Cultural avoidance and internal migration in the USA: Do the Source Countries Matter?

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Abstract: There has been a heated academic debate in the US migration literature regarding whether contemporaneous flows of immigrants displace domestic migrants. While the results of this question are important, it does not answer whether there are cultural avoidance effects in which domestic migrants avoid states with high *stocks* of past immigrants. The answer to this question would suggest non-labour market responses to immigrants. In assessing the cultural avoidance issue, we examine whether domestic migration responds to the origin countries of the immigrants. We find that after controlling for contemporaneous flows, net domestic migration is negatively associated with larger immigrant stocks from Latin America and Africa and positively associated with immigrant stocks from Canada and Europe. We find that the human capital composition of immigrants also influences net-domestic migration flows—in which native migration is positively associated to immigrant stocks at the tails of the human capital distribution. This pattern suggests that domestic migrants are attracted to immigrants who are complementary to domestic labour. However, origin country effects continue to influence immigration. The implication is that while labour market factors affect immigration, non-labour market factors appear to play a role.

1. Introduction

Immigration – and its effects on the host countries - is one of the most hotly debated and ever-lasting topics in advanced societies. A primary concern of immigration studies is to evaluate how immigration affects the native population and how natives respond to immigrant flows. Recent evidence from the USA (Filer 1992, Frey 1995a), Canada (Ley and Tutchener, 2001), and Australia (Sheenan, 1998) shows that large in-flows of migrants in gateway cities are associated with large out-flows of natives but the causes of this response are not entirely clear.

Some authors argue that the causes are mainly of an economic nature relating to the labour market. If immigrants and natives are perfect substitutes in the labour market then the increase in the labour supply, caused by the immigrants' in-flow, would lead to lower wages, which, in turn, would push natives to out-migrate. Although immigration in the USA has been relatively concentrated in few states, the displacement of natives, with the related increase in internal migration flows, allows the effects of immigration to spread across the country in a 'bathtub' model fashion (Borjas 2003, 2005). The debate on exactly how 'substitutable' immigrants are to natives, however, is still open.

Borjas (1995a) finds that the gains from immigration for the USA are small, suggesting that immigrants are not sufficiently 'different' from the stock of natives. He suggests that an immigration policy to attract more skilled immigrants would substantially increase these gains. Conversely, Greenwood et al. (1996) found that recent immigrants have an adverse wage effect only on other relatively recent immigrants but not on natives or non-recent immigrants, suggesting that the level of 'substitutitability' with the latter is indeed quite low. Ottaviano and Peri (2005; 2008) go a step further by showing that overall immigration –even after categorizing immigrants according to education, experience and place of origin - generates a positive effect on the average wages of U.S.-born workers. A large number of studies have focused on the distinction between high- and low-skilled (or high- and low-education) immigrants, stating that the two groups have a different impact on the native population[1].

[1] For a more thorough discussion of how immigrants affect native-born wages see the reviews in Longhi et al. (2005; 2009).

Orrenius and Zavodny (2003), for instance, using occupation as a proxy for skills, show that the effect of immigrants is higher on low-skilled native wages than on high-skilled native wages, suggesting that immigrants are more substitutable with the former. Cortes (2008) finds a similar result though she finds that the impact of low skilled immigrants is higher on other low skilled recent immigrants than low skilled natives. Card (2005) disputes even this finding, contending that there is no convincing evidence that immigrants harm in any way the opportunities of less educated natives.

Despite recognising the importance of economic and labour market factors, other authors have pointed out that cultural differences might also play a role in the decision of natives to out-migrate. Natives might be reluctant to live in areas where there is a high concentration of immigrants, especially if they belong to a different ethnicity. This phenomenon has been generally labelled 'cultural avoidance', but terms such as 'white flight' or 'balkanization' (Frey 1994, 1995a, 1995b, 1996, 1999; Frey and Liaw 1998a, 1998b) have also been used when ethnic differences (and not only nationality) are assumed to play a major role.[2] Moreover, the immigrants themselves might also prefer to locate in areas where they can find people of similar origins, either because this decreases the information costs regarding job market opportunities (the 'beaten path' effect *à la* Greenwood 1970 and MacKinnon and Rogerson 1980) or simply because immigrants and long-settled foreigners might seek a sort of voluntary segregation to maintain "institutionally complete social and cultural communities and congregation with like-minded households" as suggested by the 'congregational thesis' (Ley, 2003).

If this is the case, then the 'stock' of foreign born population in an area should also be taken into account when studying the relationship between foreign immigration and domestic out-migration flows. However, this was not considered in the original work by Borjas et al. (1996) and Card (2001), or in later contributions with the only exception being Ali et al. (2010). Building on Ali et al.'s (2010) study, we not only control for the *total* stock of foreign born population, but we extend the model by including a more detailed breakdown of this stock in relation to their origin countries and the human capital characteristics of the immigrant population. As emphasized by both Borjas (1985, 1995b) and Card (2005), the geographical origin of immigrants is highly correlated with their skill characteristics and

[2]Cultural avoidance of immigrants is akin to the white flight in American cities to the suburbs in the 1960s and 1970s.

should therefore be taken into account. Thus, we can better evaluate what the types of immigrant human capital stocks are attractive to native migrants. Moreover, the geographical breakdown of the foreign born will shed light on whether 'cultural avoidance' is restricted to certain groups of immigrants, or a more generalised phenomenon.

