



Ethnic networks can foster the economic integration of refugees

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Edited by Dina Okamoto, Indiana University, Bloomington, IN, and accepted by Editorial Board Member Jennifer A. Richeson June 27, 2019 (received for review November 28, 2018)

There is widespread concern in Europe and other refugee-receiving continents that living in an enclave of coethnics hinders refugees' economic and social integration. Several European governments have adopted policies to geographically disperse refugees. While many theoretical arguments and descriptive studies analyze the impact of spatially concentrated ethnic networks on immigrant integration, there is limited causal evidence that sheds light on the efficacy of these policies. We provide evidence by studying the economic integration of refugees in Switzerland, where some refugees are assigned to live in a specific location upon arrival and, by law, are not permitted to relocate during the first 5 y. Leveraging this exogenous placement mechanism, we find that refugees assigned to locations with many conationals are more likely to enter the labor market. This benefit is most pronounced about 3 y after arrival and weakens somewhat with longer residency. In addition, we find that, among refugees employed by the same company, a high proportion share nationality, ethnicity, or language, which suggests that ethnic residential networks transmit information about employment opportunities. Together, these findings contribute to our understanding of the importance of ethnic networks for facilitating refugee integration, and they have implications for the design of refugee allocation policies.

refugees | immigration | ethnic enclaves | social networks | economic integration

Since spring 2015, more than 2 million displaced persons have applied for asylum in Europe (1). When refugees and immigrants first arrive in a new country, they often choose to live with earlier immigrant cohorts in geographically concentrated “ethnic enclaves” (2). Across Europe, this residential pattern has raised concerns about segregation and balkanization. For example, at the peak of the refugee crisis, German Chancellor Angela Merkel declared that “those who seek refuge with us also have to respect our laws and traditions, and learn to speak German” and concluded that “multiculturalism leads to parallel societies, and therefore multiculturalism remains a grand delusion” (3).

Although immigrants from low-income countries tend to make significant progress in terms of employment rates and earnings during their first decade after arrival, over the long term, they continue to lag behind otherwise similar natives (4–7). The belief that living in an enclave of coethnics or conationals hinders economic and social integration by making it more difficult for newcomers to acquire the host country’s language and norms is widespread. In fact, several countries use policies specifically designed to geographically disperse asylum seekers (8). In Germany, asylum seekers lose their financial support if they leave the federal state to which they were initially assigned. In Switzerland, asylum seekers and refugees with subsidiary protection are not allowed to move from their assigned canton, and, in Denmark, Sweden, and The Netherlands, asylum seekers who rely on public housing assistance are geographically dispersed.

Refugees are often among the most vulnerable immigrant groups, facing the steepest barriers to economic and civic integration. However, despite the prevalence of policies designed to prevent refugees from moving to ethnic clusters, there is little causal evidence of the long-term consequences of these policies. Ethnic clusters have the potential to be beneficial. Previous research suggests that coethnics form social networks (9, 10), and networks reduce search costs and problems with asymmetric information in the labor market (11, 12). Hence, ethnic clusters can give immigrants access to networks that provide information about job openings and job referrals. A sociological literature also suggests that participation in the “enclave economy”—a spatial cluster of businesses owned by coethnics—enables immigrants to improve their economic status faster than the secondary labor market of the host society (13, 14). These effects are particularly pronounced for immigrants who are not fluent in the local language. For refugees, the social network an ethnic cluster provides may also help them cope with heightened stress and anxiety during the asylum process, which might also improve their employment prospects (15).

Comparatively little research has focused on the effects of ethnic clusters for refugees specifically, and the evidence so far is

Significance

The integration of refugees into the host economy has become a major policy challenge for refugee-receiving countries in recent years. One prominent concern among policymakers is that refugee settlement in locations with high concentrations of coethnics reduces integration. However, evidence on the causal effects of such ethnic clusters is scant. We leverage a centralized placement policy in Switzerland where refugees were exogenously assigned to live in specific locations. We find that refugees assigned to locations with many coethnics find work at higher rates compared with similar refugees assigned to locations with few coethnics. This suggests that spatially concentrated ethnic networks can catalyze the economic integration of refugees by facilitating the sharing of information about employment opportunities.

