanding their lending activity nationally (e.g. due to relative changes in their ability to fund mortgages) should see higher *relative* mortgage lending activity - but by construction this shock is uncorrelated with national trends and regional differences in average credit demand changes.

We estimate the effect of these exogenous credit shocks on changes in homeownership over time in a panel of groups with different homeownership propensity. Our design includes CBSA-by-year fixed effects and demographic controls, which allows us to compare the relative homeownership effects between groups that differ in their affinity for homeownership but otherwise are exposed to the same local economic trends and have similar observable characteristics.

Our results show that a 1 SD higher shock to loan originations (a shock value of $\sim$ 14% higher loan originations) leads to about a 0.2 ppt greater increase in homeownership among high HOCO foreign-born groups relative to the below-median HOCO foreign-born. This effect is robust to controlling for lagged shocks, changes in group demographic characteristics, and allowing for different coefficients in different time periods. As a result, foreign-born residents from high-HOCO countries are more likely to experience cyclical homeownership rates.

We proceed with Section II, which discusses the growing evidence in support of cultural and social effects on housing markets and provides a simple model relating tenure choice to cultural preferences and credit supply shocks. Section III describes how we collect and build our data. Section IV outlines our estimation strategy establishing immigrant preferences' impact on household-level homeownership, and reviews our results. Section VI concludes.

II. Conceptual framework

A. Background: culture as a driver of homeownership

We propose that cultural preferences, controlling for current financial and local economic conditions provide a plausible instrument. There is a long literature showing that people's cultural backgrounds and lived experiences impact tenure choice. Researchers have documented that hous-

ing preferences tend to be passed down in families. For example, Blaauboer (2011) finds that childrens' residential environments strongly correlate with their chosen residential environment as adults, and Boehm and Schlottmann (1999) find that parental tenure choice strongly predicts childrens' tenure choice, controlling for a variety of observable characteristics. There is also a growing literature showing how financial experience impacts homeownership: Botsch and Malmendier (2020) and Malmendier and Steiny (2019) show consumers that experienced high inflation are averse to adjustable rate mortgages, and also opt into higher rates of homeownership. Finally, recent work points to a strong correlation between where people grow up and their tenure choice as adults. Ringo (2020) finds that homeownership rates in one's county of birth in the U.S. predicts adult homeownership, and Marcén and Morales (2020) document that the U.S. homeownership rate among immigrants is correlated with homeownership rates in their country of origin in a 2016 cross-section. of U.S. households. Happel, Karabulut, Schäfer, and Tuzel (2022) show that differences in attitudes to homeownership in Germany as a result of exposure to residential housing destruction during World War 2 persist even in the long run.

Connections to distant places do not just operate through past personal experience in the other locations: Bailey, Cao, Kuchler, and Stroebel (2018) show individual exposure through online social networks to house price movements in distant counties where connections are located can predict differences in housing investment decisions among households, which suggests that residents with different ancestry might also be affected by contemporaneous preferences for homeownership in their country of origin if they retain social links to their home country or to other members of their ancestry group.

B. A model of tenure choice with cultural affinity for homeownership

In order to structure our empirical analysis of the effect of a cultural affinity for homeownership on homeownership rates and differential responsiveness to credit shocks, in this section we develop a simple model of tenure choice with cultural preferences and downpayment constraints. We consider housing consumption to be exogenous in order to keep the model tractable and extend the model in Brueckner (1986).

To provide the basic intuition, first consider a static tenure choice problem: a household decides

whether to rent, in which case its consumption x^R, net of rent payments Q and taxes t is

$$x^R = (1-t)y - Q,$$

where y is the household income. If the household decides to become a homeowner instead, it has to make a down-payment αP, where P is the house price, at the beginning of the period, which has an opportunity cost r.[2] The household finances the remainder $(1-\alpha)P$ of the house price with mortgage payments at interest rate r, which are tax-deductible, sells the house again at the end of the period for price P and receives back its equity αP. Moreover, the household experiences a cultural cost of being a homeowner ϕ, which represents the degree to which cultural benefits of homeownership (e.g. pride, sense of security, control premium) offset the additional costs of homeownership (e.g. mental burden, lower mobility, time cost of maintenance). Households from groups with a relatively high cultural affinity for homeownership will experience a lower cost of homeownership. Consumption for homeowners is therefore

$$\begin{aligned} x^H =& (1-t)(y - \alpha r P - r(1-\alpha)P) - \alpha P + \alpha P - \phi \\ =& (1-t)y - (1-t)rP - \phi \end{aligned}$$

Note that the initial equity payment and later return of principal net out and that the need to finance the equity payment means that the household effectively pays interest on the full purchase price. For now, we are implicitly assuming that the household has no wealth or financing constraint in coming up with the downpayment - and we will modify this assumption later. Imposing a zero profit condition for landlords, such that $Q = rP$, this means that households are indifferent between owning or renting if

$$trP = \phi,$$

and households with relatively high tax advantages (high t) or high affinity for homeownership (low ϕ) will choose to own rather than rent. A common way of visualizing this "user cost" approach to tenure choice is to plot user costs for owners and renters over tax rates. Figure 1 illustrates the trade-off in this static version of the model: the owner-occupied user cost declines with the household's marginal tax rate, while the rental cost does not vary with tax rates. Therefore, there

is some tax rate t^* above which households choose to own and below which they rent. However, the location of this indifference point is shifted by the cultural affinity for homeownership. A household with a lower mental cost (higher affinity) of homeownership will have an owner-occupied user cost curve that is shifted down for all tax rates, leading to a lower indifference point t^{**} above which a household chooses to own rather than rent. That is, *higher affinity for homeownership results in higher homeownership rates.*

Saving for downpayments. In order to evaluate the role of changes in credit supply and how they interact with this cultural affinity for homeownership, we need to make the model dynamic and introduce a role for the downpayment constraints α which did not matter in the static version. We do so by adding a period in which households need to save for the downpayment in the subsequent period, following Brueckner (1986). Now, households first live through a period 0 in which all households are renters, earn their income and can save for period 1. In period 1, they have the choice to become homeowners as before, but now have to finance the downpayment αP from their (weakly positive) savings s in the previous period. Moreover, any excess savings are invested with taxable returns r during period 1 and are available to be consumed at the end of the period.

Thus, in period 0, consumption of all households - whether future renters (R) or homeowners (H) - is given by

$$x_0 = (1-t)y_0 - s - Q$$

where households may choose different savings rates s^R or s^H depending on their optimal tenure choice in the following period. The period 1 consumption amounts then become

$$\begin{aligned} x_1^R &= (1-t)y_1 + (1+(1-t)r)s^R - Q \\ x_1^H &= (1-t)y_1 + (1+(1-t)r)s^H - (1-t)rP - \phi, \end{aligned}$$

where x_1^R and x_1^H denote the consumption of households that choose to rent and own, respectively, and $s^H \geq \alpha P$ needs to hold for the homeowner.[3] Each household maximises the objective function

$$u(x_0) + \theta u(x_1)$$

where $u(\cdot)$ is a strictly concave utility function and θ is the discount factor. We assume that owning

always dominates renting for households for whom the downpayment constraint is not binding (i.e. for which $s^R \geq \alpha P$), and focus on the households for which the constraint is binding ($s^H = \alpha P$). The owner-renter utility differential for these constrained households is given by

$$\Omega = u(x_0^H) + \theta u(x_1^H) - u(x_0^R) - \theta u(x_1^R).$$

If we think of a mortgage credit supply change as a change in the downpayment requirement α, we can derive the resulting change in the homeowner utility for constrained households (substituting $s^H = \alpha P$):

$$\frac{\partial \Omega}{\partial \alpha} = P\left(-u'(x_0^H) + \theta(1 + (1-t)r)u'(x_1^H)\right) < 0,$$

where the inequality follows from the fact that when the downpayment constraint is binding, s^H is higher than optimal and moves further away from its optimal level if the downpayment requirement increases. That is, higher downpayment requirements - a tightening of mortgage credit - reduce the utility from homeownership holding other parameters constant.