The chapter is organised as follows. Section 2 introduces some of the most relevant literature on the topic with specific reference to the USA case. Section 3 describes the data and the methodology. Section 4 presents and discusses the results, while Section 5 provides some preliminary concluding remarks.

2. Background: international immigrants and internal migration in the USA

The claim that internal migrants respond negatively to an in-flow of foreign immigrants in the USA is controversial. Although Ley (2003) calls the negative relationship between foreign immigration and internal net-migration a 'not contested spatial regularity,' many authors have challenged this belief. Card and DiNardo (2000) Card (2001) and Kritz and Gurak (2001) find that there is little connection between foreign immigration and native out-migration. In fact, Card and DiNardo (2000) go as far as stating that an increase in the immigrant population in certain specific skill groups lead to a small *increase* in the native population of the same skill group, suggesting that they might be complementary rather than substitutes. Peri (2007), looking specifically at the case of California, finds that in the period 1960-2004 immigration did not produce a negative migratory response from natives.

These results, however, seem to be somewhat counterintuitive as areas serving as gateways for immigrants in the U.S. in recent decades have often experienced significant net domestic out-migration. Looking at Census data, from 1985 to 1990, among the high immigration states of California, New York, Texas, New Jersey, Illinois and Massachusetts, all but California experienced significant domestic out-migration, with California subsequently experiencing net domestic out-migration after 1990 (Frey, 1995a). From 2000 to 2009, four of the six states with the most immigrants (California, Texas, Florida, New York, Illinois and New Jersey) also had the most domestic out-migrants.

TABLE 1 ABOUT HERE

The state-to-state internal migration data collected by the U.S. Internal Revenue Service (IRS) show a similar picture to the Census data. Table 1 reports a ranking of 48 contiguous U.S. states plus the District of Columbia in terms of internal net migration (absolute numbers and percentage over resident population) for the period 1993-2007 and compares it with a ranking based on foreign immigration. The five states that are at the bottom of the ranking in terms of absolute internal migration numbers, with the exception of New Jersey, are in the top ten as net receiver of foreign immigrants, suggesting that there is an inverse relationship between the two flows. The picture, however, is less clear when looking at percentage rates, with only the District of Columbia and Massachusetts now showing this reverse relationship.

A scatter plot of all the 49 observations (Figure 1) shows that domestic net migration and foreign immigration (both as percentages of the resident population of the receiving State) are slightly negatively related (the correlation is -0.13 and the slope -2.57), as the 'bathtub' model *à la* Borjas would suggest. However, this relationship is not statistical significant (with a *t* statistics of only -0.91) and it is largely influenced by the presence of several outliers.

FIGURE 1 ABOUT HERE

Clearly Figure 1 represents a very rough measure of the relationship between the two variables and does not take into account all the other economic and non-economic factors that will be included in our final model.

It is also useful to look at the state distribution of the *stock* of foreign-born residents. Table 2 reports a similar ranking of that presented in Table 1, but this time based on the percentage of foreign-born residents over the state population. The first column reports the ranking based on the total number of foreign-born, while columns 2-5 report the rankings based on sub-groups of foreign-born by origin. What it is noticeable is that, despite having some similarities, the distribution of the different groups is quite different. California tops the rankings in terms of foreign-born from Asia and Latin Americans, while Europeans prefer states located on the East Coast (geographically closer to Europe). States such as Texas, New Mexico, and Arizona (all bordering Mexico) are preferred locations of Latin Americans, but not of the other sub-groups. Among the states with the lowest percentage of foreign-born population, Kentucky and Mississippi are the least favourite of Europeans but they also appear in the bottom ten for all other geographical sub-groups. The highest correlation is

between the location of Asians and Latin Americans (0.77). The location of Europeans is the most dissimilar with a correlation of 0.49 with Latin Americans and 0.54 with Asians.

TABLE 2 ABOUT HERE

3. Data and methodology

To build our database on internal state-to-state migration, we use data from the IRS based on personal income tax returns. This is a quite common approach as tax return data also form the core of U.S. Census Bureau estimates of domestic migration. The IRS data cover the period 1989-2007. However, the first four years are not fully comparable to the latter years and had to be excluded from the analysis. An 'internal migrant' is a tax filer whose address changed from one state to another between tax years. As not every internal U.S. migrant files tax returns, the final numbers on gross in- and out-flows are adjusted to take into account the number of exemptions on individual tax returns by assuming that unreported domestic moves are in proportion to the IRS migration estimates. Immigration figures are also derived from the IRS tax return data. In this case, a new foreign 'immigrant' is a tax filer who lived abroad in the past year. These numbers are also adjusted for exemptions. As described in Ali et al. (2010), these data are not perfect, but they are by far the best publically-available data for examining state-to-state migration flows.

