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Tiago Freire and Xiaoye Li

Business School, Xi'an Jiaotong - Liverpool University, Department  
of Economics, National University of Singapore

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# How Immigration Reduced Social Capital in the US: 2005-2011

**Tiago Freire** \*

Business School

Xi'an Jiaotong - Liverpool University

**Xiaoye Li** †

Department of Economics

National University of Singapore

February 22, 2013

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\*Address: No.111 Ren'ai Road, Suzhou, Dushu Lake Higher Education Town, Suzhou Industrial Park, Jiangsu 215123, P.R.C., telephone: +86-512-81880450, e-mail: *tiago.freire@xjtlu.edu.cn*.

†Address: 1 Arts Link, Singapore 117570, telephone: +65-6516-6027, e-mail: *a0068443@nus.edu.sg*. The authors are thankful to Haoming Liu and Jingping Li and other participants at the North-American Regional Science Conference and seminars at the National University of Singapore and University of Nottingham for comments and advice.

## **Abstract**

Putnam (1995)'s seminal work was one of the first to describe the decline of social capital in the US after the 1960s, a period that saw a large increase in the flow of immigrants into the US. Using the Volunteer Supplement of the September Sample of the Current Population Survey (CPS) between 2004 and 2011, we examine the relationship between immigration and social capital in the US, measured by membership of organizations, volunteering and hours volunteered. To the best of our knowledge, this is the first paper to address this question. Once we correct for immigrants' self-selection to different destinations using a supply-push instrumental variable, we find that a one standard deviation increase in the number of immigrants decreases volunteering by 0.08 to 0.12 standard deviations, or that the 8.7 million legal immigrants who entered the US between 2005 and 2011 reduced the probability Americans volunteered between 27.8% and 35.7%. From our robustness checks we argue that the reduction in volunteering by natives is driven by the fact that new immigrants have a lower social capital, reducing the benefits of volunteering. Our results have important implications for public policy. We show that migrants' social capital has an impact on receiving communities. Therefore immigrants' social capital (such as having relatives living at the receiving community) should be taken into consideration. Future research should focus on what is the optimal weight to give to the presence of family members versus, for instance, educational level of the immigrants.

**Keywords:** Migration; Social Capital; Volunteer; Race

**JEL Classification Numbers:** J61, J79, Z13.

# 1 Introduction

In his seminal work Putnam (1995) describes the decline of social capital in the US, where membership of organizations like the PTA and Red Cross dropped by 25% between the 1960s and the 1990s. This was also a period that saw a large amount of immigration; the share of foreign-born rose from 5.4% in 1960 to 9.3% in 1996 (Borjas *et al.* (1997)). Is there a causal relationship between these two trends? How does immigration contribute to the reduction in social capital in the US?

Putnam (1995) proposes several hypotheses for the decline of social capital and looks at correlations in the data but fails to show causality, as pointed out by Durlauf (2002b) and Durlauf (2002a). Several papers have since re-examined these hypotheses. For instance, Goldin & Katz (1999) show that the increase in education was correlated with the increase in social capital between 1910 and 1940, while DiPasquale & Glaeser (1999) demonstrate how expected mobility reduces social capital, as individuals who own their homes are more likely to participate in local activities. Costa & Kahn (2001) argue that the drop in social capital is driven, not only by the increase in inequality and the heterogeneity of communities, but also by the increase in women's labor force participation. Norris & Inglehart (2005) point out that part of the reduction in women's social capital is driven by the fact that women participate in different social activities from men, and Alesina & LaFerrara (2000) find that social participation is lower in neighborhoods where inequality is higher and there is larger racial and ethnic fragmentation. Finally, Olken (2009) finds that the introduction of television in Indonesia led to a reduction in individuals' participation in social activities. These results are reconciled in an individual utility maximization model developed by Glaeser *et al.* (2002), where individual social capital investment increases with the opportunity cost of time, among occupations with higher returns to social skills, and in communities where aggregate social capital is higher, while it decreases with age and relocation to a different community. More recent papers, such as Bellows & Miguel (2009), have proposed other reasons for the accumulation of social capital. In particular, Bellows & Miguel (2009) argue that individuals affected by the 1991-2002 armed conflict in Sierra Leone increased their investment in social capital. When it comes to the relationship between immigration and social capital, previous researchers have looked at the incentives that lead

immigrants to volunteer (Kawashima-Ginsberg & Kirby (2009)) and the benefits of volunteering for immigrants (Handy & Greenspan (2009)). To the best of our knowledge, this is the first paper to study the impact of immigration on social capital (in particular, volunteering) in the receiving communities.

We use the September sample of the Current Population Survey (CPS) between 2004 and 2011, providing information on membership of social organizations, volunteering and volunteer hours, to estimate how an increase in the number of immigrants reported in the CPS affects social capital investment. Our reduced form results at the state, metropolitan and individual levels demonstrate that immigration has a negative influence on all measures of social capital<sup>1</sup>. Furthermore, we argue that this relationship is causal. One of the major issues is the possibility of reverse causality, namely that more individuals are likely to migrate to regions where there was an increase in social capital, in response to changes in their social networks (similar to Munshi (2003)). We correct for this by using a supply push instrumental variable commonly used in immigration literature. The supply push instrumental variable corrects for immigrants' response to changes in conditions at the destination. It does this by keeping constant the location pattern of immigrants, in a similar fashion to Card (2001), Peri (2011) and Wozniak & Murray (2012). Our instrumental variable estimates show that areas which see an increase in the number of immigrants by one million see a reduction in the probability of volunteering by 0.32% to 0.41%.

The existing theory of social capital allows for several mechanisms that could be behind this correlation. For example, immigrants could have a lower propensity to volunteer (Kawashima-Ginsberg & Kirby (2009)) or it could be that the lower aggregate social capital in the community leads to a lower investment in social capital (Glaeser *et al.* (2002)). The impact could also be indirect, through changes in labor markets, such as lower wages (Glaeser *et al.* (2002)). While this paper is not able to identify the exact mechanism behind the relationship between immigration and social capital, our robustness checks seem to indicate that the reduction in individual investment in social capital can be attributed to the reduction in aggregate social capital in the communities where immigrants settle, consistent with the model by Glaeser *et al.* (2002).

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<sup>1</sup>Although this is not always statistically significant.

Given the importance of social capital to the acquisition of skills and human capital (Loury (1977)), economic growth (Knack & Keefer (1997)), government efficiency and corruption (LaPorta *et al.* (1997)) and financial development (Guiso *et al.* (2000)), our results provide valuable insights for public policy. They show that immigration has a negative impact on social capital and therefore should be taken into consideration in immigration laws. In particular, future research should focus on the trade-off between the benefits from the immigration of high skilled workers and the costs from the reduction in social capital.

This paper is organized as follows. In Section 2 we describe the data we use, in Section 3 we describe our empirical strategy, and in Section 4 we conclude.

## **2 Social Capital and Immigration in the US between 2004 and 2011**

Social capital is an elaborate concept and its definition is quite complicated (see Guiso *et al.* (2011) for a discussion). Previous work has focused on two proxies for social capital. Some studies use trust, as measured by questions such as "Would you say that most people can be trusted?" for a proxy for social capital. as pointed out by Glaeser *et al.* (2002) and Glaeser *et al.* (2000) the conclusions from these studies are that people who report being more trusting do not show more trust in standard trust games, putting into question the validity of trust as a proxy for social capital. A second proxy, used by Putnam (2000) for instance, is organization membership. However, studies use organizational membership to represent the stock of social capital, while others use it as a proxy for the flow of social capital. We build on this last literature by using organization membership measures from the CPS, as a proxy for the stock of social capital. For a proxy of social capital we use volunteering measures reported in the CPS (a dummy for whether an individual volunteered in at least one organization and total number of hours individuals volunteered) as a proxy for the flow of social capital. As pointed out by Putnam (2000) and Beyerlein & Hipp (2006), active participation in communities is more important to the construction of social capital than group membership. In particular, Bekkers (2005) argues that volunteering is an important form of

community participation. Our results for these two proxies of social capital are consistent.

According to the CPS September Volunteer Supplement, the percentage of people between the ages of 16 and 65 who reported volunteering for organizations dropped from 3.4% in 2005 to 3% in 2011<sup>2</sup> while, for those who did report volunteering, the total number of hours volunteered dropped from 3.8 hours per week in 2005 to 0.96 hours per week in 2011 (averages for this time period are reported in Table 1). Compared with other surveys, the CPS reports much lower values. For instance, according to Costa & Kahn (2001), between 1974 and 1998 the fraction of people between the ages of 16 and 54 who had volunteered in the previous year stood at 53% according to the DDB Needham Life Style Survey and the Gallup Giving and Volunteering in the United States and at 6% in the NPD Group Time Study Data. One of the reasons for the differences in volunteering figures across the surveys is due to respondents' self-selection. Abraham *et al.* (2008) find that CPS respondents who take part in the American Time Use Survey (ATUS) are much more likely to report volunteering than the individuals in the general CPS September sample.

While only 49.4% of the respondents in our sample are women, they account for 63.3% of those who report volunteering for organizations, consistent with Norris & Inglehart (2005). Volunteers in our sample are also more likely to be married (50.7% of the individuals in our overall sample are married, while 63.7% of our volunteers are married, as reported in Table 1 and Table 2) and to have children (30.2% of individuals in our sample have children, while 61.8% of volunteers have children).