How does this effect of a tightening of mortgage credit supply vary with household affinity for homeownership? Differentiating with regard to the cultural cost of homeownership ϕ, we find

$$\frac{\partial \Omega}{\partial \alpha \partial \phi} = -P(1 + (1-t)r)u''(x_1^H) > 0,$$

so for households where the cost ϕ is larger, i.e. they have a *lower* affinity for homeownership, the negative impact of an increase in downpayments is mitigated, while higher affinity households experience a larger utility decline after mortgage credit tightens. Intuitively, households with a higher consumption benefit from being homeowners in the later period would benefit more from smoothing their consumption by shifting some consumption towards the earlier period when they are renters. However, a downpayment constraint requires them to lower consumption in the earlier period in order to save so they can afford to become homeowners. A higher downpayment constraint – and therefore higher required savings – lowers relative consumption in the earlier renter period even more for future homeowners. This leads some households to stay renters and forgo the painful period of low consumption and high savings that becoming a homeowner entails. This decline in the relative attractiveness of becoming a homeowner is stronger for high homeownership

propensity households because they will already, on average, have chosen homeownership even at lower consumption levels in the first period, and pushing that level of early period consumption lower is therefore more painful for them.

This simple model shows how *households with high affinity for homeownership can see a bigger increase in their homeownership in response to an increase in mortgage credit supply than lower affinity households* - which is what we will test empirically in section V.

III. Data

A. Homeownership & Other Origin-Country Characteristics

We use a number of different approaches to try to measure the reference homeownership rate in the country of origin that is relevant for understanding tenure choices by U.S. residents of different ancestry.

Homeownership rates in country of origin: One of the key concerns in measuring homeownership across countries is whether statistics provided by different national and international organizations measure the same concept and whether the sampled populations are representative of the underlying population. Moreover, to the degree that residents in different life stages will have different peers and reference groups in their home country, we need to take into account heterogeneity in homeownership within countries as well. To address these concerns, our main approach for constructing homeownership rates in the country of origin follows Marcén and Morales (2020) in using harmonized international census microdata from IPUMS (Center, 2020) to construct our own homeownership rates for comparable subgroups within each country. In particular, for each country we retain households where the head is 18-69 years old, and categorize each household further by the marital status of the household head.[4] We compute separate homeownership rates for each marital status in the expectation that homeownership reference points related to these major life events most cleanly transfer to the cultural expectations of U.S. residents. Where countries have multiple census years available in IPUMS, we retain the sample that is closest to the year 2015. After dropping 5 censuses that had implausibly low average homeownership rates,[5] we are left with homeownership data by marital status for 70 countries of origin in the US census data. This baseline sample contains origin country data covering 72% of the birth places of all

the foreign-born in the U.S. in the year 2000. Table II shows example data for the largest country of origin groups in the U.S. covered by this data. Note that variation in the mapping between households in the U.S. and origin-country homeownership rates can come either from variation in the homeownership for different marital statuses in their country of origin, or from variation in the marital status distribution among household heads from that country residing in the U.S.

Alternative homeownership statistics: As a robustness check, we also hand-collected data on average national homeownership rates (not disaggregated by marital status or age) from various international organizations and government statistics agencies. We were able to find data for 62 countries through this method (see Appendix Table AI for an overview of the sources for the most important origin countries).[6] In the 50 countries where these two samples overlap, the correlation between the national average homeownership rates obtained through both methods is 87%.

Country characteristics: In order to analyze the drivers of homeownership in origin countries, we also collect a cross-sectional data set of country characteristics from official data sources. In particular, we collect data on GDP per capital, inflation rates, urbanization rate, and domestic credit for 2000-2020 from the World Bank's World Development Indicators. In addition, we also use indices of property rights protection and investment freedom from the Heritage Foundation for the years 2000-2008.

B. Tenure Choice and Household Finances

American Community Survey (ACS). In order to measure household-level tenure choices for foreign-born U.S. residents, we use microdata from the American Community Survey for the years 2005-2019.[7] This is a repeated cross-section of a representative sample of U.S. households, which contains ∼3.4 M households with foreign-born heads who are 18-69 years old whom we are able to match to homeownership rates in their countries of origin. The key variable in this data set for our analysis is the measure of whether the household owns the home that it lives in. In addition, this data allows us to measure the characteristics of the head's spouse, including their country of origin, which enables analyses that measure the effect of within-family differences in origin countries on household tenure choices. Moreover, we construct the following control variables at the household and individual level from this data: household income, education of the household head and their spouse, years since immigrating of the head and their spouse, age and gender of the head and their

spouse, number of children living in the household, race of the household head and marriage status.

American Housing Survey (AHS). We augment the ACS data with data from the American Housing Survey. The AHS is also a repeated cross-section, but instead of surveying a representative sample of households, its focus is on a sample of housing units. We use data from 2001-2019, covering ten waves of the biannual survey, which yields 175k households over 585k observations. We have foreign homeownership preferences for about 30k of the households with foreign-born heads. Like in the ACS, we observe many socioeconomic and demographic characteristics of the households, including household income, education of the household head, years since immigrating of the head, age and gender of the head, number of children living in the household, and marriage status. While the ACS microdata provides us with a public use microdata area (PUMA) which we can map to a commuting zone, the AHS data only provides 15 core-based statistical areas (CBSA), or a catch-all non-CBSA code. The AHS also provides detailed data on mortgage origination and other financial characteristics of the household.

Mortgage market. In order to measure local mortgage market outcomes and mortgage lending by lender, we use data collected under the Home Mortgage Disclosure Act (HMDA). We obtain the loan-level data for 2007-2017 from the Consumer Financial Protection Bureau's website, which provides information on the lender and location of the property as well as property and loan characteristics, and supplement it with loan-level data for 2004-2006 available from the National Archives. We match lenders to their parent company using the crosswalk maintained by Robert Avery[8] and aggregate the data at the level of total loans and loan volume by lender-county-year. We retain only first-lien purchase loans that were originated for single-family (1-4 units) site-built properties that are owner-occupied, in order to focus our analysis on the type of lending that is most likely associated with a household's transition into homeownership. This data is available from HMDA for 2004 onwards and we are therefore able to construct a panel of lender-county-year data for 2004-2017.

IV. Immigrant Origins and Tenure Choice

In this section, we outline how we estimate how one's country of origin homeownership rate impacts the propensity to own a home in the U.S. after immigrating, at the household level for

households headed by the foreign-born.

A. Estimation approach

In order to establish the baseline effect of homeownership in the country of origin on tenure choice in the U.S., we use household-level data to estimate specifications of the following form:

$$HO_{ht} = \gamma HOCO_{ht}^{head} + \beta' X_{ht} + \zeta_{CZ,t} + \varepsilon_{ht} \tag{1}$$

Here, $HOCO_{ht}^{head}$ is the homeownership for householders of the same marital status in the country of origin of the household head if the head is foreign-born; X_{ht} is a vector of control variables consisting of household and individual characteristics; $\zeta_{CZ,t}$ represents fixed effects controlling for common variation at the commuting zone or year level. In fact, the full specification for most of our analyses flexibly includes commuting-zone-by-year level fixed effects, which control for the fact that immigrants might sort into cities with trends in housing markets or local labor markets that also affect homeownership rates.

To highlight the geographic variation underlying our analyses, Figure 4 shows the geographic distributions of homeownership rates and foreign-born shares. Each map is divided into four, population weighted, quartiles.