Our dependent variable is state-to-state net migration. To measure these flows, we consider all the possible state-to-state net-migration pairs (e.g., Alabama has net-migration flows with the "48" other states). Denoting the gross in-migrants moving from state i to state j as M_{ij}, the net migration between i and j becomes (M_{ij}-M_{ji}). We then standardise these net flows by the average populations of the two states and multiply the final number by 1,000,000 to obtain more workable figures. Hence, our final dependent variable is represented by the following expression:

$$NET_{ij} = [(M_{ij} - M_{ji})/(P_i + P_j)*(1/2)]*1{,}000{,}000 \quad (1)$$

Obviously net migration from j to i is the same as net migration from i to j, just with the opposite sign, so they are excluded from the analysis[3]. This leaves us with a total number of observations equal to [(49*49)-49]/2 = 1,176. The advantage of using place-to-place flows is that it provides us with much richer information than simply studying the net-migration into an area, which is the approach taken by virtually every other study. Thus, our data set represents a significant advantage in assessing our question.

A drawback of our dataset is that it forces us to use states as the unit of analysis to avoid the problem of extensive number of zeros - or near absent flows- between pairs of counties (and there are disclosure issues as well). Because states are not "local" labour markets, they provide a lower-bound estimate of "displacement" because native residents may relocate within their given state in response to recent immigrants locating in their community (Borjas et al., 1996; Cortes, 2008). Borjas (2005, p.4) rightly points out that the effect of immigration on both wages and native migration rates depends intimately on the geographic definition of the labour market. However, while the effect on wages becomes larger as one expands the size of the market, the effect on native migration becomes smaller. In other words, the easier it is for natives to 'vote with their feet' the lower is the impact on wages. Since we only account for state-to-state movements, an effect at the state level would suggest an even stronger displacement response at the local level.

All explanatory variables are measured as difference between the destination and the origin (j-i). These differences are labelled with the symbol Δ in front of the variable name. We estimate three different models. The basic initial model (Model 1, equation 2a) includes economic variables (average wage and employment growth), an amenity index to control for

[3] In matrix form, putting the 49 states in alphabetical order starting from Alabama (AL) to Wyoming (WY), we are estimating the upper half (in bold and red) of the following net migration matrix (and excluding the diagonal which is 0 by definition):

$$\mathbf{NET_{ij}}=\begin{bmatrix} NET_{AL,AL} & \dots & \boldsymbol{NET_{AL,WY}} \\ \dots & \dots & \dots \\ NET_{WI,WY} & \dots & NET_{WY,WY} \end{bmatrix}$$

quality of life factors, the foreign immigration rates, and the stock of foreign-born residents to test the cultural avoidance hypothesis.

$$NET_{ij}= \beta_0 + \beta_1\Delta Wage+ \beta_2\Delta Employ + \beta_3\Delta Immigr + \beta_4\Delta Amenity+ \beta_5\Delta Foreign + e_{ij} \quad (2a)$$

However, in order to better assess whether cultural avoidance is restricted to certain groups of immigrants, we then implement a second model specification where we introduce a geographical breakdown of the stock of foreign-born residents (Model 2, equation 2b).

$$NET_{ij}= \beta_0 + \beta_1\Delta Wage+ \beta_2\Delta Employ + \beta_3\Delta Immigr + \beta_4\Delta Amenity+ \\ + \beta_5\Delta Europeans +\beta_6\Delta Asians + \beta_7\Delta Africans+ \beta_8\Delta Oceania+ \beta_9\Delta Latin +e_{ij} \quad (2b)$$

Finally, we introduce the human capital characteristics of foreign-born and two dissimilarity indexes (initially proposed by Gini, 1914 and more recently by Duncan and Duncan, 1955) measuring how immigrant education level differs from the level of the natives in the state (Model 3, equation 2c).

$$NET_{ij}= \beta_0 + \beta_1\Delta Wage+ \beta_2\Delta Employ + \beta_3\Delta Immigr + \beta_4\Delta Amenity + \beta_5\Delta Europeans + \\ +\beta_6\Delta Asians + \beta_7\Delta Africans+ \beta_8\Delta Oceania+ \beta_9\Delta Latin + \beta_{10}\Delta HighHKForeign+ \\ +\beta_{11}\Delta\ LowHKForeign +\beta_{12}\Delta DissHighHK + \beta_{13}\Delta\ DissLowHK+ e_{ij} \quad (2c)$$

The dissimilarity indexes are relevant in evaluating the level of substitution/complementary between natives and foreign-born. A description of these indexes, together with all the other explanatory variables, is reported in Table 3 below.