We find that volunteers have a similar racial distribution to that of the overall population (68.42% of the population is white, while 73.57% of the volunteers are white, while the corresponding figures are 12.58% and 9.78% respectively for Hispanics, 10.70% and 9.5% respectively for African Americans, and 4.67% and 3.1% respectively for Asians as you see in Table 1 and Table 2). Finally, individuals with higher levels of education are more likely to volunteer (while only 30.6% of individuals in our sample have a bachelor's degree, 44.29% of volunteers have one). Note that the number of people who report their income is very low (6.85% of the people in our sample). This is a known problem

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<sup>2</sup>The CPS started collecting data for the Volunteer Supplement in 2003 but, due to changes in the questions about race and ethnicity in 2005, the data for 2004 and 2003 have been dropped from our sample.

with the CPS September sample.

The CPS has been used extensively in the migration literature. Immigrants are defined as foreign-born individuals in the survey, in a manner similar to Borjas *et al.* (1997) and Ottaviano & Peri (2008). In our sample of people between the ages of 16 and 65, the fraction who were foreign-born rose from 15.9% in 2005 to 17.4% in 2011 (average over our sample period is 15.7% as reported in Table 1). We also find that immigrants in the CPS have a lower propensity to be members of an organization (as you can see in Table ??) yet, unlike in the general population, there has been a small increase over time, from 2% in 2005 to 2.6% in 2011. The major difference between migrants and the overall population lies in their racial composition, with 21.1% of immigrants being white, 45.3% Hispanic, 8.04% are of African origin and 22.5% of Asian origin (Table ??). Immigrants are similar to our overall sample in terms of the remaining characteristics (education, age, etc). The correlation between the fraction of white people volunteering in organizations and the fraction of white foreign-born people over our sample period is presented in figure 1. This shows a negative relationship between immigration and membership of organizations across states (and in Washington DC) between 2005 and 2011. In our analysis in Section 3 is designed to show that this relationship is causal.

We conduct our analysis at three levels: Metropolitan Statistical Area (MSA), state and individual. Our state sample contains 50 states and Washington DC; the MSA sample contains 135 cities. We use information about the county of residence drawn from the CPS in order to identify the MSA. The individual-level sample is used to calculate income inequality, measured by the Gini coefficient, and racial fractionalization, using the same measure as Costa & Kahn (2001),  $frac_i = 1 - \sum_k s_{ki}^2$ , where  $k$  is the race category (White, Hispanic, African American, Asian and Other) and  $s_{ik}$  is the share of race  $k$  in either state or metropolitan area  $i$ . While the values of the Gini coefficient in our sample are consistent with those reported in Costa & Kahn (2001), the racial fractionalization is twice as large in our sample, possibly because we treat White and Hispanic as two different racial groups.



### 3 Empirical Strategy

In this paper we focus on two reduced-form relationships between immigrants and social capital. The first reduced form describes the relationship between the stock of social capital and the stock of immigrants (foreign-born people) as follows:

$$SC_{it} = \alpha + \beta_1 Immig_{it} + \beta_2 X_{it} + \gamma_i + \delta_t + \varepsilon_{it} \quad (1)$$

where  $SC_{it}$  is the stock of social capital, proxied by organization membership recorded in the CPS September sample, in a particular area  $i$  in a particular year  $t$ .  $Immig_{it}$  is the stock of immigrants in the same area and year,  $X_{it}$  is a set of controls for area characteristics (income inequality and racial fragmentation for the state and MSA-level regressions) and individual characteristics (for the individual-level regressions),  $\gamma_i$  are area fixed effects (either state or MSA, depending on the specification) and  $\delta_t$  are year dummy variables. In essence, we are comparing states (or MSAs or individuals living in states) receiving more immigrants (i.e. foreign-born individuals) in the last year (treated group) with those that received fewer immigrants, before and after treatment (control group). Since all areas receive immigrants, our estimates of  $\beta_1$  can be interpreted as local average treatment effects (LATE).

The second reduced-form relationship is between the flow of social capital and the flow of immigrants (change in the number of foreign-born individuals):

$$\Delta SC_{it} = \alpha + \beta_1 \Delta Immig_{it} + \beta_2 X_{it} + \gamma_i + \delta_t + \epsilon_{it} \quad (2)$$

where  $\Delta SC_{it}$  is the flow of social capital (proxied by volunteering and hours volunteered) in area  $i$  in year  $t$  and  $\Delta Immig_{it}$  is the change in the number of foreign-born individuals in area  $i$  in year  $t$ . Furthermore,  $X_{it}$ ,  $\gamma_i$  and  $\delta_t$  are defined as in equation 1. In this random growth model, we are trying to determine whether the areas where immigration increases the fastest (or the slowest) are also the areas where investment in social capital decreases (or increases) the most. We are comparing the

growth of social capital in states (or MSAs) subject to different (and assumed random) increases in the number of immigrants (treatment), in different time periods. Therefore, as before, we can interpret our estimates of  $\beta_1$  as LATE.

We address potential bias in our estimates of  $\beta_1$  by constructing a supply push instrument in Section ???. Our results are consistent with the presence of reverse causality (i.e. individuals move to areas where social capital is higher).

There are potentially several mechanisms through which immigration may be correlated with social capital. There are four mechanisms which are often cited in the literature. Costa & Kahn (2001) point out that immigration could increase racial (and ethnic) fractionalization and/or income inequality, resulting in lower social capital (and also lower investment in social capital). It is also possible that immigrants have a lower propensity to invest in social capital (everything else being equal), as argued by Kawashima-Ginsberg & Kirby (2009), lowering the average social capital in the communities they live in. This could lead to a spillover effect, where the lower social capital in a community leads all individuals living in the community (foreign-born or otherwise) to lower their investment in social capital, according to the model by Glaeser *et al.* (2002). Glaeser *et al.* (2002) findings however do not support this hypothesis. We can think of our reduced form regressions as capturing the sum of the impact of immigration on social capital through all these mechanisms, in a manner similar to Borjas *et al.* (2010) and Bianchi *et al.* (2012).

Though our data do not allow us to identify the exact mechanism through which immigration affects social capital, we perform robustness checks that allow us to narrow down the possibilities. Specifically, in Section 3.1, migration flows and social capital investment are split by race, allowing us to test whether migration flows are affecting social capital through income. We argue that the mechanism through which migration affects social capital is not income. We also argue that racial fractionalization and income inequality are not driving our results, as our estimates of  $\beta_1$  remain unchanged with the inclusion of controls for racial fractionalization and income inequality. Furthermore, in Section 3.3 we show that immigrants have a lower social capital (and propensity to invest in social capital) but this also leaves our estimates of  $\beta_1$ . By exclusion we argue that the

reduction in social capital is being driven by lower social capital for all individuals in the community, consistent with the model proposed by Glaeser *et al.* (2002) yet contradicting his empirical findings.

### 3.1 Area Approach

Previous authors have pointed out the importance of measuring social capital at the aggregate level in order to capture all externalities associated with the concept of social capital itself (see for instance Norris & Inglehart (2005) and Guiso *et al.* (2011)). To take externalities into consideration we begin by looking at the correlation between social capital and immigration at the metropolitan (MSA) level.

We use a reduced-form relationship between the total number of foreign-born individuals in the metropolitan area and the total number of people who are members of an organization, as specified in equation 1, to test whether immigration affects the stock of social capital. Our results are reported in Table 4. Since we include MSA fixed effects and year dummies, our estimates in column (1) show a negative (yet not statistically significant) correlation between changes in the number of foreign-born individuals and changes in the stock of social capital, across MSAs. In columns (3) and (5) of Table 4, we shift our attention to the flow of social capital, measured by the total number of volunteers (column (3)) and the total hours volunteered (column (5)). While the results for number of volunteers are positive (though again not statistically significant), the results for hours volunteered are negative (a one standard deviation (s.d.) increase in the total number of foreign-born individuals in an area leads to a 0.15 s.d. decrease in the number of hours volunteered by individuals in that area) and statistically significant at the 10% level.

In columns (2), (4) and (6) of Table 4, we split our sample by race (White, Hispanic, African American, Asian and Other). This allow us to divide immigrants into immigrants which are the same race as current residents in the state (or MSA) or whether they are of a different race. This allows us to check whether migration affects social capital through income or another mechanism. If migration is affecting social capital through income then immigrants' race should not matter, and the estimates for the coefficients of total number of foreign born people and number of own race

foreign born people should be the same. This is because, as found by Borjas *et al.* (2010) workers of different races are perfect substitutes, so that what matters for income is the total number of foreign born, not their race. If, on the other hand, immigration is affecting social capital through a different mechanism (such as the reduction in the average social capital in the community) then the coefficient for number of own race foreign born people should be greater in magnitude than the coefficient for total number of foreign born people. This is because race is important in determining an individual's social network and therefore their social capital (see for instance Loury (1977) and Luttmer (2001)). Table 4, shows that an increase in the number of own race foreign born is associated with an increase in all our measures of social capital (though our results are only statistically significant for membership of organizations and probability of volunteering). Furthermore, the coefficient for the number of own race foreign born people is not statistically different from coefficient for the total number of foreign born people.