Panel (A) shows the distribution of foreign born population shares across U.S. counties. The darkest shaded quartile of counties have foreign born populations comprising at least 21% of their population; the lightest have foreign born populations lower than 4% of their totals. California, Texas, and Florida all have significant foreign born population shares; however, we observe foreign-born pockets in most states. Atlanta, GA, Raleigh-Durham, NC, central Washington state, and Colorado show that immigrants do not just locate in highly agricultural, or very urbanized areas.

Panel (B) shows that homeownership rates are highest in the midwest and mid-Atlantic states, with homeownership rates dropping along the West Coast, and around expensive metropolitan areas such as Miami, Boston and New York City. The bottom quartile covers counties with homeownership rates of up to 63%, and the top quartile has counties ranging from 77–91%. The maps display how a focus on the goal of a 65% national homeownership rate masks wide variation in county level data, with zip code level data showing even more heterogeneity.

In this section, we establish that there is indeed an effect of homeownership in the country of origin (HOCO) on immigrants' tenure choice in the U.S., and that this effect is robust to plausible confounding effects.

B. Baseline household level effects of HOCO on homeownership

To determine the size of the effect of country-of-origin homeownership on tenure choices among foreign-born U.S. residents, we estimate equation 1 in the household level ACS data. The results are shown in Table III. Each column shows the estimated effect of homeownership in the country of origin of the household head, matched by marital status, on whether the household owns their home in the U.S. The first column shows the raw association between the two variables, while the second column flexibly controls for a large number of characteristics of the household, such as income, household size, children, years since immigration, and age and education of the household head. These control variables capture other factors that we already know drive tenure choices. Additionally, they address the concern that immigrants from countries with high homeownership rates may be incidentally selected with regard to characteristics that drive higher homeownership rates in the U.S, such as being high-income. That the relationship survives these controls and remains statistically significant, shown in column 2, suggests a direct link between the homeownership experiences in immigrants' origin country and their choices in the U.S.

The following columns of Table III additionally control for the possibility that immigrants from higher homeownership countries might be sorting into labor markets or housing markets (here captured by commuting zone boundaries) that are more or less conducive to homeownership on average or which experience rising homeownership rates during the years in the sample. Column 3 adds commuting zone fixed effects and column 4 allows for commuting zone-by-year interacted effects. That is, the estimate in column 4 identifies only off within-labor-market variation in tenure choices within each year between immigrant households that are identical with regard to their observable characteristics noted above, except in the household head's country-of-origin. In our most conservative specification, we estimate the elasticity of homeownership with regard to *HOCO* to be 16% and this estimate is significant at the 1% level.

To put this number in perspective, note that it means the interquartile range of *HOCO* across households in our sample, which is between 58 ppt and 76 ppt, is associated with a 2.9 ppt difference

in homeownership rates. For comparison, this represents $\sim$ 13% of the interquartile variation in homeownership across U.S. zip codes.

To visualize how this effect is driven by different countries, we can aggregate the residualized household homeownership rates and marriage status *HOCOs* to the origin country group level. We plot the relationship between the two variables in Figure 2. The top graph shows the raw averages of homeownership in the U.S. among foreign-born residents, plotted over the averages of the marital status matched *HOCOs*. The lower graph residualizes these variables with regard to the full set of control variables in column 4 of Table III before aggregating. While the marker sizes are not weighted by number of households in the U.S., both graphs use a weighted-linear fit overlaid in the dashed red line, which accounts for differential numbers of immigrants from origin countries. These graphs make it clear that homeownership rates vary widely between countries, with average rates conditional on marital status of more than 90% in Romania, Hungary, and Cambodia at the upper end, and rates below 50% in Turkey, Ghana, and Switzerland at the lower end.

It is reassuring that no obvious grouping of countries by geography or wealth emerges from these graphs. For instance, several low-income countries can be found both among the highest and lowest *HOCO* and U.S. homeownership countries. Moreover, the most visible outliers from the fitted linear relationship in the residualized graph are Switzerland and South Sudan, which only constitute 0.14% and 0.0009% of the U.S. foreign-born population.

C. Robustness to other country-of-origin characteristics

An important concern with regard to the mechanism for our findings in Table III is that they may reflect omitted variable bias arising from immigrant households bringing other aspects of the lifestyle or economic situation of their country of origin with them, which then incidentally affect their homeownership in the U.S., without a particular preference over the latter. We consider a number of plausible home country characteristics that might be driving homeownership both in the U.S. and the origin country – the unconditional correlations of which with origin country average homeownership rates are shown in Figure 3: On the one hand, we consider economic characteristics, such as GDP per capita, urbanization rate, annual inflation rate, and domestic credit to private borrowers as a share of GDP. These capture the idea that low wealth, exposure to economic risk, urban lifestyles, or a lack of access to credit may all keep homeownership in the

country of origin artificially low, and this lack of resources and lifestyle choices may be replicated in the immigrants' experiences in the U.S. Note, for example, that homeownership is unconditionally negatively correlated with urbanization at a country level as shown in Figure 3.

On the other hand, the legal system and property rights may make homeownership a more or less attractive investment relative to the security of, and access to, other assets. The persistence of the resulting attitudes towards homes as part of a household portfolio may be part of the cultural differences that explain immigrants' homeownership in the U.S. To capture these dimensions, we consider indices of property rights and investment freedom created by the Heritage Foundation. As can be seen in Figure 3, these indices are highly positively correlated with GDP per capita and urbanization, and associated with lower inflation.

We test the importance of these confounding country-of-origin characteristics by sequentially including each of them as control variables in the full specification of column 4 of Table III. The results are shown in Table IV. The results are intuitive: country-of-origin inflation significantly negatively affects homeownership (column 3), in line with the findings in Malmendier and Steiny (2019), and private credit availability has a positive effect (column 4). When all of the country characteristics are included jointly, only urbanization has a significant (and positive) effect on U.S. homeownership. Importantly, the *HOCO* effect on U.S. homeownership is consistently positive and significant in all specifications, and the magnitude of the coefficient is slightly bigger and more precisely estimated even when all country characteristics are controlled for (column 7). This is not too surprising, as our baseline specification already includes a rich set of household characteristic controls and any other country-of-origin effects would have to operate through a channel that is orthogonal to those observables.

D. Household-level effect heterogeneity and additional robustness checks

Heterogeneity by household characteristics. It is possible that the strength of the influence of the country of origin on U.S. tenure choices depends on the characteristics of the household head. To explore this possibility, we estimate additional specifications that interact the *HOCO* variable with indicators of the householder's gender, education, and length of residence in the U.S. The results are shown in the first two columns of Table V. We find that the effects of *HOCO* on households headed by men are smaller by about a quarter of the original effect size. (column 1).

Similarly, the effect is reduced by about a third for college-educated householders (column 2).

Robustness checks. One concern with our *HOCO* effect estimation may be that there is reverse causality: immigrants move to the U.S. *because* they acquire a home, for instance as an investment, and that home purchase may be driven by recent real estate dynamics in their country of origin that are correlated with, but not driven by, the homeownership rate in that country. However, in that case we would expect the *HOCO* effect to be highest among recent movers. In contrast, if the *HOCO* effects represent something more like the expression of a cultural reference point at different life stages, immigrants would be expected to take a couple of years to establish themselves in the U.S. before taking the decision to settle somewhere and buy a home in line with their *HOCO*. We test these ideas in column 3 of Table V by comparing the *HOCO* effect among immigrants who arrived in the U.S. less than 10 years before the survey, and long-term residents who have been in the U.S. for a period of more than 10 years. The results show that the *HOCO* effect is significantly larger among long-term foreign-born residents, and smaller and not statistically significant among recent immigrants.