TABLE 3 ABOUT HERE

One of the main concerns with the estimation of Models 1-3 is the endogeneity between the dependent variable and some of the regressors. In our model, the three variables which might suffer from endogeneity are the immigration rate, employment growth and average wages as some positive economic shocks may jointly influence all of them. Following a common approach in the literature (Card, 1990; Card, 2000; Card and DiNardo, 2000), we use deep lags of past immigrant stocks as instruments for current immigrant flows (which assumes that long-established immigrant networks attract new immigrant flows and signal a more

welcoming atmosphere). In particular, following Partridge et al. (2008, 2009), we use the 1970 share of the population that is either foreign born, or have one foreign-born parent, and the 1980 population share that is foreign born, both provided by Census data from the Geolytics company. To account for the key role of Mexican immigrants, we also include as an instrument a dummy variable for states bordering Mexico.

Following a common methodology (Bartik, 1991; Blanchard and Katz, 1992), we use state 'industry mix employment growth rate' (INDMIX_GR) as an instrument for employment growth. The industry mix employment growth rate for a state '*s*' in the period [t, t+n] is defined as:

$$\text{INDMIX\_GR}_s = \sum_i S_{is}^t * EMP\_GR_{i,USA}^{t,t+n} \qquad (3)$$

Where S_{is}^t is the state employment share in industry *i* (one-digit SIC) in the initial year *t* and $EMP\_GR_{i,USA}^{t,t+n}$ is the growth rate in industry *i* for the whole USA in the period [t, t+n]. In our case we use the growth rate between 1993 and 2000 (n=7) to avoid simultaneity with the dependent variable. Equation (3) represents the hypothetical growth employment growth rate if the state's industries grew at the national average over the sample period. Changes in *national industry* demand are the exogenous shifters.

Finally, we create an instrument for wage levels in a similar fashion by defining a 'wage mix' (WAGMIX) variable as:

$$\text{WAGMIX}_s = \sum_i S_{is}^t * W_{i,USA}^t \qquad (4)$$

Where S_{is}^t has the same interpretation as before and $W_{i,USA}^t$ is the national wage level in industry *i* in year *t* (here t=1993), Analogous to Equation (3), Equation (4) constitutes the hypothetical state wage rate if each of its industries paid the corresponding national average wage. National wage differences across industries then are the exogenous shifters. The instrumental variables estimations are performed by using the *ivreg2* command in Stata (Baum et. al, 2007).

4. Empirical Results and discussion

The first set of results (Models 1 and 2) are presented in Tables 4a. The first and third columns report the OLS results, while columns two and four report the 2SLS results when the three endogenous variables are instrumented for by the five instruments described in the previous section.

The results of the base model (Model 1) are in line with theoretical expectations. The OLS estimates show that states with a high level of amenities experience greater internal net in-migration and so do states with higher employment growth. In addition, the negative and significant relationship between stock of foreign-born and domestic net-migration is consistent with the cultural avoidance theory. However, the positive coefficient on foreign immigration, even though only significant at 10% level, casts some doubt on the Borjas 'bathtub' model and seems to support the findings of Card and DiNardo (2000). Yet, if we compare the OLS results with the 2SLS, we notice that this latter result does not hold, while the other results are robust. Moreover, the Wu-Hausman F-test suggests that we have an endogeneity problem, further confirming that the 2SLS are preferred.

When we split the foreign-born population into sub-groups (Model 2, Table 2a), some interesting results start emerging. Although the breakdown by geographical origin does not affect the results on the amenity variable and employment growth, the coefficient on the immigration - after controlling for endogeneity - becomes negative and statistically significant, confirming the expectations of Borjas (2003, 2005).[4] Furthermore, the cultural avoidance hypothesis seems to hold mainly for certain sub-groups of foreign-born (Africans and Latin Americans) but not for others (Europeans and Asians). These results, however, might be due to other characteristics of foreign-born, such as their level of human capital and how it relates to the natives. In order to control for this, we add four human-capital related variables in the final model (Model 3).

The results of Model 3 (equation 2c) are presented in Table 2b. The Cragg and Donald (1993) *F*-statistic in the form proposed by Stock and Yogo (2005) is also reported at the bottom of the table and suggests that our instruments are not weak (i.e. the endogenous regressors are significantly correlated with the excluded instruments). The Sargan's test (not

[4] As before, the Wu-Hausman F-test suggests that the OLS estimates suffer from endogeneity and hence the 2SLS estimates are superior.

shown) also indicates that our instruments are uncorrelated with the error term (with a p-value of 0.085) suggesting that the equation is correctly specified (Baum, 2006).

By looking at the results of the 2SLS (third column), we notice some interesting patterns. As in Model 2, cultural avoidance seems somewhat 'selective'. The coefficients on foreign born African and Latin American shares are negative and highly significant, even after including extra control variables for human capital levels. In fact, the coefficient on Latin Americans is now more significant than before (z= -3.23). The coefficient on Asians becomes insignificant, while the one on Europeans/Canadians is still positive and significant, although not as significant as in Model 2.