These results could be biased towards zero if natives or previous migrants with low levels of social capital respond to the inflow of new immigrants by moving to another MSA within their current state of residence, as pointed out by Borjas (2003). In order to correct for this, we aggregate all our variables at the state level (plus Washington DC), as proposed by Borjas (2003), to capture these internal migrants. We conduct the same regressions as in Table 4 and present our results in Table 5. Most of our coefficients in Table 5, at the state level, are larger in absolute value, than those in Table 4, at the MSA level. This is consistent with the possibility that natives or previous migrants with low levels of social capital are displaced by new immigrants. As before, our results are not statistically significant.

### **3.2 Instrumental Variable**

Another potential source of bias comes from reverse causality. As pointed out by Munshi (2003), social networks are important in the decision to migrate. In particular, previous immigrants can help more recent immigrants to find jobs in the US. Therefore, states where the social capital of immigrants increases, could see an increase in the inflow of immigrants. In other words, the social

capital of previous immigrants acts as another pull factor. The increased inflow of immigrants would then reduce social capital in these states, biasing our estimates towards zero.

To address this issue, an instrument is needed to isolate supply-push from demand-pull factors. We follow Card (2001), Peri (2011) and Wozniak & Murray (2012) in constructing our supply-push instrumental variable, which consists of breaking the migration flow (not the stock or total number of immigrants), according to the following equation:

$$SPIV_{st} = \gamma_s \Delta Mig_t \tag{3}$$

where  $\gamma_s$  corresponds to the historical pattern of immigration settlement to a particular state  $s$  and  $\Delta Mig_t$  consists of the total number of immigrants who moved into the US in a particular year  $t$ . The 2000 Population Census from Ruggles *et al.* (2010) is used to construct  $\gamma_s$ , the share of foreign-born individuals in each state out of the total number of foreign-born individuals living in the US. The advantage of using the historical patterns of settlement for immigrants is that the immigrant inflow into a state  $s$  in year  $t$  is not responding to current changes in the social capital of previous immigrants in a particular state for a particular year<sup>3</sup>. Since we control for changes in the migration patterns to different states, we are eliminating any bias deriving from migrants picking their destination in response to changes in the social capital of individuals in a particular state. Note that the supply-push instrumental variable is a flow variable, which can only be used with equation 2. Therefore, we focus our analysis here on volunteering and hours volunteered.

Our first-stage results at the state level are reported in Table 6<sup>4</sup>. The supply-push instrumental variable is strongly correlated with the number of immigrants coming in to the state. In particular, in column (1) of Table 6, a one standard deviation increase in the supply-push instrumental variable leads to a 0.57 standard deviation growth in the number of foreign-born individuals moving in to the state. Based on equation 3, we can redefine our instrument by splitting migration flows by race. Therefore, we obtain a supply-push instrumental variable for own race and a supply-push

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<sup>3</sup>It is possible that migration flows are still responding to long-term trends in the social capital of immigrants in the US. However, state and year dummies control for long-term trends in social capital across states and years.

<sup>4</sup>The MSA results are not reported but they are consistent with our state-level instrumental variable results

instrumental variable for all other races<sup>5</sup> as instruments for changes in the total number of own-race foreign-born individuals and changes in the total number of foreign-born individuals of other races. As can be seen from column (3) of Table 6, a one standard deviation increase in the supply-push instrumental variable for own race leads to a 0.50 standard deviation increase in the number of immigrants moving into the state, while the same increase in the supply-push instrumental variable for other races leads to only a 0.07 standard deviation increase in the number of immigrants (both statistically significant). Similarly, in column (2) of Table 6, a one standard deviation increase in the supply-push instrumental variable for all other races leads to a (statistically significant) 0.52 standard deviation increase in the number of immigrants of all other races moving into the state, while a change in the supply-push instrumental variable for own race has a much smaller and statistically insignificant influence on the number of immigrants of other races moving in to the state. These results support the argument that our instruments are able to capture migration flows by race, and can be used to determine the causal impact of migration on social capital, by race.

As we expected, once we control for the self-selection of immigrants into particular destinations, a one standard deviation increase in the number of immigrants leads to a 0.12 standard deviations decrease in the total number of volunteers in the state (Table 7, column (1)), though it does not have a statistically significant impact on the total number of hours volunteered (Table 7, column (3)). More importantly, when the analysis is done by race we can see that this result is driven mainly by changes in the number of own-race immigrants, instead of the total number of immigrants. In particular, an increase in the number of own-race immigrants leads to a 0.08 standard deviations decrease in the total number of volunteers in the state (Table 7, column(2)), and our results for total number of hours volunteered are consistent but statistically insignificant (column (4) in Table 7). This suggests that immigration has to a negative impact in the extensive margin (total number of people who volunteer) is compensated by changes at the intensive margin (number of hours volunteered).

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<sup>5</sup>In Table 6, this variable is labeled as the supply-push instrumental variable in columns (2) and (3).

### 3.3 Individual-level results

As pointed out by Glaeser *et al.* (2002), aggregate behavior may not reflect individual behavior, which can lead to omitted variable bias. Therefore we repeat our analysis at the individual level by looking at the probability of being member of an organization, the probability of volunteering<sup>6</sup> and the hours volunteered by individuals, and their correlations with the inflows of immigrants to a particular state.

Our reduced-form results for the relationship between social organization membership and immigration are presented in Table 8. Although there does not seem to be any correlation between the total number of foreign-born people in the state and the likelihood of being a member of an organization (column (1)), when we separate migration flows by race in order to separate the impact of migration on wages and social capital (as explained earlier), we find that a one standard deviation increase in the number of foreign-born individuals in the state leads to a 0.76 percentage points increase in the probability of being a member of an organization.

Next, following Glaeser *et al.* (2002), we include controls for individual characteristics (age, education, gender, migration status, full-time employment, hourly income, marital status and number of children), household characteristics (household income and household size) and state characteristics (Gini coefficient for income inequality and racial fractionalization) in columns (3) to (5). Most of our results are consistent with previous findings. In particular, we find an inverted u-shaped relationship between being a member of an organization and age. Furthermore, highly educated people, women and married individuals are more likely to be members of organizations. Furthermore income has a positive and statistically significant (at the 10% level) effect on social organization membership consistent with Glaeser *et al.* (2002). The negative sign on our dummy variable for being born in a foreign country is consistent with previous work (see Kawashima-Ginsberg & Kirby (2009)), yet it is not clear whether this is because immigrants have a lower propensity to invest in social capital or whether immigrants respond to a decrease in average social capital in the states in

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<sup>6</sup>Since it is not possible to obtain unconditional marginal probabilities as we estimate a probit model with fixed effects and the calculations for instrumental variable logit with fixed effects are cumbersome we use the linear probability model in this section.

which they settle <sup>7</sup>. However, it does allow us to estimate to separate this effect for American born people. Our results in column (4) are the same as in column (2) (a one standard deviation increase in the number of own-race immigrants leads to a 0.76 percentage point decrease in the probability of individuals being members of an organization for which they volunteer). Furthermore, when we include controls for state characteristics (Gini coefficient and racial fractionalization) in column (5), we obtain the same results.

Our estimates for investment in social capital, measured by the probability of volunteering and hours volunteered by individuals, are shown in Table 9 and Table 10 respectively. The results are consistent with those in Table 8, showing that an increase in the number of own-race immigrants has a negative impact on both forms of social capital investment. In column (1) of both Table 9 and Table 10, total migration does not seem to affect either the probability of volunteering or the number of hours volunteered. However, once we break down our migration flows by race in columns (2), (4) and (5), a one standard deviation increase in the number of own-race immigrants leads to a 0.04 percentage points (not statistically significant) drop in the probability of volunteering (Table 9) and a statistically significant 0.004 standard deviation drop in the number of hours volunteered (Table 10). Our results remain the same when we include controls for individual characteristics in column (4) and state characteristics in column (5).

Finally, we correct for reverse causality, as in Section 3.2. Our first-stage results are reported in Table 11 and Table 12. For both endogenous variables, total immigration and own-race immigration flows, the supply-push instrumental variable defined in equation 3 is positively related and statistically significant. In particular, a one standard deviation increase in the supply-push instrumental variable for the total number of immigrants (excluding own-race number of immigrants in columns (2) through (4)) increases the total number of immigrants by 0.56 to 0.64 standard deviations (Table 11) and the number of own-race immigrants by 0.32 standard deviations (Table 12), while a one standard deviation increase in the supply-push instrumental variable for own race increases the total number of foreign-born individuals arriving each year (excluding the number of immigrants of one's own race) by 0.006 standard deviations (column (2) through (4) in Table 11) and the number

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<sup>7</sup>This is commonly known in the literature as the reflection problem.



of own-race immigrants by 0.52 standard deviations (Table 12).

Our second-stage results for our instrumental variables regarding the likelihood of volunteering are reported in Table 13, and are consistent with our earlier findings. Specifically, a one standard deviation in the number of total immigrants into the state leads to a 0.16 percentage points (significant at the 10% level) reduction in the probability of volunteering (column (1)). In addition, after disaggregating our results by race, we find that only the change in the number of own-race immigrants leads to a decrease in the probability of volunteering, in particular a 0.01 standard deviation increase in the number of own-race immigrants leads to statistically significant (at the 10% level) 9 percentage points to 12 percentage points decrease in the probability of volunteering (columns (2) to (4)).

Our results for hours volunteered reported in Table 14 are similar, though our coefficients are not statistically significant. Specifically, a one standard deviation in the number of total immigrants into the state leads to a 0.01 standard deviations reduction in the number of hours volunteered (column (1)), while a one standard deviation increase in the number of own-race immigrants reduces the number of hours volunteered by between 0.06 and 0.07 standard deviations (columns (2) to (4)).