Another potential concern is that immigrants from particular countries are *selected* with regard to their tendency to buy a house when in the U.S. relative to their country of origin. For example, if migrants from high homeownership origin countries tend to be selected to be particularly wealthy or more educated than average, e.g. because only the elites of low-income countries are able to pay the costs associated with migrating, then these selected characteristics might drive homeownership in the U.S. rather than the homeownership rates in the origin country. This concern should be mitigated by the fact that our baseline regressions already directly control for foreign-born households' income, education, and household size, such that any such selection would have to be orthogonal to these observables. However, to additionally ensure that our results are robust to the *average* characteristics of migrants from that origin, column 4 shows a version of our regression where we also control for the average share of college-educated household heads, mean household income, mean number of children and mean household size among migrants from that origin country. In addition, we control for the GDP per capita of the origin country, in case immigrant selection is driven by the economic opportunities in the country of origin. Given that some of these migrant characteristics may actually be affected by homeownership, they may represent "bad controls" (Angrist and Pischke, 2008) that shut down the causal channel of interest – and the estimates including these

controls should therefore be interpreted with caution. As the results in column 4 show, while the estimated effect size is reduced when including these additional controls, it is nonetheless statistically significant and implies an elasticity of 11% of U.S. tenure choice with regard to the household *HOCO*.

As Table II shows, the share of U.S. migrants from different origin countries is highly concentrated. As a result, it is important to establish whether our *HOCO* effect estimates are driven by idiosyncrasies of the biggest origin countries or also hold for the smaller foreign-born origin groups in the U.S. In column 5 of Table V, we therefore exclude any households with heads from one of the top 5 countries included in our data (Mexico, Puerto Rico, Philippines, Canada, Vietnam)[9]. The results show the estimated *HOCO* elasticity for this smaller sample is still 10% and significant at a 1% level, which suggests that the large origin countries are not driving the baseline results.

Our measure of homeownership preferences assigns *HOCO* measured in international census microdata by household head marital status. We explore two variations: on the one hand, many origin-country specific selection effects that might be driving our results, e.g. the wealth of migrants, are likely less correlated in their effect to the marital status-specific homeownership rates in the country of origin, even if they are correlated with overall homeownership rates in the origin country. In column 6, we show that if we replace our *HOCO* measure with the average origin country homeownership rate estimated from census data - without accounting for marital status - that makes the effect estimate smaller, noisier, and no longer statistically significant. This means that any concern over *HOCO* being a proxy for a different driver of U.S. tenure choices would require that omitted variable to be not just driving overall homeownership for migrants from that origin country but instead to operate in a way that differs across marital status groups.

In column 7, we show that our results are not due to mismeasurement of *HOCO* in the international census microdata. We hand-collect average national homeownership rates from official government sources or international organizations like the OECD. While this sample covers a smaller number of countries (62, compared to 74 in our microdata sample), it *does* include China and India, which are the origin countries for a large share of U.S. foreign-born residents, and which are not included in our baseline sample. The *HOCO* constructed from the national average homeownership rates in this alternative data set still has an effect on U.S. tenure choice that is significant at the 10% level, and the estimated effect size of 16% is again very similar to our baseline estimate using

the microdata *HOCO* by marital status.

The other concern around sample selection may be that the American Community Survey household data has a sampling methodology or differential response rates that correlate both with *HOCO* and U.S. tenure choices. In column 8, we instead use data from the American Housing Survey, which collects a much smaller sample using a different methodology focused on being representative of housing units in the U.S. and tracking them over time. When we estimate our baseline effect in this separate data set of only $\sim$ 46K foreign-born householders, we obtain an estimated *HOCO* elasticity of 15% that is significant at the 5% level, so our baseline effect does not seem to be driven by methodological idiosyncrasies of the ACS sample.

V. Credit cycles and foreign-born homeownership

One of the key goals of this paper is to assess the degree to which an affinity for homeownership as a result of foreig-born residents' country of origin changes the impact of credit shocks on housing market outcomes for different groups. How different demographic groups respond to credit expansions can have important impacts on their financial situation: other researchers have shown that racial minority households in the U.S. saw large increases in homeownership during the peak of the housing boom of the mid-2000s, which then resulted in an increased risk of mortgage delinquency and foreclosure during the subsequent bust (Bayer, Ferreira, and Ross, 2016). Moreover, homeownership is associated with differences in child outcomes, mobility, and many other aspects of household behavior (Dietz and Haurin, 2003). As a result, differential responsiveness to mortgage credit supply shocks can lead to differences in a number of group outcomes, which has important implications for the effectiveness and welfare consequences of policies that try to promote homeownership.

In this section, we show that an affinity for homeownership resulting from foreign-born residents' country of origin can substantially affect the impact of mortgage credit supply shocks on housing markets.

A. Identification of mortgage credit supply shocks

In order to estimate the impact of mortgage credit on homeownership, we need to address the fact that a household's access to credit is likely to be endogenous with regard to its income and wealth, which are affected by a group's homeownership rates, and may also be affected by racial discrimination (Ambrose, Conklin, and Lopez, 2021). To estimate the effect of increased access to mortgage credit on homeownership rates among groups with different countries of origin, we therefore need to identify changes in credit supply that are plausibly exogenous with regard to group characteristics.

Our baseline analysis uses mortgage credit supply shocks based on county exposure to heterogeneous shocks to aggregate mortgage lending by different banks, following Gilchrist, Siemer, and Zakrajsek (2018) and Garcia (2020). The intuition for the approach is that local mortgage lending may change either due to local changes in credit demand or due to a change in lenders' willingness to originate new mortgages for idiosyncratic or common reasons - shifts in "credit supply". To the degree that the idiosyncratic shifts in bank mortgage credit supply have a greater impact on counties where the affected banks have a higher market share, they can generate variation in local lending that avoids concerns over reverse causality from local housing market dynamics affecting lending.

To estimate lender fixed effects that are orthogonal to local mortgage demand shocks we run regressions of the following form: for any county c and lender j, we estimate

$$\Delta \ln L_{c,j,t} = \alpha_{c,t} + \eta_{j,t} + \varepsilon_{c,j,t},$$

where $L_{c,j,t}$ is the number of loans originated by lender j in county c in year t; $\alpha_{c,t}$ are locality-by-year fixed effects, and $\eta_{j,t}$ are lender-by-year fixed effects. We keep only lenders in each year that have lending activity in at least 3 counties and estimate this regression separately for the years 2005-2017. We follow Gilchrist et al. (2018) and weight the data points by the geometric mean of the lender's market share in the county and the county's share in the lender's activity in each year. Moreover, as we are interested in exposure to *relative* differences in lender activity, we re-center the estimated $\hat{\eta}_{j,t}$ terms for each year such that the loan-origination-weighted mean of lender shocks is zero.

Note that if a county's lending declined because of local economic shocks, this will be captured by the county-by-year fixed effects, while a change in lending due to a lender's change in ability to fund mortgages, independent of the dynamics of the markets in which the lender is present, will be captured by the lender-by-year fixed effects.

The shock to local mortgage lending in a county that is driven by exposure to lenders that are experiencing aggregate changes in their ability to fund mortgages is then constructed as the market-share weighted average in each county of the lender fixed effects:

$$S_{c,t} = \sum_{j \in C} \underbrace{\frac{L_{c,j,t}}{\sum_{j \in C} L_{c,j,t}}}_{\substack{\% \text{ of local lending} \\ \text{by lender } j}} \times \underbrace{\hat{\eta}_{j,t}}_{\text{Re-centered lender FE}}$$

Counties will experience below-average access to mortgage lending if they have greater exposure to lenders that are curtailing lending more on average nationally - net of market credit demand effects. The identifying assumption for using this shock to study the effects of exogenous shifts in credit supply on homeownership is that lender fixed effects are not correlated with within-county shocks to the demand for homeownership by low- and high-HOCO residents. That is, this assumption could be violated, for example, if banks that lend relatively more in some geographic areas experience mortgage funding constraints at the same time as the demand for homeownership shifts in relative terms between low- and high-HOCO groups in the same areas. As such local exposure to particular banks and demand shifts is likely correlated with shifts in county demographics, such as income or family structure, we control for changes in HOCO-group-by-county demographics in our subsequent estimations.