Author contributions: L.M., J.H., and D.H. designed research; L.M., J.H., and D.H. performed research; L.M. analyzed data; and L.M., J.H., and D.H. wrote the paper.

The authors declare no conflict of interest.

This article is a PNAS Direct Submission. D.O. is a guest editor invited by the Editorial Board.

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Data deposition: The replication code files reported in this paper have been deposited in the Harvard Dataverse (<https://doi.org/10.7910/DVN/FXVVDQ>).

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This article contains supporting information online at www.pnas.org/lookup/suppl/doi:10.1073/pnas.1820345116/-DCSupplemental.

Published online July 29, 2019.

mixed. Studies from Denmark and Sweden have found positive effects on earnings for refugees living in an enclave (16, 17), but no impact on employment, suggesting that enclaves improve the match between job and worker rather than increase employment rates (17). Focusing on Germany, ref. 18 finds positive effects on employment, but the gains decrease rapidly over time. The study also finds negative effects on wages, suggesting that network-generated referrals facilitate access to lower-paying jobs. Related research has also examined the impact of enclave characteristics, such as average welfare dependence, tenure, educational level, and criminal conviction rate on refugees' integration outcomes (19–22).

When trying to isolate the causal effect of ethnic clusters on employment outcomes, researchers face the problem that the place of residence or work is not randomly assigned. Instead, refugees selectively move closer to an ethnic cluster if they expect to benefit from its networks, and they search for work elsewhere if they expect to find better jobs outside of the enclave economy. Hence, if we find that refugees living in a municipality with many coethnics have a higher probability of employment than those in municipalities with few coethnics, we cannot conclude that these differences are caused by the cluster, because the self-selection into clusters ensures that these groups differ on many important confounding characteristics, such as human capital endowment, motivation, or host country language skills. These endogenous residential location choices confound many existing comparisons of refugees inside and outside of the enclave (important exceptions include refs. 16–18 and 20). A second issue is that the short- and long-term effects of living in an ethnic cluster may differ, but, since refugees are free to move after the initial placement in most countries, it is hard to estimate these effects while keeping constant both the sample of movers and nonmovers and the exposure to the cluster.

In this study, we address these issues and expand on previous research along 3 dimensions. First, we leverage a placement policy for asylum seekers in Switzerland. Refugees with subsidiary protection in our study sample are exogenously placed across the 26 Swiss cantons and also have to live and work in their assigned canton for a minimum of 5 y. Given that the refugees in our sample are not able to influence the canton assignment, and that the number of coethnics will vary depending on the canton, we can isolate the effect of living in an ethnic cluster. Unlike previous studies, where refugees can move after the initial placement, these refugees have to stay, and are thereby exposed to the same coethnics for several years. This allows us to track the dynamics of employment gains from ethnic clusters over time. Distinguishing between short-term and long-term effects is important, because it could very well be the case that refugees can find work quicker in the enclave economy than in the primary labor market, but the medium- and long-term effects are negative (23). For example, one could imagine that refugees who get a job through ethnic networks get “trapped” in a low-wage job or have fewer incentives to learn the host country language, and therefore receive lower long-term returns to human capital than refugees who find work outside of the network.

Second, we combine this natural experiment with registry data from the State Secretariat of Migration (SEM) that covers the universe of asylum seekers who arrived between 1994 and 2017. The SEM data provide information on their demographic background, the outcome of their asylum process, and their employment status at the end of each year. Unlike previous studies, we observe refugees directly after arrival, namely, before they have received residence permits. We can thereby track their employment status from the start, to examine the dynamic effects of coethnic networks. In addition to the binary employment indicator, our data also contain information about the type of work refugees perform, a unique employer ID, and

the start date of their employment contract. This allows us to identify refugees employed in the same sector and by the same employer and thereby shed light on the channels through which ethnic networks operate.

Third, previous research shows that ethnolinguistic similarity is important for the formation of social networks (e.g., ref. 9). While previous studies on ethnic enclaves have defined ethnic networks using conationality as a marker of a shared background (16–18, 20), our detailed data give us the opportunity to examine the robustness of the network effects using 3 alternative measures. We measure the number of network members based on either nationality, ethnicity, or language, to examine if they differ in importance for refugees' employment prospects.