## 4 Conclusion

We examined the relationship between immigration and three forms of social capital in the US. We have consistently found at the aggregate and individual level that immigration leads to a reduction in the stock of social capital (proxied by organization membership) and flow of social capital (proxied by volunteering). In particular, each one million immigrants which enter the US reduced the likelihood for individuals being a member of an organization by 1.9 percentage points and the likelihood of investing in social capital by 3.96 percentage points. However, our results also indicate that the reduction in the investment of social capital at the extensive margin (number of volunteers) is compensated by an increase at the intensive margin (so that total hours volunteered if not affected by immigration). Furthermore, using a supply push instrumental variable, standard in the migration literature, allow us to argue that this relationship is causal.

Furthermore, we examined several mechanisms through which migration may affect social capital: (i) reduction in income, (ii) increase in income inequality, (iii) increase in racial fractionalization, (iv) lower propensity to invest in social capital by immigrants; and (v) reduction in average social capital in the receiving community. By exclusion we argue that the most likely explanation is the reduction in average social capital in receiving communities, consistent with Glaeser *et al.* (2002) model but at odds with the empirical evidence they provide.

Our research has important implications for public policy, in particular, in the current round of migration reform in the US. Currently foreigners can migrate through two distinct paths: (i) through family reunification scheme, or (ii) through request by company for high skilled individuals. But these paths are exclusive. Skill is not taken into consideration in the family reunification scheme and family relation with residents in the US is not taken into consideration in the the second path. What this study finds is that social capital (and therefore, relationship with individuals in the US) matters and should be taken into consideration in all the migration paths as way to reduce the economic impact of immigration in the receiving communities. A better scheme would be a point scheme, like the ones used in Canada and Australia, which attributes points to different attributes of immigrants, such as family relationship with residents in the destination and skill. Future research should focus on the optimal number of points to give for different skill levels and relationship with individuals residents at the destination (as the points given to each of these categories are different across countries).

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## 5 Appendix 1 - Figures

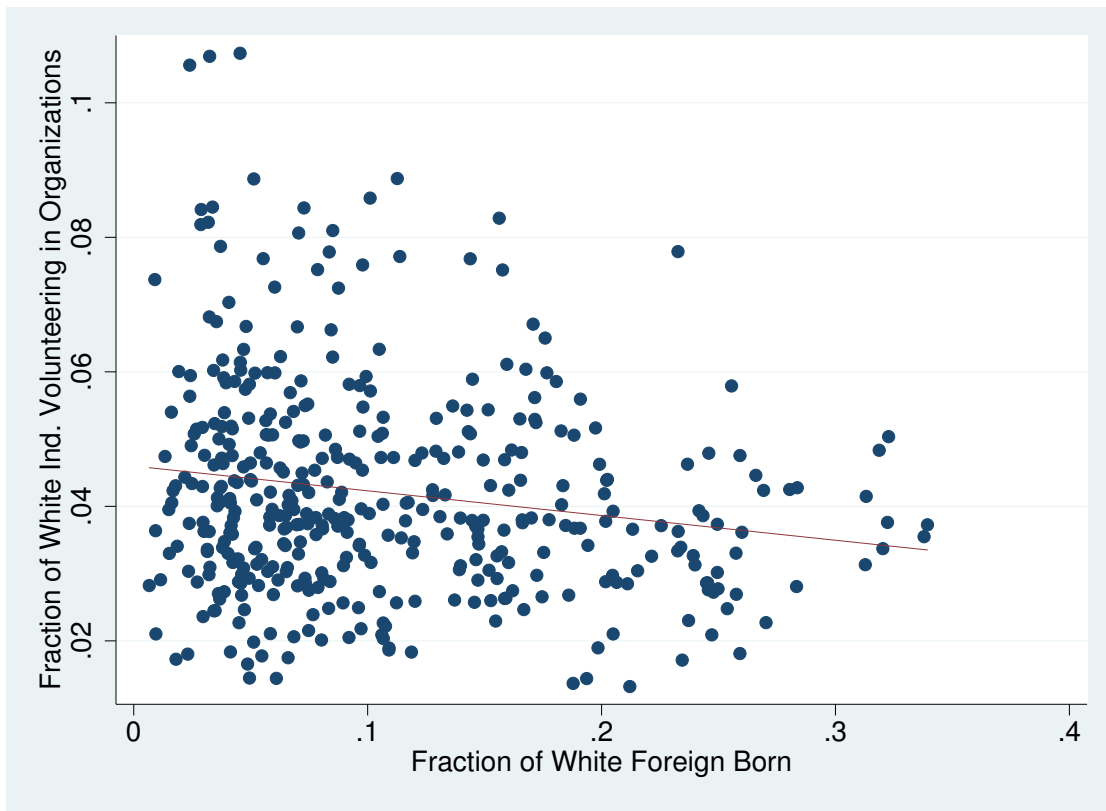


Figure 1: Negative correlation between the fraction of white individuals who are members of an organization for which they volunteer and the fraction of white foreign-born individuals across US states and Washington, DC between 2005 and 2011.

## 6 Appendix 2 - Tables

	Obs	Mean	Stand Dev
<b>Social Capital</b>			
<i>Membership of institutions</i>	362151	3.55%	0.231
<i>Volunteering</i>	362151	3.01%	0.171
<i>Hours Volunteered</i>	10030	2.105	15.5
<b>Individual Characteristics</b>			
<i>Full Time Workers</i>	362151	61.02%	0.4877
<i>Hourly Income</i>	25610	11.18	6.17
<i>Immigrants</i>	362151	15.68%	0.364
<i>Women</i>	362151	49.40%	0.49996
<i>Married</i>	362151	50.66%	0.5
<i>Children</i>	362151	30.20%	0.459
<i>Age</i>	362151	39.97	14.21
<i>Education</i>			
Graduated High School	362151	33.22%	0.471
Some College	362151	19.04%	0.393
College Degree or More	362151	30.63%	0.461
<i>Race</i>			
White	362151	68.42%	0.465
Hispanic	362151	12.58%	0.332
African	362151	10.70%	0.309
Asian	362151	4.67%	0.211
Other	362151	3.63%	0.187
<b>Household Characteristics</b>			
<i>Household Income</i>	252602	107.95	347.09
<i>Household Size</i>	252602	1.631	0.803

<b>State Characteristics</b>			
<i>America Born</i>	357	2969513	2861027
<i>Foreign Born</i>	357	542744	1107366
<i>New Immigrants</i>	357	10753	65201
<i>Gini</i>	357	0.266	0.034
<i>Racial Fractionalization</i>	357	0.383	0.161
<b>MSA Characteristics</b>			
<i>America Born</i>	1099	599829	1053119
<i>Foreign Born</i>	1099	145304	485848
<i>New Immigrants</i>	1099	2854	38103
<i>Gini</i>	1044	0.199	0.098
<i>Racial Fractionalization</i>	1099	0.377	0.177

Table 1: Basic statistics for individual between the ages of 16 and 65 in the CPS September Sample between 2004 and 2011. For hours volunteered we restrict our sample to people who had reported volunteering in the last year. Information on mean hourly wages is conditional on reporting a positive amount. We have several missing values for hourly income because the September CPS sample is not as thorough at collecting information about wages as the March Sample. Household characteristics, state characteristics and metropolitan area characteristics were calculated using the same sample. Household income is total income per week.



	Obs	Mean	Stand Dev
<b>Individual Characteristics</b>			
<i>Full Time Workers</i>	10030	63.13%	0.4825
<i>Hourly Income</i>	759	13.01	6.72
<i>Immigrants</i>	10030	10.62%	0.308
<i>Women</i>	10030	63.26%	0.482
<i>Married</i>	10030	63.57%	0.481
<i>Children</i>	10030	61.78%	0.486
<i>Age</i>	10030	39.24	11.78
<i>Education</i>			
Graduated High School	10030	25.51%	0.436
Some College	10030	20.42%	0.403
College Degree or More	10030	44.29%	0.497
<i>Race</i>			
White	10030	73.57%	0.441
Hispanic	10030	9.78%	0.297
African	10030	9.50%	0.293
Asian	10030	3.09%	0.173
Other	10030	4.06%	0.197
<b>Household Characteristics</b>			
<i>Household Income</i>	9688	145.47	411.72
<i>Household Size</i>	9688	1.626	0.766

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Table 2: Basic statistics for individual between the ages of 16 and 65 in the CPS September Sample between 2005 and 2011, who reported volunteering. Information on mean hourly wages is conditional on reporting a positive amount. We have several missing values for hourly income because the September CPS sample is not as thorough at collecting information about wages as the March Sample. Household characteristics were calculated out of the same sample. Household income is total income per week.