Once we include the human capital of the foreign born population, we find a positive relationship between the percentage of highly-educated foreign born (i.e. with at least a Bachelor degree) and net domestic migration and, maybe more surprisingly, we also find a positive association between the percentage of very low-educated foreign born and net domestic migration (i.e. with less than a high school diploma). These results combined suggest that internal domestic migrants are more complementary to these two groups at the tails of the human capital spectrum, rather than foreign-born with an 'average' human capital (i.e. with a high school diploma but who did not complete higher education). The finding that high-skill immigrants are attractive of more domestic migration is consistent with those who argue that attracting more high-skilled immigrants (and high skilled domestics) creates other positive spillovers such as growth and innovation (Hunt and Gauthier-Loiselle, 2008; Faggian and McCann, 2009), which may set off a virtuous circle regional growth. In fact, though Ottaviano and Peri (2005, 2008) were concerned with *contemporaneous* flows of immigrants, our findings regarding the complementarity between natives and the *stocks* of highly and lowly skilled immigrants are similar. Finally, the dissimilarity indexes, measuring how the qualifications of foreign born differ from natives, are not significant in the 2SLS model (even though they are in the OLS model)[5].

The amenity variable is consistently positive and significant in all models and remains highly significant in Model 3 (z=3.61) showing that one of the most important determinants of

[5]This is not due to multicollinearity as the four human capital variables display a very low correlation and a VIF well below the threshold of 10.

internal migration in the USA is indeed the quality of life offered by the destination. This is consistent with other findings from the USA (Ferguson, et al., 2007; Partridge, 2010) but also elsewhere (Faggian and Royuela, 2010) and relates to the initial U.S. findings by Graves (1976, 1980). As far as the labour market variables are concerned, after controlling for the human capital characteristics of the foreign-born population, employment growth is no longer statistically significant, while average wages are positive and highly significant (z=4.30).[6]

Probably the most noticeable result relates to the immigration rate variable. When our model is fully-specified and incorporates all the controls, domestic internal migration becomes significantly (z=-2.91) negatively related to foreign immigration rate. This has two implications. First, this result supports Borjas's hypothesis rather than Card's or Ottaviano and Peri's findings. Second, this result seems even stronger given that it holds even after controlling for the *stock* of foreign-born people in the state, as it suggests that domestic migration reacts negatively to both contemporaneous immigration and also the stock of certain groups of past immigrants. However, we caution that it is not appropriate to fully assess the hypotheses of Borjas, Card, Ottaviano and Peri in our setting because they considered aggregate net migration, not state-to-state net migration as we do.

5. Conclusions

The paper analysed US state-to-state migration patterns using IRS data for the period 1993-2007, in an effort to investigate the relationship between foreign immigration and domestic internal migration. We extend the immigration literature by assessing whether cultural avoidance plays a role in internal migration decisions. In particular, we assess whether the origin countries of the immigrants matter to domestic migration and we then compare this to the possibility that it is really the human capital stock of the immigrants that matters—in which the origin country and human capital stock are highly related. Our empirical modelling pays close attention to endogeneity of immigration and initial state economic conditions.

Our final results indicate that internal migration, as expected, reacts positively to more favourable labour market conditions and local amenities, but also that indeed domestic migrants respond negatively to foreign immigration flows, as predicted by the migration

[6]Because amenities are a key driver for faster employment growth, this likely underlies why amenities are significant, but employment is not in Model 3.

'bathtub' model *à la* Borjas (2003, 2005). This might be related to non-economic factors linked to the 'cultural avoidance' theory.

In order to test this hypothesis further, we included in the analysis the stock of immigrants, proxied by the share of foreign-born population. We found that domestic in-migration is discouraged by the presence of a greater stock of foreign-born. However, a breakdown of the foreign-born population by geographical origin reveals that this 'cultural avoidance' is not a universal phenomenon addressed to all foreign-born, but rather it is 'selective' and targeted mainly towards Latin Americans and Africans. Controlling for the human capital characteristics of the foreign-born does not alter this result.

Among the policy implications of the results is that U.S. immigration policy could pay more attention to the human capital skills of the immigrants when setting limitations on immigration flows. In particular, the results suggest that while domestic residents may not wish to be near certain immigrant stocks (for which there is no clear policy "solution" aside from overt discrimination based on origin), such factors are offset by a clear preference for states with immigrants who have complementary labour market skills. Indeed, at the state and local levels, these results are also suggestive that attracting immigrants at the tails of the skills distribution would be conducive to local growth.

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Table 1: Comparison between net internal migration and net foreign migration by State