B. Estimation approach

One limitation of the household-level ACS data is that it represents a repeated cross-section of a representative sample of U.S. households, but households cannot be tracked over time. However, cross-sectional analysis of credit shock effects on homeownership is not suitable for our purposes: as we showed earlier there are large cross-sectional differences in *levels* of homeownership across different areas, which could be correlated with static geographic differences in exposure to lenders. Therefore, we would like to control for these time-invariant levels and exploit variation in credit

shocks over time *within* counties. Moreover, mortgage credit supply shocks allow additional households to enter homeownership at the margin, adding to and existing stock, and should therefore mainly be associated with *changes* in homeownership. Thus, the dependent variable should be in differences, which also requires variation over time.

Under the assumption that any sampling bias of different HOCO groups does not vary over time, we can aggregate the household-level ACS data used in earlier analyses into group level data for HOCO-county-year cells that are comparable over time. We define 5 different groups g in the household data – US-born, high-HOCO foreign-born, low-HOCO foreign-born, Mexican-born, and no-HOCO data foreign-born – so that we can compare relative effects for foreign-born residents with different affinities for homeownership. High and low HOCO are defined as above and below the population-weighted median HOCO among non-Mexican foreign-born. The reason to treat the Mexican-born foreign-born differently is that they constitute the largest group of foreign-born residents and have HOCO values close to the median, such that minor differences in weighting can shift large foreign-born population shares between the low and high-HOCO categories and can make the results highly sensitive to the idiosyncratic characteristics of the Mexican origin group. For each county-year-group, cell we compute average homeownership rates and demographics, weighting each household by its ACS population weight.

Then, at the group-county-year level, we estimate regressions of the form

$$\Delta HO_{c,g,t} = \phi S_{c,t} + \beta_g S_{c,t-1} \times \mathbb{1}[HOCO_g] + \gamma' X_{c,g,t} + \zeta_{c,g} + \psi_{CBSA,t} + \varepsilon_{it}, \tag{2}$$

where $\Delta HO_{c,g,t}$ is the change in the local homeownership rate of group g over time; $\mathbb{1}[HOCO_g]$ is a dummy indicating the different groups; and $X_{c,g,t}$ represents time-varying demographic controls similar to those used in the household level regressions as well as one lag of the level of homeownership.[10] The baseline specification also contains county-group level fixed effects $\zeta_{c,g}$ which control for the fact that some areas may generally make it easier or harder for groups with different affinities to move towards homeownership, which could lead them to have generally higher or lower growth in homeownership in our sample. Moreover, we include CBSA-by-year fixed effects $\psi_{CBSA,t}$ to account for regional trends in homeownership over time.

C. Results: Affinity for homeownership and credit supply responsiveness

How does an affinity for homeownership affect the average response of households to mortgage credit shocks? The results of estimating equation 2 for the years 2006-2018 is shown in Table VI. The first two columns show the baseline effect of the mortgage credit supply shocks on homeownership changes for the different groups, with low HOCO foreign-born as the reference group - such that its coefficient represents the baseline level of the credit shock effect - and all other coefficients defined relative to it. [11] Column 1 includes only year and CBSA-group fixed effects, in addition to the demographic controls and lagged homeownership levels, while column 2 also adds CBSA-by-year trends. These different fixed effects shift the (negative) intercept for the effect of credit shocks on low-HOCO foreign-born homeownership (first row). However, the relative difference in impact on high HOCO origin groups (third row) is very similar across the different specifications: foreign-born residents with higher affinity for homeownership have a significantly higher responsiveness to credit shocks.

The units of the shock correspond to relative log point differences in national loan growth (controlling for local credit demand) among the banks that the average county in the CBSA is exposed to. That is, the coefficient in row 3 of column 2 indicates that a 1 SD higher shock to loan originations (a shock value of $\sim 14\%$ higher loan originations) leads to about a 0.2 ppt greater increase in homeownership among high HOCO foreign-born groups relative to the below-median HOCO foreign-born.

One concern may be that past mortgage credit shocks affect house prices (Loutskina and Strahan, 2015), which in turn may have a delayed impact on present homeownership, such that some of the estimated effect of credit shocks on homeownership in the subsequent period may in fact be due to earlier credit shocks. To test whether these delayed effects of past shocks play a role, in column 3 we additionally control for group-specific interactions with the credit shock two years earlier, which turns out to affect the estimated difference in responsiveness of high HOCO groups very little.

Moreover, the period 2006-2018 that our data allows us to study contains a severe boom-bust cycle in house prices from the mid-2000s to the early 2010s that caused substantial dislocation in housing markets. Any economic uncertainty and disruptions to the normal functioning of the

mortgage credit system during this period might affect the degree to which changes in credit supply translate into changes in homeownership. In column 4 of Table VI, we allow the group-specific credit supply effects to vary between the earlier boom-bust period of 2006-2013, and the 2014-2018 boom period. While the coefficient for the additional effect on high-HOCO groups is less precisely estimated and about 10% smaller than in column 2, the estimated differences between periods are not significant. This suggests that our results are not substantially driven by a particular period during the recent housing market cycles.

VI. Conclusion

Homeownership has long been a core tenet of the American Dream, but this is not universal across countries. By utilizing cultural preferences in homeownership to vary tenure choice in the U.S., we provide a new perspective for understanding tenure choice and the impact of credit market variation among immigrant groups, a large and growing cohort of U.S. homeowners. We find that homeownership preferences positively predict immigrants' tenure choices in the U.S. Given that one's ancestry often intersects with more visible identifiers, such as race or ethnicity, policymakers should consider country-of-origin differences when designing policies as origin-based preferences can amplify or dampen the impact of policies which hope to encourage homeownership. In this paper, we highlight a particularly salient dimension of housing policy and the transmission of economic shocks to the housing market by studying the impact of changes in credit supply. Our results suggest that where someone was born before they moved to the U.S. can have long-lasting effects on how they interact with financial markets, as credit supply variations are more likely to lead to an investment in homeownership for groups that come from countries where homeownership is more common. However, there are many other dimensions of housing policy and housing market shocks that may show similar differences across foreign-born groups, but which we do not cover in this paper - and we hope that future research can fill that gap.

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Notes

[1]See, e.g. Khwaja and Mian (2008); Garcia (2020); Greenstone, Mas, and Nguyen (2020)

[2]For simplicity, we will assume that the household can borrow and invest at the same rate, but the conclusions do not qualitatively depend on this.

[3]Note that the homeowners here implicitly receive returns on their entire savings - even though αP is invested in the downpayment - because any downpayment reduces the mortgage cost at a rate r.

[4]We distinguish between 4 marital status categories: single or never-married, married, separated or divorced, and widowed.

[5]We dropped any sample with an average homeownership rate of less than 33% that could not be independently verified by an online search, which led us to drop: Argentina 1991, Benin 2002, Ethiopia 1994, Togo 2010, and Papua New Guinea 1990.

[6]This hand-collected comparison sample covers origin countries comprising 87% of all the foreign-born in the U.S. and 9.2% of the total U.S. population.

[7]This data was accessed through IPUMS(Ruggles, Flood, Goeken, Grover, Meyer, Pacas, and Sobek, 2020).

[8]We downloaded this crosswalk from Neil Bhutta's website. The mapping to lender parent companies is only available through 2017 at which point the lender identification codes in HMDA change. Therefore, we limit the analysis to the years before for which we can consistently aggregate to parent companies over time.

[9]Note that the international census data for China and India does not allow for computing homeownership rates by marital status, such that Chinese-headed households are not included in our baseline regressions.