	Obs	Mean	Stand Dev
<b>Social Capital</b>			
<i>Membership of institutions</i>	56790	2.34%	0.175
<i>Volunteering</i>	56790	1.88%	0.136
<i>Hours Volunteered</i>	1065	1.787	8.13
<b>Individual Characteristics</b>			
<i>Full Time Workers</i>	56790	63.43%	0.4816
<i>Hourly Income</i>	4155	10.22	5.69
<i>Women</i>	56790	50.42%	0.49999
<i>Married</i>	56790	63.04%	0.483
<i>Children</i>	56790	42.79%	0.495
<i>Age</i>	56790	39.54	12.67
<i>Education</i>			
Graduated High School	56790	26.31%	0.44
Some College	56790	11.92%	0.324
College Degree or More	56790	31.08%	0.463
<i>Race</i>			
White	56790	21.06%	0.408
Hispanic	56790	45.29%	0.498
African	56790	8.04%	0.272
Asian	56790	22.50%	0.418
Other	56790	3.11%	0.174
<b>Household Characteristics</b>			
<i>Household Income</i>	36075	116.05	372.29
<i>Household Size</i>	36075	1.958	0.974

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Table 3: Basic statistics for individual between the ages of 16 and 65 in the CPS September Sample between 2005 and 2011, who are foreign born. Information on mean hourly wages is conditional on reporting a positive amount. We have several missing values for hourly income because the September CPS sample is not as thorough at collecting information about wages as the March Sample. Household characteristics were calculated out of the same sample. Household income is total income per week.

OLS regression of Social Capital on Migration across Metropolitan Areas						
	Institution Membership		Volunteers		Volunteer Hours	
	(1)	(2)	(3)	(4)	(5)	(6)
Total number of foreign born people	-0.024 (0.024)	-0.0086 (0.0057)	0.0077 (0.026)	0.00006 (0.0057)	-0.4203+ (0.229)	-0.101+ (0.055)
Number of own race foreign born people		0.01015* (0.0041)		0.0074 (0.00504)		-0.018 (0.074)
Lagged number of american born people	0.016 (0.0099)	-0.00082 (0.0022)	0.013* (0.0064)	-0.00064 (0.0015)	0.024 (0.069)	0.0034 (0.016)
Lagged number of foreign born people	-0.038* (0.017)	-0.0069+ (0.0038)	0.0069 (0.023)	-0.0015 (0.0041)	-0.906** (0.297)	-0.182** (0.06002)
Lagged number of own race american born people		0.0206** (0.00083)		0.016** (0.00062)		0.026** (0.0037)
Lagged previous own race foreign born people		-0.0029 (0.0087)		0.014** (0.0029)		0.0099+ (0.00598)
MSA Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	No	Yes	No	Yes
Observations	1099	3851	1099	3851	1099	3851
Number of Metropolitan Area	157	157	157	157	157	157
R-squared	0.08	0.73	0.02	0.76	0.12	0.07

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Table 4: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The data for U.S. Metropolitan Statistical Areas was compiled using the CPS September Sample between 2005 and 2011. Columns 1 and 2, look at the stock of social capital as measured by organization membership (as previous work by Glaeser *et al.* (2002)), while for the remaining columns we look at the investment of social capital measured by volunteering and hours volunteered. In columns 2, 4 and 6, the total number of foreign born people (row 1) excludes the number of own race foreign born people (row 2). Therefore, for columns 3 to 6, row 1 and row 2 correspond to the change in the total number of foreign born people and the change in the number of own race foreign born people, respectively. While an increase in total number of immigrants leads to a reduction in social capital regardless of the definition used, an increase in own race number of immigrants leads to an increase in social capital.

OLS regression of Social Capital on Migration across States							
	Institution Membership		Volunteers		Volunteer Hours		
	(1)	(2)	(3)	(4)	(5)	(5)	(6)
Total number of foreign born people	-0.079** (0.025)	-0.015** (0.0048)	-0.017 (0.021)	-0.0035 (0.0055)	-0.321 (0.367)	-0.017 (0.073)	-0.281** (0.099)
Number of own race foreign born people		-0.017 (0.014)		-0.0032 (0.0093)		-0.249* (0.104)	0.00299 (0.071)
Lagged number of American born people	0.024 (0.024)	-0.0046 (0.0052)	0.036* (0.016)	0.0036 (0.0032)	-0.443+ (0.253)	-0.229** (0.0503)	-0.107* (0.048)
Lagged number of foreign born people	-0.0008 (0.025)	0.0005 (0.0047)	0.0071 (0.0102)	-0.0023 (0.0019)	-1.121** (0.251)	-0.09521+ (0.051)	-0.219** (0.054)
Lagged number of own race American born people		0.022 (0.015)		0.017** (0.00063)		0.02831** -0.00738	0.0301** (0.0058)
Lagged previous own race foreign born people		0.022** (0.00073)		0.019** (0.0013)		0.03407** -0.00497	0.029** (0.0104)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	No	Yes	No	Yes	Yes
Observations	357	1778	357	1778	357	1778	1774
Number of State	51	51	51	51	51	51	51
R-squared	0.3	0.88	0.09	0.90	0.24	0.16	0.14

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Table 5: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The data for the 50 U.S. States and Washington, D.C. was compiled using the CPS September sample between 2005 and 2011. Columns 1 and 2, look at the stock of social capital as measured by organization membership (as previous work by Glaeser *et al.* (2002)), while for the remaining columns we look at the investment of social capital measured by volunteering and hours volunteered. In columns 2, 4 and 6, the total number of foreign born people (row 1) excludes the number of own race foreign born people (row 2). Therefore, for columns 3 to 6, row 1 and row 2 correspond to the change in the total number of foreign born people and the change in the number of own race foreign born people, respectively. Regardless of the definition of social capital we use, the above regressions show that an increase in immigration leads to a reduction in social capital.



First Stage of IV regression of Social Capital on Migration across States			
	Change in total number of Foreign Born People		Change in number of own Race Foreign Born People
	(1)	(2)	(3)
SPIV for number of immigrants	1.0199** (0.142)	0.968** (0.059)	0.064* (0.0305)
SPIV for own Race number of immigrants		0.065 (0.098)	0.958** (0.051)
Lagged number of American born people	0.074* (0.031)	-0.228** (0.0199)	-0.045** (0.0103)
Lagged number of foreign born people	-0.276** (0.052)	0.059** (0.012)	0.018** (0.0061)
Lagged number of own race American born people		0.0083 (0.0059)	-0.015** (0.00304)
Lagged previous own race foreign born people		-0.00072 (0.0015)	0.00069 (0.00078)
State Fixed Effects	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Race Dummies	No	Yes	Yes
Observations	357	1778	1778
Number of State	51	51	51
R-squared	0.38	0.33	0.23
F-test	51.57	136.57	179.37

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Table 6: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The data for the 50 U.S. States and Washington, D.C. was compiled using the CPS September sample between 2005 and 2011. For column 2 the independent variable in that regression (change in the change in the number of foreign born people) excludes the change in the number of own race foreign born people (independent variable in column 3). The Supply-Push Instrumental Variables (SPIV) uses information on the settlement pattern of immigrants from the 2000 Census and the total immigration into the US reported in the CPS from 2005 to 2011. The Supply-Push Instrumental Variable for Number of Immigrants (row 1) in columns 2 and 3 exclude the Supply-Push Instrumental Variable for Own Race Number of Immigrants (row 2). Both instruments have the correct sign and are statistically significant.

OLS regression of Social Capital on Migration across States				
	Volunteers		Volunteer Hours	
	(1)	(2)	(3)	(4)
Change in total number of foreign born people	-0.121** (0.047)	-0.012 (0.0098)	-0.859 (0.676)	-0.1795 (0.154)
Change in number of own race foreign born people		-0.088** (0.017)		-0.177 (0.2595)
Lagged number of American born people	0.041** (0.0105)	0.0048* (0.0019)	-0.416** (0.151)	-0.284** (0.077)
Lagged number of Foreign born people	-0.042 (0.027)	-0.014** (0.0049)	-1.377** (0.386)	-0.089** (0.0304)
Lagged number of own race American born people		0.017** (0.00024)		0.026+ (0.014)
Lagged previous own race foreign born people		0.0195** (0.00087)		0.034** (0.0038)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	No	Yes
Observations	357	1778	357	1778
Number of State	51	51	51	51

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Table 7: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The data for the 50 U.S. States and Washington, D.C. was compiled using the CPS September Sample between 2005 and 2011. For columns 2 and 4, the change in the number of foreign born people (row 1) excludes the change in the number of own race foreign born people (row 2). As expected once we control for reverse causality we find that the coefficients are larger (in absolute terms) and statistically significant.