We find that spatially concentrated ethnic networks have a small but positive effect on refugees' employment levels. In particular, assigning refugees to a canton with a 10% higher number of conationals increases their employment rate at the end of the third year after arrival by about 2% on average. This network effect peaks after 3 y, but remains positive up to 5 y after arrival. The effects for our network measures based on ethnicity and language are very similar. Looking at conationals who have been hired by the same company, we see that the share is disproportionately high compared with the share of conationals within the same work sector in the same canton, supporting the notion that newly arrived refugees receive employment information through their conational network. Again, the results are virtually identical when using ethnicity- or language-based network measures.

Institutional Background

Asylum seekers in Switzerland are initially housed in a few centralized processing centers, and then are transferred to cantons within 90 d of arrival. The assignment to cantons is done manually at SEM headquarters, without any personal interaction between the allocation officer and the asylum seeker. By law, the allocation to the cantons is proportional to population size, and, since 1998, there are also requirements to balance asylum seekers' country of origin across cantons. While waiting for the decision on their asylum claim, a lengthy process that takes, on average, about 2 y for those who ultimately receive protection, asylum seekers have to reside in the assigned canton. They are permitted to work after 3 mo (see ref. 15 for details), and the employer must contact the corresponding cantonal authority to apply for a work permit for the asylum seeker. Some cantons impose restrictions on the sectors refugees can work in.

Most applicants who are not deported receive either subsidiary protection (F permit) or refugee status according to the Geneva Convention (B permit). Individuals with an F permit can apply for a B permit after 5 y, and immigrants can apply for a permanent residence permit (C permit) after 5 to 10 y. Even after receiving an F permit, refugees with subsidiary protection are not allowed to live or work in a canton other than the one to which they were originally assigned.* After receiving a B permit, refugees can apply to move to another canton, and the application can only be denied if the applicant is highly dependent on welfare benefits. In our analysis, we focus on asylum seekers who received an F permit and were therefore not allowed to move from their assigned canton for at least 5 y after arrival.

Materials and Methods

Data and Measures. We draw upon 2 sets of register panel data to identify the effect of coethnic networks on refugee employment. First, we leverage

*Requests to transfer to another canton are rarely granted, unless they concern family reunification or health issues.

the ZEMIS (central migration information system) database from the SEM, which tracks all individuals who applied for asylum between January 1994 and December 2017 and were subsequently granted subsidiary protection. The data contain detailed information on the applicants' date of arrival, processing center, assigned canton, asylum decision, date of the decision, and demographic characteristics, such as country of citizenship, age, and gender, as well as self-reported ethnicity, language, and religion. Importantly, the SEM also collects information on the number of days individuals have continuously been employed at the end of each year and a unique employer number. In addition, and only starting in April 2008, the data also contain information about whether special considerations required assignment to a particular canton (e.g., family members who arrived earlier or health issues that necessitate treatment in a particular hospital). We exclude cases with approved requests to be assigned to specific cantons, and only focus on those individuals whose assignment was exogenous (see below). Given our focus on employment, we also restrict the sample to the working age population, i.e., refugees between 18 and 65 y of age at arrival. We also focus on asylum seekers who received an F permit and arrived between 2008 and 2013, so that we can track their integration trajectories over the first 5 y after arrival. After 5 y, asylum seekers and refugees with subsidiary protection can apply for a residency permit that allows them to move across cantons, and their employment outcomes are no longer consistently updated in the database. Our use of the ZEMIS data was governed by a data use agreement with the SEM and did not require informed consent and institutional review board approval, given the nature of the data. We were granted permission to analyze the data and freely publish the results, but are not allowed to share the data with third parties. Researchers who want to access the data need to request it from the SEM. Our replication code files are posted in a dataverse at <https://doi.org/10.7910/DVN/FXVVDQ> (24).