[10]We include average income, marriage rates, college shares, male headship share, age (linear and squared) of the head, hispanic share, children in the household, household size, and the population share of different race for each group in the county.

[11]The "intercept" coefficient that represents the reference group has been labeled "low HOCO" for clarity, even though it does not have an interaction with a group indicator in the regression. While separate coefficients for the Mexican-born and no-HOCO data foreign-born groups are estimated, they are not shown in the table to make the presentation more concise.

VII. Tables

Table I: Regional variation in homeownership

Zip code pctl.	2000	2010	2017
5^{th}	33	34	33
25^{th}	60	58	56
50^{th}	73	70	69
75^{th}	82	79	78
95^{th}	90	89	89
Mean	69	67	66
Obs	32,787	32,673	32,519

Notes: Percentiles of homeownership rates in the cross-section of U.S. zip codes in years 2000, 2010, and 2017. Summary statistics are weighted by housed population. Source: American Community Survey data aggregated at the zip code level.

Table II: Homeownership rates for selected countries of origin computed from international census data

Rank	Origin	$\%\text{Pop}^{00}_{USA}$	% Married	% $HOCO^{All}$	% $HOCO^{Married}$
	ACS 2000 Birthplace				
1	Mexico	3.2	67	66	69
2	Puerto Rico	0.7	44	65	81
3	Philippines	0.5	64	77	77
4	Canada	0.4	55	68	81
5	Vietnam	0.4	65	92	95
⋮	⋮	⋮	⋮	⋮	⋮
	United States	86.5	54	67	83

Notes: This table summarizes our homeownership rates, by country of origin (*HOCO*) for the largest country-of-origin groups among foreign-born immigrants residing in the U.S. These homeownership rates are computed from harmonized country census microdata (obtained through IPUMS) by marriage status. Only countries for which this data was available are shown. The table is ranked by the population share of each immigrant group among U.S. household heads who are 18-69 years old in 2000 (according to Decennial Census data), and also shows the share of household heads from that origin who are married. It shows the average homeownership rate in the country of origin, as well as the rate among married household heads. We also provide the US native-born population data for the year 2000. Full table of 70 countries with homeownership data available upon request. Population shares of the 5 largest country-of-origin groups for which we could not compute homeownership data by marriage status: Germany, 0.47%; India, 0.47%; China, 0.38%; Cuba, 0.36%; South Korea, 0.29%.

Table III: Baseline effects of Homeownership in Country of Origin on Tenure Choice

Dependent var.:	Household Homeownership$_{it}$ (in %)			
	(1)	(2)	(3)	(4)
HOCO (%)	0.890***	0.213***	0.175***	0.157***
	(0.10)	(0.07)	(0.05)	(0.05)
Observations	3,102,570	3,102,465	3,102,465	3,102,397
R-Squared	0.06	0.25	0.29	0.31
Household Characteristics	No	Yes	Yes	Yes
Commuting Zone FE	No	No	Yes	No
Commuting Zone × Year FE	No	No	No	Yes

Notes: This table shows the results of estimating Equation 1 in a pooled household level sample of households with foreign-born heads who are 18-69 years old, for the years 2000 and 2005-2019. The dependent variable is an indicator of homeownership in percent (so 100 indicates that the household owns their home). The independent variable is the homeownership rate in the country of origin ($HOCO$) of the household head for people with the same marriage status (single, married, separated/divorced, widowed). Household characteristic control variables consist of: HH Income, (linear and ventile indicators), Quadratic function of Age of HH head and 5-year age group indicators, indicators for educational achievement of HH head, Indicators for # of children and # of relatives in the HH, Indicators for discretized years since immigration of head, marital status of HH head, and the interaction between marital status and years-since-immigration categories. Heteroskedasticity-robust standard errors clustered at the origin country level shown in parentheses. *,**, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Table IV: Effects of HOCO on Tenure Choice: Country Characteristic Controls

Dependent var.:	Household Homeownership$_{it}$ (in %)						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
HOCO (%)	0.166***	0.136***	0.169***	0.117**	0.194***	0.182***	0.168***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.03)
GDP per capita (2021 USD)	0.081						-0.118
	(0.06)						(0.13)
Urban population (% of total)		-0.043					0.105*
		(0.05)					(0.05)
Consumer price inflation (annual %)			-0.119*				0.112
			(0.07)				(0.21)
Domestic credit provided by financial sector (% of GDP)				0.034***			0.029
				(0.01)			(0.02)
Property rights index					0.067		0.127
					(0.05)		(0.10)
Investment freedom index						0.049	-0.075
						(0.06)	(0.06)
Observations	3,102,397	3,051,182	2,888,843	2,104,036	2,840,788	2,840,788	2,063,317
R-Squared	0.31	0.31	0.31	0.30	0.31	0.31	0.30
Household Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commuting Zone × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: This table shows the results of estimating the same specification as column 4 of Table III, and additionally controlling for country-of-origin characteristics. Each column adds in one characteristic as a control variable. On the one hand, we add 2000-2020 averages of economic characteristics from the World Bank's World Development Indicators: GDP per capita (column 1), urbanization rate (column 2), annual inflation rate (column 3), and domestic credit to private borrowers as a share of GDP (column 4). On the other hand, we include indicators of property rights (column 5) and investment freedom (column 6) from the Heritage Foundation, which are averaged over 2000-2008, and for which higher numbers indicate more rights. Column 7 jointly includes all of these characteristics. Heteroskedasticity-robust standard errors clustered at the origin country level shown in parentheses. *,**, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

Table V: Effects of Homeownership in Country of Origin on Tenure Choice: Additional Specifications and Robustness Checks

Dependent var.:	Household Homeownership$_{it}$ (in %)							
	(1) By Gender	(2) By Educ.	(3) By Years since Immig.	(4) Mig. Char. Controls	(5) Excl. 5 largest Orig. Ctries	(6) Nat. avg. HOCO Data	(7) Gov. source HOCO Data	(8) AHS Data
HOCO: by marriage status	0.174***	0.174***	0.073	0.111***	0.101**			0.148**
	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)			(0.07)
HOCO × Male	-0.042***							
	(0.01)							
HOCO × College Educ.		-0.054**						
		(0.02)						
HOCO × LT Resident (> 10 Yrs)			0.108**					
			(0.05)					
HOCO: microdata national avg.						0.108		
						(0.10)		
HOCO: gov. sources national avg.							0.164*	
							(0.08)	
Observations	3,102,397	3,102,397	3,102,397	3,102,397	1,355,263	3,102,397	3,498,376	46,065
R-Squared	0.31	0.31	0.31	0.31	0.33	0.31	0.31	0.31
Household Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Commuting Zone × Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
CBSA × Year FE	No	No	No	No	No	No	No	Yes

Notes: This table shows the estimation results from additional specifications that vary particular aspects of the baseline regression in column 4 of Table III. The first three columns check for differential impacts by characteristics of household head: whether the head is male, his or her education level, and how long the head has been in the U.S. Column 4 controls for average migrant characteristics by origin country. Column 5 excludes the five largest immigrant groups in the U.S. from the sample. Column 6 substitutes our preferred marital status - by - origin *HOCO* measure with average homeownership rate in country of origin. Column 7 uses hand collected data from governmental reports for *HOCO*, rather than estimating it from microdata. Column 8 utilizes the AHS sample instead of the baseline ACS sample. Heteroskedasticity-robust standard errors clustered at the origin country level shown in parentheses. *,**, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