OLS regression of individual Social Capital Measures on Migration					
	Dummy for being a member of an institution				
	(1)	(2)	(3)	(4)	(5)
Total number of Foreign Born People	-0.0041 (0.0055)	0.0017 (0.0059)		0.0028 (0.0058)	0.003002 (0.0058)
Lagged number of Foreign Born People	0.0101** (0.0034)	0.0101** (0.0034)		0.0105** (0.0037)	0.0104** (0.0037)
Lagged number of America born people	0.0069+ (0.0037)	-0.00016 (0.0052)		0.0016 (0.0056)	0.0014 (0.0055)
Total number of own Race Foreign Born People		-0.019* (0.0083)		-0.018* (0.00803)	-0.018* (0.0081)
Lagged number of own Race America Born People		0.00051 (0.00035)		0.00046 (0.00033)	0.00046 (0.00033)
Lagged previous own Race Foreign Born People		0.024* (0.0093)		0.023* (0.0097)	0.023* (0.0097)
Log Hourly Income			0.0071+ (0.0038)	0.0071+ (0.0042)	0.0071+ (0.0042)
Dummy for Missing Income			0.016+ (0.0088)	0.017+ (0.0097)	0.017+ (0.0097)
Household Income			0.00000701** (0.0000023)	0.0000087** (0.0000021)	0.0000087** (0.0000021)
Household Income Square			-0.000000001 (0.0000000009)	-0.0000000015+ (0.0000000008)	-0.0000000015+ (0.0000000008)
Dummy for being an immigrant			-0.014** (0.0013)	-0.014** (0.0015)	-0.014** (0.0015)
Dummy for Full Time Worker			-0.0049** (0.00094)	-0.0048** (0.00095)	-0.0048** (0.00095)

Dummy for women			0.015** (0.00099)	0.015** (0.00103)	0.015** (0.00103)
Dummy for being 25 to 29 years old			-0.0036** (0.0013)	-0.00301* (0.0014)	-0.00301* (0.0014)
Dummy for being 30 to 34 years old			-0.0089** (0.0013)	-0.0091** (0.0015)	-0.0091** (0.0015)
Dummy for being 35 to 39 years old			-0.0068** (0.0015)	-0.0073** (0.0017)	-0.0073** (0.0017)
Dummy for being 40 to 44 years old			-0.0017 (0.0018)	-0.0017 (0.0021)	-0.0017 (0.0021)
Dummy for being 45 to 49 years old			-0.000797 (0.0016)	-0.00039 (0.0017)	-0.00039 (0.0017)
Dummy for being 50 to 54 years old			-0.0011 (0.0013)	-0.00021 (0.0014)	-0.00021 (0.0014)
Dummy for being 55 to 59 years old			-0.0058** (0.0014)	-0.0056** (0.0016)	-0.0056** (0.0016)
Dummy for being 60 years old or older			-0.0063** (0.0014)	-0.0062** (0.0014)	-0.0062** (0.0014)
Household Size			-0.012** (0.000702)	-0.012** (0.00073)	-0.012** (0.00073)
Dummy for being married			0.0046** (0.00089)	0.0049** (0.00097)	0.0049** (0.00097)
Dummy for having Children 0-2 years of old			-0.0029+ (0.0017)	-0.0026 (0.0018)	-0.0026 (0.0018)
Dummy for having Children 3-5 years of old			0.021** (0.0022)	0.0197** (0.0024)	0.0197** (0.0024)
Dummy for having Children			0.062**	0.062**	0.062**

6-13 years of old			(0.0025)	(0.0025)	(0.0025)
Dummy for having Children 14-17 years of old			0.021** (0.0021)	0.021** (0.0021)	0.021** (0.0021)
Dummy for being a High School Graduate			0.0012 (0.00084)	0.0013 (0.00092)	0.0013 (0.00092)
Dummy for having some College			0.012** (0.0013)	0.012** (0.0013)	0.012** (0.0013)
Dummy for having a College Degree or more			0.025** (0.0016)	0.025** (0.0017)	0.025** (0.0017)
Gini Coefficient for the State					-0.0025 (0.027)
Racial fractionalization for the state					-0.0063 (0.032)
State fixed effects	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Race dummies	No	Yes	Yes	Yes	Yes
Observations	362154	362151	411874	362151	362151
Number of State	51	51	51	51	51
R-squared	0.00	0.00	0.03	0.03	0.03

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Table 8: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. Columns 1 and 2 show reduced form relationship between membership in clubs and migration. All population variables (American born and foreign born) are in millions. In column 3 we use a specification similar to Glaeser *et al.* (2002), and add state level immigration variables in columns 4 and 5. The results show only an increase in own race foreign born leads to a reduction in organization membership.



OLS regression of individual Social Capital Measures on Migration					
	Dummy for volunteering				
	(1)	(2)	(3)	(4)	(5)
Change in total number of Foreign Born People	-0.0038 (0.0033)	-0.0016 (0.0043)		-0.00072 (0.0043)	-0.0011 (0.0044)
Lagged number of Foreign Born People	0.0062** (0.0019)	0.0062** (0.0019)		0.0065** (0.0019)	0.0064** (0.0019)
Lagged number of America born people	0.00018 (0.0026)	-0.00063 (0.0025)		0.0016 (0.0024)	0.0016 (0.0024)
Change in number of own Race Foreign Born People		-0.0091 (0.0057)		-0.0086 (0.00601)	-0.0083 (0.00602)
Lagged number of own Race America Born People		0.00052* (0.00024)		0.00046* (0.00023)	0.00046* (0.00022)
Lagged previous own Race Foreign Born People		0.0022** (0.00053)		0.0019** (0.00043)	0.0019** (0.00043)
Log Hourly Income			0.0037 (0.0029)	0.0038 (0.0029)	0.0038 (0.0029)
Dummy for Missing Income			0.01005 (0.0068)	0.0101 (0.0068)	0.0101 (0.0068)
Household Income			0.0000095** (0.0000016)	0.0000096** (0.0000016)	0.0000096** (0.0000016)
Household Income Square			-0.0000000026** (0.0000000006)	-0.0000000026** (0.0000000006)	-0.0000000026** (0.0000000006)
Dummy for being an immigrant			-0.012** (0.0011)	-0.012** (0.0011)	-0.012** (0.0011)
Dummy for Full Time Worker			-0.0041** (0.00069)	-0.0041** (0.00069)	-0.0041** (0.00069)

Dummy for women			0.012** (0.00074)	0.012** (0.00074)	0.012** (0.00074)
Dummy for being 25 to 29 years old			-0.0016+ (0.00092)	-0.0015+ (0.00092)	-0.0016+ (0.00092)
Dummy for being 30 to 34 years old			-0.00502** (0.0011)	-0.00502** (0.0011)	-0.00503** (0.0011)
Dummy for being 35 to 39 years old			-0.0035** (0.0012)	-0.0035** (0.0012)	-0.0035** (0.0012)
Dummy for being 40 to 44 years old			0.000032 (0.0014)	0.000028 (0.0014)	0.000022 (0.0014)
Dummy for being 45 to 49 years old			0.0011 (0.0013)	0.00104 (0.0013)	0.00103 (0.0013)
Dummy for being 50 to 54 years old			0.00042 (0.00102)	0.00039 (0.00102)	0.00039 (0.00102)
Dummy for being 55 to 59 years old			-0.0048** (0.0011)	-0.0048** (0.0011)	-0.0049** (0.0011)
Dummy for being 60 years old or older			-0.0057** (0.00085)	-0.0057** (0.00084)	-0.0057** (0.00085)
Household Size			-0.0087** (0.00047)	-0.0087** (0.00047)	-0.0087** (0.00047)
Dummy for being married			0.0026** (0.00063)	0.0026** (0.00063)	0.0026** (0.00063)
Dummy for having Children 0-2 years of old			-0.0018 (0.0016)	-0.0018 (0.0016)	-0.0018 (0.0016)
Dummy for having Children 3-5 years of old			0.017** (0.0018)	0.017** (0.0018)	0.017** (0.0018)
Dummy for having Children			0.0502**	0.0502**	0.0502**

6-13 years of old			(0.0019)	(0.0019)	(0.0019)
Dummy for having Children 14-17 years of old			0.015** (0.0014)	0.015** (0.0014)	0.015** (0.0014)
Dummy for being a High School Graduate			0.00092 (0.000795)	0.00091 (0.00079)	0.00091 (0.00079)
Dummy for having some College			0.00901** (0.0011)	0.00903** (0.0011)	0.00903** (0.0011)
Dummy for having a College Degree or more			0.018** (0.0013)	0.018** (0.0013)	0.018** (0.0013)
Gini Coefficient for the State					-0.0198 (0.017)
Racial Fractionation for the State					0.0028 (0.021)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	Yes	Yes	Yes
Observations	294589	294589	294589	294589	294589
Number of State	51	51	51	51	51
R-squared	0.00	0.00	0.03	0.03	0.03

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Table 9: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. Columns 1 and 2 show reduced form relationship between volunteering and immigration. Change in total number of foreign born in columns 2 to 5 excludes change in the number of own race foreign born. All population variables (American born and foreign born) are in millions. In column 3 we use a specification similar to Glaeser *et al.* (2002), and further add state level immigration variables in columns 4 and 5. The results show that only an increase in own race foreign born leads to a (statistically insignificant) reduction in volunteering.