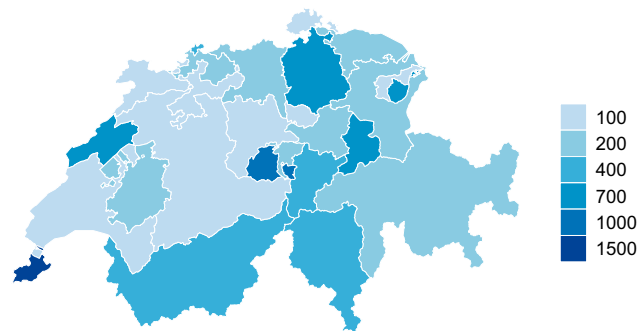
Second, we measure ethnic clusters in 3 ways, defined as the number of immigrants in the assigned canton and year who have a shared nationality, ethnicity, or language. Our preferred measure defines the ethnic network by the number of conationals. To calculate the number of immigrants with shared nationality for each canton and year, we combine the information on country of origin from ZEMIS (F permits) with population-wide registry data for all immigrants (with B or C permits) living in Switzerland using data from PETRA (foreigner registry until 2009) and its successor registry, STATPOP (registry of all residents, from 2010 onwards). Combining these 3 data sources allows us to measure the size of the network based on all immigrants, both refugees and other types of immigrants. In addition, the origin variable in the ZEMIS data is nonmissing for nearly all refugees. As an alternative, we also measure the size of the network by the number of immigrants with shared ethnicity or language living in a specific canton. For this, we leverage information on immigrants' self-reported language and ethnicity. Note that this information is only available from ZEMIS, and therefore the network only covers refugees arriving in 1994 and onward who received an F, B, or C permit. It does not cover all immigrants living in a specific canton in a given year. In addition, some individuals lack information on ethnicity and language, and therefore the samples for the analysis based on coethnic and colinguistic network members are somewhat smaller than the sample we can use for the conational definition of the network.

SI Appendix, Table S1 shows summary statistics for our sample. The average age at arrival is 28 y, a third of the sample consists of women, and close to one-fifth arrive with a child (family members younger than 18 y). The individuals in our sample waited 2.3 y, on average, to receive their F permit, and the average number of conationals in their canton is 570.

While individuals with an F permit are restricted from moving, migrants who moved to Switzerland with a work or study visa, as well as those with a B or C permit, are typically free to locate as they wish. We therefore observe geographic variation for different origin groups. As an example, Fig. 1 shows that the number of conationals varies by canton for asylum seekers from Iraq and Somalia. Around 90% of the refugees in our sample originate from Eritrea, China (Tibet), Afghanistan, Somalia, Syria, Sri Lanka, or Iraq (*SI Appendix, Table S2*).

Exogenous assignment. The allocation to cantons is done manually by placement officers in the SEM headquarters, without any personal interaction with the asylum seeker. Hence, any potential selection must be based on the observable characteristics of the asylum seekers recorded in ZEMIS. We have access to the same ZEMIS database and thereby observe the same applicant information as is available to the SEM officers in charge of assignment. Because we condition on the observable characteristics, placement should be exogenous to individuals' unobservable characteristics. The headquarters assigned around 60 cases a day over the years 2008–2013 with a very small team of placement officers, sug-

Residents from Iraq



Residents from Somalia

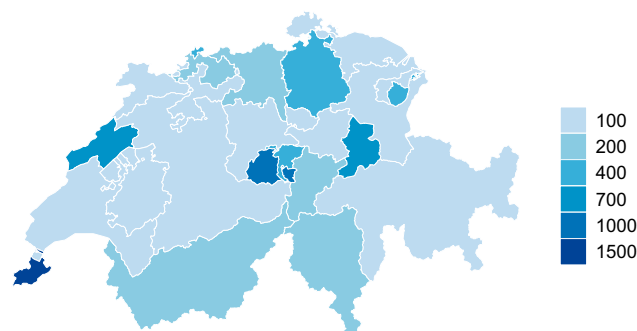


Fig. 1. Number of residents from Iraq or Somalia (by canton), measured in 2013.

gesting that there is little time to optimize on asylum seekers' individual characteristics.

To test the assumption that assignment is balanced on characteristics not observed by the placement officer, we examine whether a variable not yet realized at the time of assignment, namely the time refugees wait for a decision on their asylum claim, is related to the size of the conational (coethnic or colinguistic) network. The wait time is likely to be related to individuals' backgrounds and protection claims. Previous research has also found that wait time has an independent and substantial effect on refugees' subsequent employment chances (15). In *SI Appendix, Table S3*, we examine whether wait time (measured as the log number of days between submission of the asylum application and decision date) is related to the number of network members in the assigned canton. For this, we condition on arrival year and origin country, since the size of the network and expected wait time will vary by country and over time. We find no evidence that wait time is related to the size of the network. We also find that the results are robust when conditioning on processing center and canton fixed effects (these are the predictors we condition on in the main specification). These tests corroborate our qualitative insights from interviews with the assignment officers, which convey that the allocation is indeed quasi-random and unrelated to unobservable characteristics.