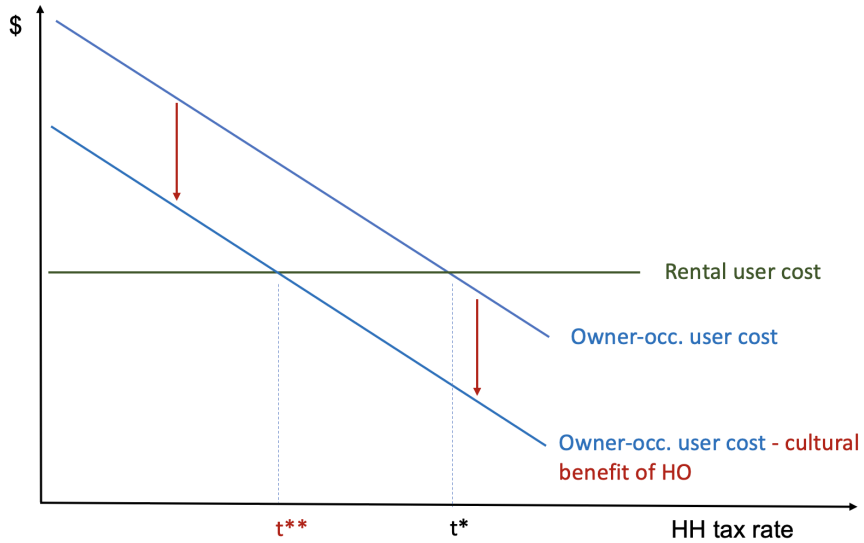
Table VI: Credit supply shocks and affinity for homeownership

Dependent var.:	Δ Homeownership$_{c,g,t}$ (in ppt)			
	(1)	(2)	(3)	(4)
Low HOCO $\times$Shock$_{t-1}$	-0.167	-3.554	-3.801	-2.676
	(0.47)	(2.81)	(3.25)	(2.94)
Native $\times$ Shock$_{t-1}$	0.607	0.262	0.365	0.418
	(0.50)	(0.49)	(0.48)	(0.51)
High HOCO $\times$ Shock$_{t-1}$	1.620**	1.415**	1.473**	1.264*
	(0.72)	(0.72)	(0.73)	(0.71)
Low HOCO $\times$ (2014$\leq$Year$\leq$ 2018) $\times$ Shock$_{t-1}$				-10.717
				(14.30)
Native $\times$ (2014$\leq$Year$\leq$2018) $\times$ Shock$_{t-1}$				-3.051
				(4.17)
High HOCO $\times$ (2014$\leq$Year$\leq$2018) $\times$ Shock$_{t-1}$				-0.034
				(5.28)
Observations	15,457	15,453	14,019	15,453
Adj. R-Squared	0.53	0.55	0.55	0.56
Group Demographics	Yes	Yes	Yes	Yes
Homeownership$_{c,g,t-1}$	Yes	Yes	Yes	Yes
Group $\times$ CBSA FE	Yes	Yes	Yes	Yes
Year FE	Yes	No	No	No
Year $\times$ CBSA FE	No	Yes	Yes	Yes
Shock$_{t-2}$ $\times$ Group interactions	No	No	Yes	No

Notes: This table shows the results of estimating Equation 2 for the years 2006-2018 in a sample of CBSA-year-group cells, where the groups are the referenced HOCO categories: US-born natives, foreign-born without HOCO data, above-median HOCO, below-median HOCO, and Mexican-born. Coefficients for interactions with Mexican foreign born and no-HOCO foreign born groups have been omitted from the table for easier readability. The dependent variable is an indicator of the change in homeownership rates in percentage points. The group demographic control variables include average income, marriage rates, college shares, male headship share, age (linear and squared) of the head, hispanic share, children in the household, household size, and the population share of different races. See the text for how the credit shocks are constructed. Heteroskedasticity-robust standard errors clustered at the CBSA level shown in parentheses. *,**, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

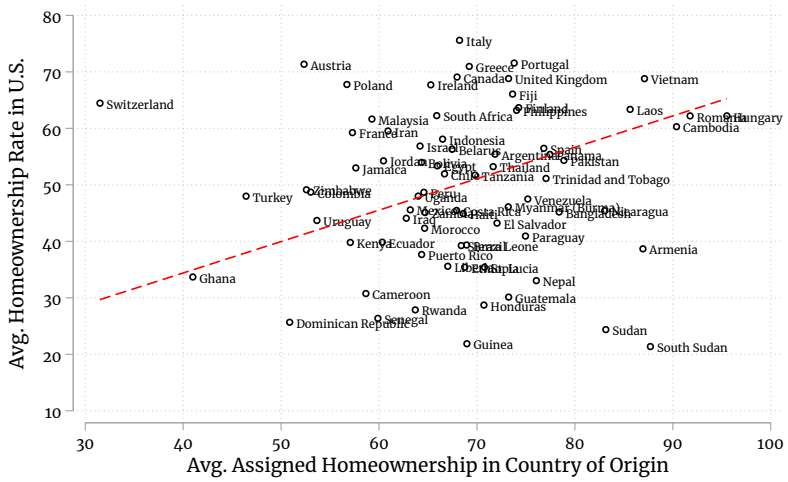
VIII. Figures

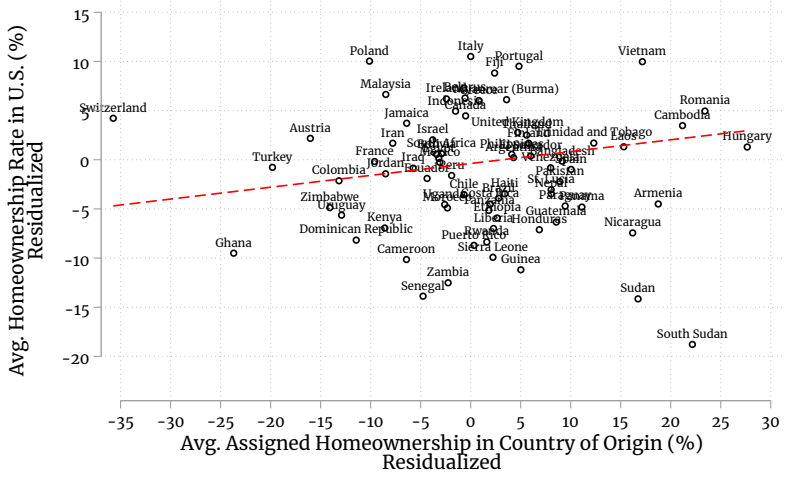
Figure 1: Static tenure choice with cultural affinity for homeownership



Notes: This figure shows the user-cost vs. tax rate profile for households that rent or own, as outlined in Section II. Here "cultural benefit of homeownership" is analogoous to ϕ.

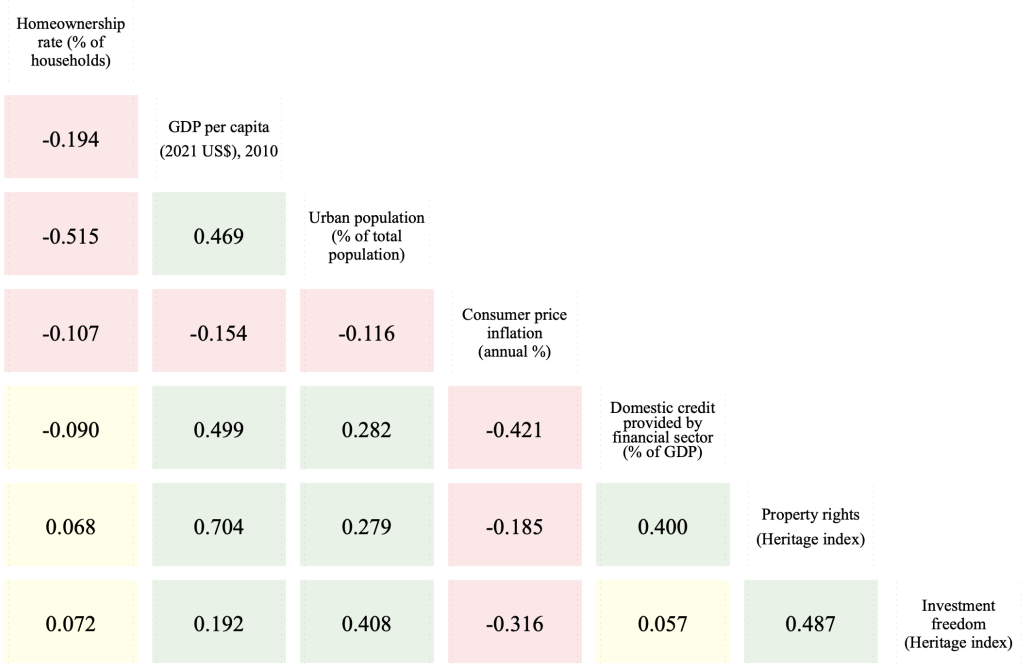
Figure 2: Relationship between Homeownership in the U.S. and *HOCO* among Immigrants at the Origin Country Level