OLS regression of individual Social Capital Measures on Migration					
	Dummy for volunteering				
	(1)	(2)	(3)	(4)	(5)
Change in total number of Foreign Born People	0.0305 (0.031)	0.112* (0.045)		0.113* (0.045)	0.107* (0.041)
Lagged number of America born people	-0.0046 (0.0395)	-0.0053 (0.041)		-0.0062 (0.042)	-0.011 (0.0397)
Lagged number of Foreign Born People	-0.032 (0.027)	-0.0452+ (0.025)		-0.0395 (0.025)	-0.0398 (0.026)
Change in number of own Race Foreign Born People		-0.197** (0.059)		-0.191** (0.058)	-0.182** (0.058)
Lagged number of own Race America born people		-0.0016 (0.0037)		-0.0017 (0.0037)	-0.0016 (0.0038)
Lagged previous own Race Foreign Born People		0.011+ (0.0057)		0.01004+ (0.00597)	0.0099 (0.006002)
Log Hourly Income			0.016 (0.027)	0.016 (0.027)	0.016 (0.027)
Dummy for Missing Income			0.034 (0.058)	0.034 (0.058)	0.033 (0.058)
Household Income			0.0000089 (0.000023)	0.0000087 (0.000023)	0.0000092 (0.000023)
Household Income Square			-0.0000000038 (0.0000000089)	-0.0000000037 (0.0000000089)	-0.0000000037 (0.0000000089)
Dummy for being an immigrant			-0.036** (0.0077)	-0.035** (0.0076)	-0.035** (0.0076)
Dummy for Full Time Worker			-0.0017 (0.0091)	-0.0017 (0.0091)	-0.0017 (0.0091)

Dummy for women			0.032** (0.0096)	0.032** (0.0096)	0.032** (0.0096)
Dummy for being 25 to 29 years old			-0.0199* (0.0094)	-0.0197* (0.0094)	-0.0199* (0.0094)
Dummy for being 30 to 34 years old			-0.034** (0.011)	-0.034** (0.011)	-0.034** (0.011)
Dummy for being 35 to 39 years old			-0.038** (0.014)	-0.038** (0.014)	-0.038** (0.014)
Dummy for being 40 to 44 years old			-0.045** (0.012)	-0.044** (0.012)	-0.045** (0.012)
Dummy for being 45 to 49 years old			0.0036 (0.023)	0.0037 (0.022)	0.0034 (0.023)
Dummy for being 50 to 54 years old			0.019 (0.019)	0.019 (0.019)	0.019 (0.019)
Dummy for being 55 to 59 years old			0.0015 (0.0296)	0.0015 (0.0296)	0.0014 (0.0296)
Dummy for being 60 years old or older			-0.0092 (0.011)	-0.0092 (0.011)	-0.0094 (0.011)
Household Size			-0.026** (0.0035)	-0.026** (0.0034)	-0.026** (0.0034)
Dummy for being married			0.0064 (0.012)	0.0064 (0.012)	0.0064 (0.012)
Dummy for having Children 0-2 years of old			0.016 (0.017)	0.015 (0.017)	0.015 (0.017)
Dummy for having Children 3-5 years of old			0.00073 (0.013)	0.00066 (0.013)	0.000696 (0.013)
Dummy for having Children			0.097**	0.097**	0.097**

6-13 years of old			(0.018)	(0.018)	(0.018)
Dummy for having Children 14-17 years of old			0.068** (0.023)	0.068** (0.023)	0.068** (0.023)
Dummy for being a High School Graduate			0.019+ (0.011)	0.019+ (0.011)	0.019+ (0.011)
Dummy for having some College			0.046** (0.012)	0.046** (0.012)	0.046** (0.012)
Dummy for having a College Degree or more			0.063** (0.0092)	0.063** (0.0092)	0.063** (0.0092)
Gini Coefficient for the State					-0.665* (0.324)
Racial Fractionation for the State					-0.118 (0.297)
State Fixed Effects	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	Yes	Yes	Yes
Observations	362151	362151	362151	362151	362151
Number of State	51	51	51	51	51
R-squared	0.00	0.00	0.00	0.00	0.00

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Table 10: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. Columns 1 and 2 show reduced form relationship between volunteer hours and immigration. Change in total number of foreign born in columns 2 to 5 excludes change in the number of own race foreign born. All population variables (American born and foreign born) are in millions In column 3 we use a specification similar to Glaeser *et al.* (2002), and further add state level immigration variables in columns 4 and 5. The results show that only an increase in own race foreign born leads to a statistically significant reduction in volunteer hours.



IV First Stage Regression of Social Capital on Migration				
	Change in total number of Foreign Born People			
	(1)	(2)	(3)	(4)
SPIV for total number of Foreign Born People	1.139** (0.0037)	1.012** (0.0036)	1.012** (0.0036)	1.001** (0.0035)
SPIV for number of own race Foreign Born People		0.019** (0.0051)	0.019** (0.0051)	0.015** (0.0051)
Lagged number of America born people	0.0068** (0.00094)	0.0066** (0.00081)	0.0066** (0.00081)	0.00905** (0.0008002)
Lagged number of Foreign Born People	-0.158** (0.0016)	-0.139** (0.0013)	-0.139** (0.0013)	-0.133** (0.0013)
Lagged number of own Race America Born People		-0.0019** (0.00012)	-0.0019** (0.00012)	-0.0019** (0.00011)
Lagged previous own Race Foreign Born People		0.019** (0.00035)	0.019** (0.00035)	0.019** (0.00035)
Log Hourly Income			0.000997 (0.00095)	0.0013 (0.00093)
Dummy for Missing Income			0.0027 (0.0023)	0.0033 (0.0022)
Household Income			0.0000014* (0.00000069)	0.0000016* (0.00000068)
Household Income Square			-0.0000000004 (0.0000000003)	-0.0000000005+ (0.0000000003)
Dummy for being an immigrant			0.0021** (0.00037)	0.0021** (0.00037)
Dummy for Full Time Worker			-0.0000902 (0.00024)	-0.00012 (0.00024)

Dummy for women			-0.00014 (0.00022)	-0.000077 (0.00021)
Dummy for being 25 to 29 years old			-0.00035 (0.00044)	-0.00041 (0.00043)
Dummy for being 30 to 34 years old			-0.00036 (0.00045)	-0.00039 (0.00044)
Dummy for being 35 to 39 years old			-0.00069 (0.00047)	-0.00065 (0.00046)
Dummy for being 40 to 44 years old			-0.00037 (0.00047)	-0.00036 (0.00046)
Dummy for being 45 to 49 years old			-0.00054 (0.00046)	-0.00043 (0.00045)
Dummy for being 50 to 54 years old			-0.00012 (0.00044)	-0.00014 (0.00043)
Dummy for being 55 to 59 years old			0.00033 (0.00043)	0.000305 (0.00042)
Dummy for being 60 years old or older			0.00029 (0.00043)	0.000101 (0.00043)
Household Size			0.00027* (0.00011)	0.00026* (0.00011)
Dummy for being married			-0.00035 (0.00025)	-0.00038 (0.00024)
Dummy for having Children 0-2 years of old			0.00061 (0.00041)	0.000702+ (0.000401)
Dummy for having Children 3-5 years of old			-0.00067 (0.00041)	-0.00076+ (0.00041)
Dummy for having Children			-0.000045	-0.00011

6-13 years of old			(0.00033)	(0.00033)
Dummy for having Children 14-17 years of old			0.00013 (0.00039)	0.000103 (0.00039)
Dummy for being a High School Graduate			0.00046 (0.00034)	0.00049 (0.00033)
Dummy for having some College			0.00024 (0.00038)	0.00033 (0.00037)
Dummy for having a College Degree or more			0.00052 (0.00036)	0.00049 (0.00036)
Gini Coefficient for the State				-0.173** (0.0052)
Racial Fractionation for the State				0.761** (0.0071)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	Yes	Yes
Observations	362151	362151	362151	362151
Number of State	51	51	51	51
R-squared	0.47	0.38	0.38	0.40

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Table 11: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. The independent variable in columns 2 through 4 excludes the change in the number of own race foreign born. The Supply-Push Instrumental Variable is constructed at the state level and uses information on the settlement pattern of immigrants from the 2000 Census and the total immigration into the U.S. reported in the CPS from 2005 to 2011. The Supply-Push Instrumental Variable for number of immigrants (row 1) in columns 2 and 3 exclude the Supply-Push Instrumental Variable for own race number of immigrants (row 2). All population variables (American born and foreign born) are in millions. In column 3 we use a specification similar to Glaeser *et al.* (2002), and add state level immigration variables in columns 4 and 5. The instruments have the correct signs and are statistically significant.

IV First Stage Regression of Social Capital on Migration			
	Change in number own Race Foreign Born People		
	(1)	(2)	(3)
SPIV for total number of Foreign Born People	0.313** (0.0021)	0.313** (0.0021)	0.313** (0.0021)
SPIV for number of own race Foreign Born People	0.832** (0.00299)	0.831** (0.00299)	0.831** (0.00299)
Lagged number of America born people	0.0035** (0.00047)	0.0035** (0.00047)	0.0037** (0.00047)
Lagged number of Foreign Born People	-0.025** (0.00078)	-0.025** (0.00078)	-0.025** (0.00078)
Lagged number of own Race America Born People	0.00064** (0.000067)	0.00064** (0.000067)	0.00063** (0.000067)
Lagged previous own Race Foreign Born People	-0.0095** (0.000204)	-0.0095** (0.000204)	-0.0095** (0.000204)
Log Hourly Income		-0.000034 (0.00055)	-0.000034 (0.00055)
Dummy for Missing Income		0.000037 (0.0013)	0.000033 (0.0013)
Household Income		0.000000011 (0.000000402)	-0.000000015 (0.000000402)
Household Income Square		0.0000000000 (0.0000000002)	0.0000000000 (0.0000000002)
Dummy for being an immigrant		0.00085** (0.00022)	0.00084** (0.00022)
Dummy for Full Time Worker		-0.00019 (0.00014)	-0.00019 (0.00014)

Dummy for women		0.000046 (0.00013)	0.000042 (0.00013)
Dummy for being 25 to 29 years old		0.000304 (0.00026)	0.00031 (0.00026)
Dummy for being 30 to 34 years old		0.00024 (0.00026)	0.00025 (0.00026)
Dummy for being 35 to 39 years old		0.00049+ (0.00027)	0.000502+ (0.00027)
Dummy for being 40 to 44 years old		-0.000057 (0.00027)	-0.000046 (0.00027)
Dummy for being 45 to 49 years old		-0.0000299 (0.00027)	-0.000021 (0.00027)
Dummy for being 50 to 54 years old		0.00029 (0.00025)	0.000302 (0.00025)
Dummy for being 55 to 59 years old		0.000295 (0.00025)	0.000305 (0.00025)
Dummy for being 60 years old or older		0.000036 (0.00025)	0.000052 (0.00025)
Household Size		0.00017* (0.000066)	0.00017* (0.000066)
Dummy for being married		-0.000099 (0.00014)	-0.000098 (0.00014)
Dummy for having Children 0-2 years of old		0.00014 (0.00024)	0.00014 (0.00024)
Dummy for having Children 3-5 years of old		0.000076 (0.00024)	0.000076 (0.00024)
Dummy for having Children		0.00048* (0.00024)	0.00048* (0.00024)