Statistical analysis. To estimate the impact of being assigned to a canton with a large network, we regress refugees' employment outcomes on the log number of conationals in the assigned canton. We control for the refugees' country of origin, since the number of conationals varies by country. The number of conationals will generally be higher in cantons with a larger population, but these cantons also differ on other characteristics that may affect employment chances. Hence, we also include canton fixed effects and identify the network effect from within-canton variation in network size between different nationalities. To account for the fact that geographical proximity of the processing center can affect the canton assignment, we control for the center and year of arrival. We also condition on the individual characteristics observable to the SEM headquarters at the point of assignment to eliminate potential omitted variable bias, as well as canton level characteristics. This allows us to attribute differences in employment levels to differences in the number of conationals.

Our benchmark model has the following equation:

$$y_{ickt} = \beta_1 \ln(\text{Match}_{ck,t-1} + 1) + \sum_{q=2}^5 \gamma_q \{\text{Years in CH}_{it} = q\} + \sum_{q=2}^5 \zeta_q \{\text{Years in CH}_{it} = q\} \cdot \ln(\text{Match}_{ck,t-1} + 1) + \beta_2 X_{ickt} + \theta_k + \theta_c + \theta_t + \varepsilon_{ickt}$$

where our main outcome y_{ickt} is a dummy variable indicating whether individual i from country c in assignment canton k is employed in year t ; $\ln(\text{Match} + 1)$ measures the logged number of conational immigrants in the assigned canton in year $t - 1$, and we interact this variable with indicators that mark each individual's first 5 y in the country, $\{\text{Years in CH} = q\}$, where the arrival year, $q = 1$, is the reference category. Therefore, β_1 and ζ_q capture the employment effects of being placed in a canton with a higher number of conationals in each of the first 5 y after arrival. X_{ickt} is a matrix of control variables including an intercept, age at arrival, age at arrival², woman, married, arriving with a child, family size, processing center, processing center interacted with year, an indicator for French-speaking immigrants assigned to French-speaking cantons, dummies if a preference for German or French speaking cantons is expressed in the case file sent to the assignment office, and the cantonal unemployment rate and log number of immigrants. We also include fixed effects for self-reported ethnicity, language, and religion. Finally, we include fixed effects for arrival year (θ_t), assignment canton (θ_k), and country of citizenship (θ_c) to eliminate the influence of common shocks and time-invariant unobserved nationality or canton-specific confounders. Standard errors are clustered at the canton level. To assess the robustness to alternative measures of the size of the ethnic network, we also replicate the models using the logged number of immigrants with a shared ethnicity or a shared language instead of the number of immigrants with a shared nationality.

Results

Fig. 2, *Top Left* shows the marginal effects of being assigned to a canton with a higher number of conationals on the probability of

employment in each of the first 5 y after arrival (see *SI Appendix, Tables S4–S7* for the regression results). We find that being assigned to a canton with a larger existing network of conationals positively affects the probability of employment in the arrival year (year 1) and peaks 3 y after arrival. This network effect is not only statistically significant but also economically meaningful: A 10% increase in the number of conationals increases employment by 0.3% points (P value: 0.001; 95% CI: 0.12 to 0.42) 3 y after arrival. This corresponds to a 2% increase over the average employment rate in the same year. Fig. 2, *Top Center* and *Top Right* shows the corresponding effects using shared ethnicity and language as the basis for the network measure. The pattern for the coethnic and colinguistic networks are qualitatively similar to the estimates from the nationality-based measure.