Ranking	Net Internal Migration 93-07 (abs. numb.)	Net Internal Migration 93-07 (% tot. pop. 93)	Net Foreign Immigr. 93-07 (abs. numb.)	Net Foreign Immigr. 93-07 (% tot. pop. 93)
1	**FLORIDA** (1,776,213)	**NEVADA** (39.50%)	CALIFORNIA (152,664)	DISTRICT OF COLUMBIA (3.05%)
2	**ARIZONA** (864,621)	**ARIZONA** (21.26%)	**TEXAS** (135,171)	**GEORGIA** (1.89%)
3	**GEORGIA** (808,480)	IDAHO (14.26%)	GEORGIA (132,464)	**VIRGINIA** (1.63%)
4	TEXAS (766,978)	**FLORIDA** (12.75%)	**VIRGINIA** (106,662)	**MARYLAND** (0.95%)
5	**NORTH CAROLINA** (766,045)	**GEORGIA** (11.58%)	FLORIDA (101,712)	NEVADA (0.94%)
6	**NEVADA** (557,491)	**NORTH CAROLINA** (10.87%)	NEW YORK (77,734)	WASHINGTON (0.85%)
7	**TENNESSEE** (405,479)	**COLORADO** (9.92%)	ILLINOIS (52,888)	COLORADO (0.82%)
8	**COLORADO** (358,475)	**SOUTH CAROLINA** (7.92%)	OHIO (48,762)	ARIZONA (0.78%)
9	**SOUTH CAROLINA** (290,058)	**TENNESSEE** (7.89%)	**MARYLAND** (47,987)	**MASSACHUSETTS** (0.76%)
10	WASHINGTON (242,701)	DELAWARE (7.88%)	**MASSACHUSETTS** (46,108)	**TEXAS** (0.74%)
…				
40	PENNSYLVANIA (-172,449)	**CONNECTICUT** (-5.66%)	**WEST VIRGINIA** (4,961)	MICHIGAN (0.36%)
41	**CONNECTICUT** (-187,161)	RHODE ISLAND (-5.76%)	IDAHO (4,534)	MISSISSIPPI (0.33%)
42	**LOUISIANA** (-323,605)	**NEW JERSEY** (-6.05%)	NORTH DAKOTA (4,392)	**MAINE** (0.32%)
43	MICHIGAN (-360,645)	**MASSACHUSETTS** (-6.34%)	NEW HAMPSHIRE (4,117)	OREGON (0.31%)
44	OHIO (-372,096)	**ILLINOIS** (-7.14%)	**MAINE** (3,947)	SOUTH CAROLINA (0.30%)
45	**MASSACHUSETTS** (-384,091)	**LOUISIANA** (-7.50%)	DELAWARE (3,184)	WISCONSIN (0.28%)
46	**NEW JERSEY** (-481,346)	**CALIFORNIA** (-7.78%)	VERMONT (2,833)	**MONTANA** (0.27%)
47	**ILLINOIS** (-843,196)	NORTH DAKOTA (-8.53%)	SOUTH DAKOTA (2,661)	**WEST VIRGINIA** (0.27%)
48	**NEW YORK** (-2,199,939)	**NEW YORK** (-11.97%)	**MONTANA** (2,323)	NEW JESRSEY (0.18%)
49	**CALIFORNIA** (-2,433,779)	DISTRICT OF COLUMBIA (-24.98%)	WYOMING (1,717)	CONNECTICUT (0.16%)

Source: Tabulations based on IRS migration data

Figure 1: Internal migration vs. foreign immigration (continental USA)