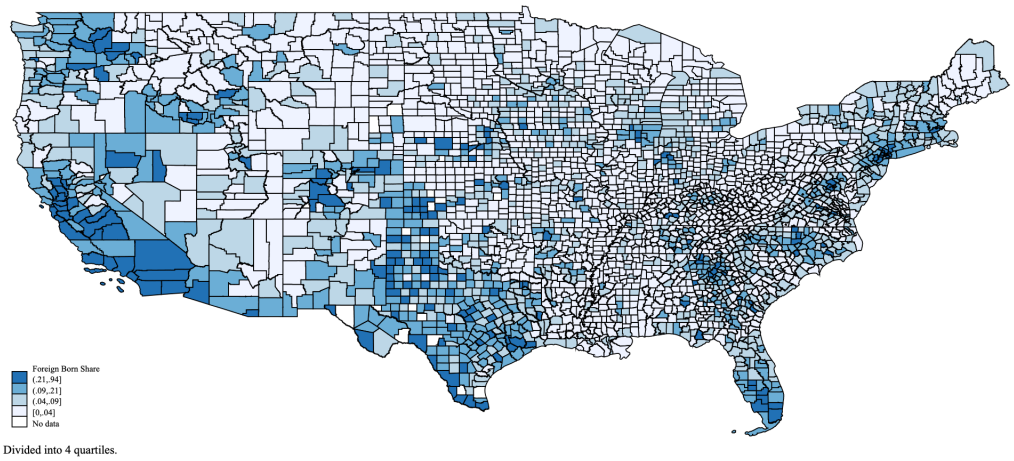
Notes: These graphs shows origin country averages of homeownership among U.S. households with foreign-born heads on the vertical axis, and the average of these households' associated homeownership in the country of origin by marital status on the horizontal axis. The left graph shows these averages for the raw ACS data from the years 2000 and 2005-2019, while the right graph residualizes both homeownership and *HOCO* at the household level before aggregating. The control variables for the residualization consist of: HH Income, (linear and ventile indicators), Quadratic function of Age of HH head and 5-year age group indicators, indicators for educational achievement of HH head, Indicators for # of children and # of relatives in the HH, Indicators for discretized years since immigration of head, marital status of HH head, and the interaction between marital status and years-since-immigration categories. The linear fits and slopes in each graph weight each country by the number of foreign-born residents with that origin in the sample. Note that the aggregation means that the regression slopes at the origin country level are merely illustrative here,/ They are not directly comparable to the household level effect estimates, which should be relied on for the quantitative magnitude of the effect.

Figure 3: Correlations between *HOCO* and Country Characteristics

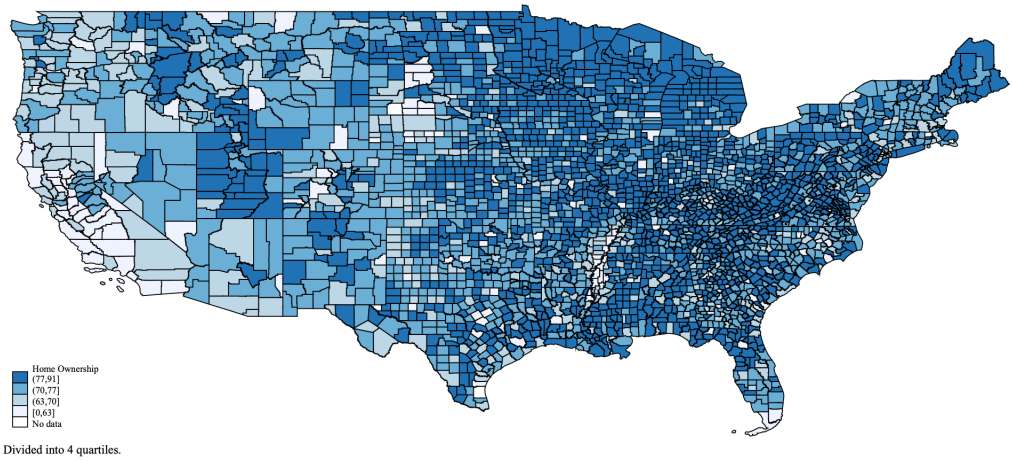


Notes: This matrix shows the correlations between the average (not marital-status-specific) homeownership rate in different countries and other country characteristics. On the one hand, the characteristics consist of economic characteristics GDP per capita (in constant 2021 USD), urbanization rate, annual inflation rate, and domestic credit to private borrowers as a share of GDP - all of which are computed as averages of all available data for 2000-2020 from the World Bank's World Development Indicators. On the other hand, we include indicators of property rights and and investment freedom from the Heritage Foundation, which are averaged over 2000-2008, and for which higher numbers indicate more secure rights and greater freedom.

Figure 4: Spatial Distribution of $HO_{d,2000}$ and $FBShare_{d,2000}$



(A) $FBShare_{d,2000}$



(B) $HO_{d,2000}$

Notes: These maps plot the foreign-born population share and homeownership, all anchored to their distributions at of the year 2000, at the county level. The maps are each divided into equal, population-weighted quartiles. Darker colors have higher values, and lighter colors denote lower values.

ONLINE APPENDIX

Appendix A. Additional Tables

Table AI: Homeownership rates for selected countries of origin

Rank	Origin	$\%Pop^{00}_{USA}$	*HOCO*	Year	Source
1	Mexico	3.26	68	2018	OECD report: HM1.3-Housing-tenures
2	China	0.54	90	2015	Chen, Li and Wu (2021)
3	Philippines	0.49	64	2019	Philippine Statistics Authority
4	India	0.36	87	2011	Census of India (2011)
5	Vietnam	0.35	88	2019	Vietnam General Statistics Office
⋮					
71	Belarus	0.01	77	2009	UN Statistics Division
74	Sierra Leone	0.01	79	2004	Statistics Sierra Leone
	United States	86.45	63	2018	American Community Survey

Notes: The summarizes our hand-collected homeownership rates, by country of origin (*HOCO*) for the largest country-of-origin groups among immigrants residing in the U.S. The table moves downward by the population share of each immigrant group. It also displays their share of the total U.S. population in 2000 (according to Decennial Census data), the data source for homeownership, and data reporting year for homeownership. At the bottom, we provide the US population share, and the homeownership rate in 2018. Full table of 60 countries with homeownership data available upon reuqest. Population shares of 14 countries we could not find reliable homeownership data: Cuba, 0.31%; El Salvador, 0.29%; Iran, 0.1%; Ukraine, 0.1%; Guyana, 0.08%; the former Yugoslavia, 0.04%; Lebanon, 0.04%; Bosnia and Herzegovina, 0.04%; Syria, 0.02%; Barbados, 0.02%; Afghanistan, 0.02%; Polynesia, 0.01%; Melanesia, 0.01%; Micronesia, 0.006%