6-13 years of old		(0.00019)	(0.00019)
Dummy for having Children 14-17 years of old		-0.00019 (0.00023)	-0.00019 (0.00023)
Dummy for being a High School Graduate		-0.00037+ (0.000196)	-0.00037+ (0.000196)
Dummy for having some College		-0.00049* (0.00022)	-0.00049* (0.00022)
Dummy for having a College Degree or more		-0.00058** (0.00021)	-0.00058** (0.00021)
Gini Coefficient for the State			0.039** (0.0031)
Racial Fractionation for the State			-0.012** (0.0042)
State Fixed Effects	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes
Race Dummies	No	Yes	Yes
Observations	362151	362151	362151
Number of State	51	51	51
R-squared	0.35	0.35	0.35

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Table 12: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. The Card Instruments is constructed at the state level and uses information on the settlement pattern of immigrants from the 2000 Census and the total immigration into the U.S. reported in the CPS from 2005 to 2011. The Supply-Push Instrumental Variable for number of immigrants (row 1) in columns 2 and 3 exclude the Supply-Push Instrumental Variable for own race number of immigrants (row 2). All population variables (American born and foreign born) are in millions. In column 3 we use a specification similar to Glaeser *et al.* (2002), and add state level immigration variables in columns 4 and 5. The instruments have the correct signs and are statistically significant.



IV regression of individual Social Capital Measures on Migration				
	Dummy for volunteering			
	(1)	(2)	(3)	(4)
Change in total number of Foreign Born People	-0.013+ (0.0071)	0.0014 (0.0097)	-0.00303 (0.0095)	-0.0035 (0.0096)
Lagged number of America born people	0.00605** (0.0021)	0.0059** (0.0021)	0.0062** (0.0021)	0.0061** (0.0021)
Lagged number of Foreign Born People	-0.0043 (0.0043)	-0.0044 (0.0041)	-0.0032 (0.0041)	-0.0032 (0.0041)
Change in number of Foreign Born People of own Race		-0.0396* (0.016)	-0.035* (0.016)	-0.034* (0.016)
Lagged number of America Born people of own race		0.00049+ (0.000296)	0.00044 (0.00029)	0.00044 (0.00029)
Lagged previous Immigrants of own race		0.0023** (0.00083)	0.00202* (0.00082)	0.00202* (0.00082)
Log Hourly Income			0.0038 (0.0024)	0.0038 (0.0024)
Dummy for Missing Income			0.0102+ (0.0058)	0.0102+ (0.0058)
Household Income			0.0000096** (0.0000018)	0.0000096** (0.0000018)
Household Income Square			-0.0000000026** (0.0000000007)	-0.0000000026** (0.0000000007)
Dummy for being an immigrant			-0.012** (0.00095)	-0.012** (0.00095)
Dummy for Full Time Worker			-0.0041** (0.00062)	-0.0041** (0.00062)

Dummy for women			0.012** (0.00055)	0.012** (0.00055)
Dummy for being 25 to 29 years old			-0.0015 (0.0011)	-0.0015 (0.0011)
Dummy for being 30 to 34 years old			-0.00501** (0.0011)	-0.00502** (0.0011)
Dummy for being 35 to 39 years old			-0.0034** (0.0012)	-0.0034** (0.0012)
Dummy for being 40 to 44 years old			0.000029 (0.0012)	0.000023 (0.0012)
Dummy for being 45 to 49 years old			0.00103 (0.0012)	0.00103 (0.0012)
Dummy for being 50 to 54 years old			0.000401 (0.0011)	0.000396 (0.0011)
Dummy for being 55 to 59 years old			-0.0048** (0.0011)	-0.0048** (0.0011)
Dummy for being 60 years old or older			-0.0057** (0.0011)	-0.0057** (0.0011)
Household Size			-0.0087** (0.00029)	-0.0087** (0.00029)
Dummy for being married			0.0026** (0.00063)	0.0026** (0.00063)
Dummy for having Children 0-2 years of old			-0.0018+ (0.00103)	-0.0018+ (0.00103)
Dummy for having Children 3-5 years of old			0.017** (0.00105)	0.017** (0.00105)
Dummy for having Children			0.0502**	0.0502**

6-13 years of old			(0.00084)	(0.00084)
Dummy for having Children 14-17 years of old			0.015** (0.000999)	0.015** (0.000999)
Dummy for being a High School Graduate			0.00091 (0.00086)	0.00091 (0.00086)
Dummy for having some College			0.00902** (0.00096)	0.00902** (0.00096)
Dummy for having a College Degree or more			0.018** (0.00092)	0.018** (0.00092)
Gini Coefficient for the State				-0.019 (0.014)
Racial Fractionation for the State				0.0051 (0.0199)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	Yes	Yes
Observations	362151	362151	362151	362151
Number of State	51	51	51	51

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Table 13: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. For columns 2 to 4, the change in the number of foreign born people (row 1) excludes the change in the number of own race foreign born people (row 2). All population variables (American born and foreign born) are in millions. As expected once we control for reverse causality we find that the coefficients are larger (in absolute terms) and statistically significant.

IV regression of individual Social Capital Measures on Migration				
	Dummy for volunteering			
	(1)	(2)	(3)	(4)
Change in total number of Foreign Born People	-0.042 (0.119)	0.189 (0.162)	0.17999 (0.162)	0.166 (0.164)
Lagged number of America born people	-0.0061 (0.035)	-0.0066 (0.035)	-0.0075 (0.035)	-0.012 (0.035)
Lagged number of Foreign Born People	-0.066 (0.071)	-0.055 (0.069)	-0.052 (0.069)	-0.053 (0.069)
Change in number of own Race Foreign Born People		-0.4204 (0.268)	-0.407 (0.268)	-0.387 (0.268)
Lagged number of own Race America Born people		-0.0018 (0.00496)	-0.0019 (0.00496)	-0.0017 (0.00496)
Lagged previous own Race Foreign Born People		0.012 (0.014)	0.011 (0.014)	0.011 (0.014)
Log Hourly Income			0.016 (0.041)	0.016 (0.041)
Dummy for Missing Income			0.034 (0.098)	0.033 (0.098)
Household Income			0.0000087 (0.0000298)	0.0000091 (0.0000298)
Household Income Square			-0.000000037 (0.000000013)	-0.000000037 (0.000000013)
Dummy for being an immigrant			-0.035* (0.016)	-0.035* (0.016)
Dummy for Full Time Worker			-0.0017 (0.011)	-0.0017 (0.011)

Dummy for women			0.032** -0.009394369	0.032** -0.0093942873
Dummy for being 25 to 29 years old			(0.0196) -0.0189558289	0.0198 (0.019)
Dummy for being 30 to 34 years old			-0.034+ (0.019)	-0.034+ (0.019)
Dummy for being 35 to 39 years old			-0.038+ (0.0202)	-0.038+ (0.0202)
Dummy for being 40 to 44 years old			-0.044* (0.0203)	-0.045* (0.0203)
Dummy for being 45 to 49 years old			0.0037 (0.0198)	0.0034 (0.0198)
Dummy for being 50 to 54 years old			0.019 (0.019)	0.019 (0.019)
Dummy for being 55 to 59 years old			0.0016 (0.018)	0.0014 (0.018)
Dummy for being 60 years old or older			-0.0092 (0.019)	-0.0094 (0.019)
Household Size			-0.026** (0.0049)	-0.026** (0.0049)
Dummy for being married			0.0064 (0.011)	0.0064 (0.011)
Dummy for having Children 0-2 years of old			0.015 (0.018)	0.015 (0.018)
Dummy for having Children 3-5 years of old			0.00066 (0.018)	0.0007004 (0.018)
Dummy for having Children			0.097**	0.097**

6-13 years of old			(0.014)	(0.014)
Dummy for having Children 14-17 years of old			0.068** (0.017)	0.068** (0.017)
Dummy for being a High School Graduate			0.019 (0.015)	0.019 (0.015)
Dummy for having some College			0.046** (0.016)	0.046** (0.016)
Dummy for having a College Degree or more			0.063** (0.016)	0.063** (0.016)
Gini Coefficient for the State				-0.642** (0.231)
Racial Fractionation for the State				-0.163 (0.337)
State Fixed Effects	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes
Race Dummies	No	Yes	Yes	Yes
Observations	362151	362151	362151	362151
Number of State	51	51	51	51

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Table 14: Robust standard errors in parentheses. + significant at 10%; \* significant at 5%; \*\* significant at 1%. The sample includes individuals between the age of 16 and 65 years old which are part of CPS September Sample between 2005 and 2011. For columns 2 to 4, the change in the number of foreign born people (row 1) excludes the change in the number of own race foreign born people (row 2). All population variables (American born and foreign born) are in millions. As expected once we control for reverse causality we find that the coefficients are larger (in absolute terms) but statistically insignificant.