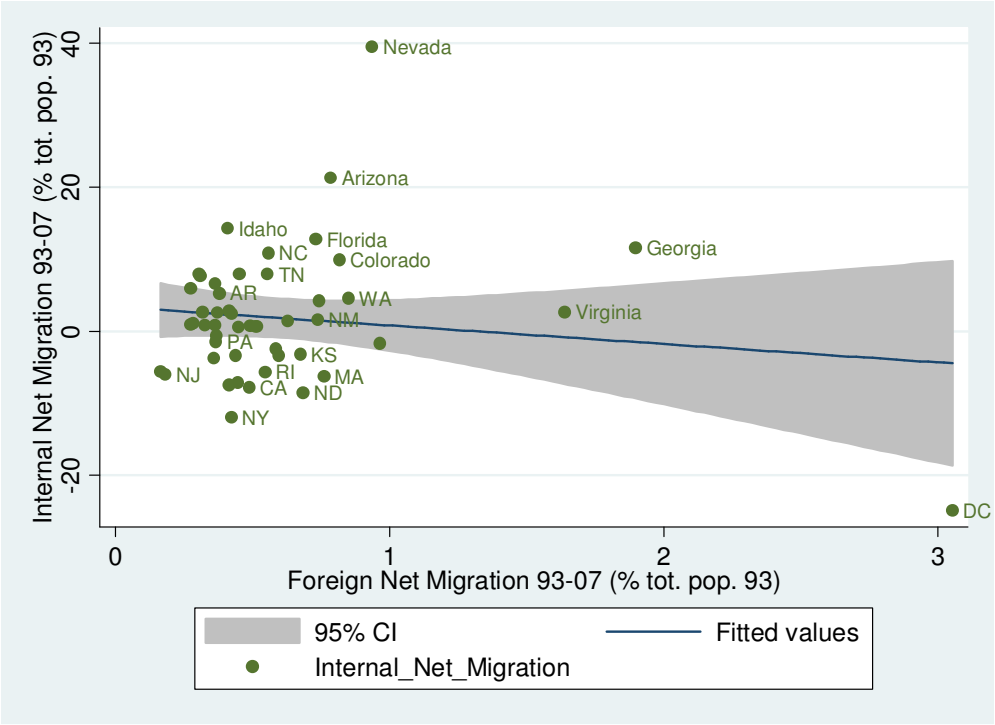

Table 2: Foreign born population (% tot. pop.): total and by origin

Ranking	All Foreign Born 90 (% tot. pop.)	*European Foreign Born 90 (% tot. pop.)*	*Latin American For. Born 90 (% tot. pop.)*	*Asian Foreign Born 90 (% tot. pop.)*	*African Foreign Born 90 (% tot. pop.)*
1	**CALIFORNIA** (20.81%)	***NEW YORK*** *(4.68%)*	***CALIFORNIA*** *(10.95%)*	***CALIFORNIA*** *(6.72%)*	***DISTRICT OF COLUMBIA (1.08%)***
2	**NEW YORK** (14.97%)	***NEW JERSEY*** *(4.41%)*	*FLORIDA (8.30%)*	***NEW YORK*** *(3.09%)*	*RHODE ISLAND (0.06%)*
3	**FLORIDA** (12.28%)	*RHODE ISLAND (4.33%)*	***NEW YORK*** *(6.53%)*	***NEW JERSEY*** *(2.79%)*	*MARYLAND (0.05%)*
4	**NEW JERSEY** (11.96%)	*CONNECTICUT (4.33%)*	*TEXAS (6.22%)*	*WASHINGTON (2.59%)*	*MASSACHUSETTS (0.04%)*
5	MASSACHUSETTS (9.18%)	*MASSACHUSETTS (4.02%)*	***DISTRICT OF COLUMBIA*** *(4.48%)*	*MARYLAND (2.32%)*	***NEW JERSEY*** *(0.03%)*
6	**DISTRICT OF COLUMBIA** (9.11%)	*ILLINOIS (2.69%)*	*ARIZONA (4.43%)*	*VIRGINIA (2.17%)*	***NEW YORK*** *(0.03%)*
7	RHODE ISLAND (9.07%)	*FLORIDA (2.38%)*	***NEW JERSEY*** *(4.20%)*	*NEVADA (2.16%)*	***CALIFORNIA*** *(0.02%)*
8	TEXAS (8.65%)	***CALIFORNIA*** *(2.26%)*	*NEVADA (3.92%)*	*ILLINOIS (1.97%)*	*VIRGINIA (0.02%)*
9	NEVADA (8.44%)	***DISTRICT OF COLUMBIA*** *(1.73%)*	*NEW MEXICO (3.56%)*	*MASSACHUSETTS (1.94%)*	*GEORGIA (0.02%)*
10	CONNECTICUT (8.16%)	*MICHIGAN (1.64%)*	*ILLINOIS (3.14%)*	***DISTRICT OF COLUMBIA*** *(1.61%)*	*TEXAS (0.01%)*
…					
40	IOWA (0.15%)	*IOWA (0.50%)*	*TENNESSEE (1.41%)*	*MAINE (0.39%)*	*VERMONT (0.00295%)*
41	NORTH DAKOTA (0.14%)	*SOUTH DAKOTA (0.48%)*	*ALABAMA (1.34%)*	*ARKANSAS (0.38%)*	*ARKANSAS (0.00277%)*
42	SOUTH CAROLINA (0.14%)	*OKLAHOMA (0.43%)*	*VERMONT (1.33%)*	***KENTUCKY*** *(0.36%)*	***KENTUCKY*** *(0.00273%)*
43	TENNESSEE (0.12%)	*WEST VIRGINIA (0.39%)*	*MONTANA (1.20%)*	*VERMONT (0.35%)*	*WEST VIRGINIA (0.00272%)*
44	SOUTH DAKOTA (0.11%)	*LOUISIANA (0.39%)*	***KENTUCKY*** *(1.14%)*	***MISSISSIPPI*** *(0.35%)*	***MISSISSIPPI*** *(0.00258%)*
45	ALABAMA (0.10%)	*TENNESSEE (0.36%)*	*MAINE (1.12%)*	*NORTH DAKOTA (0.33%)*	*IDAHO (0.00233%)*
46	ARKANSAS (0.10%)	*ALABAMA (0.35%)*	***MISSISSIPPI*** *(0.10%)*	*SOUTH DAKOTA (0.32%)*	*WYOMING (0.00205%)*
47	**KENTUCKY** (0.09%)	*ARKANSAS (0.33%)*	*SOUTH DAKOTA (0.98%)*	*WYOMING (0.32%)*	*MAINE (0.00195%)*
48	WEST VIRGINIA (0.08%)	***KENTUCKY*** *(0.32%)*	*NORTH DAKOTA (0.74%)*	*WEST VIRGINIA (0.31%)*	*NORTH DAKOTA (0.00189%)*
49	**MISSISSIPPI** (0.07%)	***MISSISSIPPI*** *(0.22%)*	*WEST VIRGINIA (0.67%)*	*MONTANA (0.29%)*	*MONTANA (0.00099%)*

Table 3: Description of explanatory variables

Variable Name	Description	Source
Δ Foreign	Difference in total foreign-born (% over total population) in the year 1990	Migration Policy Institute (MIP) Data Hub *(www.migrationinformation.org/datahub)*
Δ Europeans	Difference in European and Canadian foreign-born (% over total population) in the year 1990	
Δ Asians	Difference in Asian foreign-born (% over total population) in the year 1990	
Δ Africans	Difference in African foreign-born (% over total population) in the year 1990	
Δ Oceania	Difference in foreign-born from Oceania (% over total population) in the year 1990	
Δ Latin	Difference in Latin-American foreign-born (% over total population) in the year 1990	
Δ HighHKForeign	Difference in the % of foreign-born population with at least a Bachelor degree (1990)	
Δ LowHKForeign	Difference in the % of foreign-born with less than a Diploma (1990)	
Δ DissHighHK	| % foreign born with at least a Bachelor degree - % natives with at least a Bachelor degree |	Our elaborations on Migration Policy Institute (MIP) Data
Δ DissLowHK	| % foreign born with less than a Diploma - % natives with less than a Diploma |	
Δ Amenity	Difference in 'amenity rank' (1=lowest, 7=highest)	USDA
Δ Wage	Difference in the Ln Average Wage (1993)	Bureau of Economic Analysis *(www.bea.gov).*
Δ Employ	Difference in employment growth (total jobs) for the period 1993-2007	
Δ Immigr	Difference in foreign immigrants (% over population) for the period 1993-2007	IRS

Table 4a: Results of Model 1 and 2

	Model 1		Model 2	
Independent Variables	**OLS**	**IV**	**OLS**	**IV**
Cultural Avoidance				
Δ Foreign	-8.61*** (-4.74)	-12.05*** (-4.41)	-	-
a. Origin of foreigners				
Δ Europeans	-	-	18.97*** (2.96)	72.11*** (5.54)
Δ Asians	-	-	39.63*** (3.90)	59.04*** (7.30)
Δ Africans	-	-	-2305.65 (-0.47)	-20284.4*** (-2.60)
Δ Oceania	-	-	-1369.37 (-0.18)	903.37 (0.16)
Δ Latin	-	-	-2.74 (-0.65)	-6.16** (-1.96)
b. Human Capital of foreigners				
	- -	- -	- -	- -
c. Dissimilarity Indexes				
	- -	- -	- -	- -
Other Controls				
Δ Amenity	13.73** (2.39)	18.52** (2.11)	13.84** (2.62)	22.05*** (2.85)
Endogenous				
Δ Wage	-25.89 (-0.50)	118.13 (1.32)	65.51 (1.38)	520.11*** (4.33)
Δ Employ	195.57*** (4.28)	195.94*** (3.74)	173.73*** (3.33)	172.02*** (3.24)
Δ Immigr	0.037* (1.68)	-0.005 (-0.31)	0.007 (0.20)	-0.178*** (-3.66)
Diagnostic Tests				
R^2/Cent.R^2	0.127	0.115	0.147	0.075
Wu-Hausman F-test (endogeneity regressors)	N/A	18.35 (P=0.0004)	N/A	26.48 (P=0.0000)
Cragg-Donald Wald F statistic (weak identification)	N/A	53.11	N/A	47.77
Anderson-Rubin Wald (weak-instrument-robust inference)	N/A	36.69 (P=0.0000)	N/A	48.03 (P=0.0000)

Table 4b: Results of Model 3

	Model 3	
Independent Variables	**OLS**	**IV**
Cultural Avoidance		
a. Origin of foreigners		
Δ Europeans	4.81	**35.32****
	(0.42)	**(2.35)**
Δ Asians	37.55***	**11.32**
	(4.26)	**(0.80)**
Δ Africans	1574.24	**-31604.78*****
	(0.34)	**(-2.96)**
Δ Oceania	333.35	**4975.76**
	(0.04)	**(0.84)**
Δ Latin	-4.62	**-53.08*****
	(-0.50)	**(-3.23)**
b. Human Capital of foreigners		
Δ HighHKForeign	9.99	**125.36*****
	(0.52)	**(3.52)**
Δ LowHKForeign	-3.25	**40.69****
	(-0.36)	**(2.14)**
c. Dissimilarity with Natives		
Δ DissHighHK	-2.35**	**3.02***
	(-2.55)	**(1.92)**
Δ DissLowHK	1.63**	**1.04**
	(2.48)	**(1.02)**
Other Controls		
Δ Amenity	15.97**	**31.24*****
	(2.70)	**(3.61)**
Endogenous		
Δ Wage	25.37	**701.73*****
	(0.35)	**(4.30)**
Δ Employ	205.08***	**6.46**
	(3.44)	**(0.008)**
Δ Immigr	0.031	**-0.180*****
	(0.81)	**(-2.91)**
Diagnostic Tests		
R^2/Cent.R^2	0.161	**0.040**
Wu-Hausman F-test (endogeneity regressors)	N/A	**26.95** **(P=0.0004)**
Cragg-Donald Wald F statistic (weak identification)	N/A	**27.71**
Anderson-Rubin Wald (weak-instrument-robust inference)	N/A	40.58 (P=0.0000)