Fig. 2, *Bottom Left* shows the predicted employment rate for refugees assigned to a canton where the number of conationals is either at the 25th or 75th percentile. This illustrates the temporal dynamics and magnitude of the estimated network effects. These results show that refugees assigned to an area with many conationals find employment faster than those assigned to cantons with few conationals. Three years after arrival, when most asylum seekers have received their subsidiary protection status, the employment rate increases for those assigned to cantons with few conationals, and the effect of the conational network slightly decreases. Around 40% are employed in the fifth year. Again, we find a very similar pattern for shared ethnicity and language, presented in Fig. 2, *Bottom Center* and *Bottom Right*. In *SI Appendix*, we also replicate the model to examine the effects on alternative outcomes. We find that a higher number of conationals also increases the probability of being employed at least 90 d each year, which is the maximum probation period for most jobs, but has no differential effect on the probability of working in the high-skill sector (*SI Appendix, Tables S4–S7*). We obtain similar effects when examining the overall average impact of the conational network, without using the interaction with years since arrival (*SI Appendix, Table S8*).

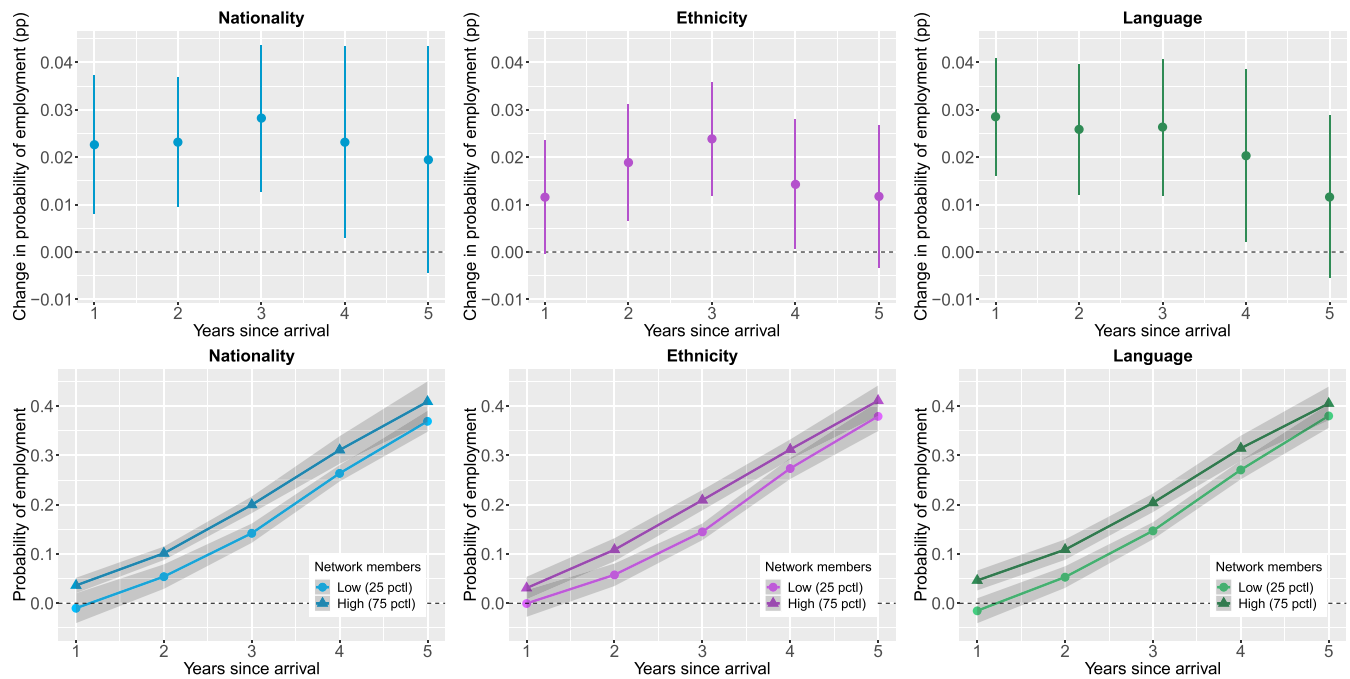


Fig. 2. (Top) The estimated marginal effect of being assigned to a canton depending on the log number of network members (based on shared nationality, ethnicity, or language) on refugee employment by year of arrival, with 95% CIs. Year 1 corresponds to the arrival year. (Bottom) The predicted employment rates for refugees assigned to cantons with a low or high number of network members (i.e., 25th vs. 75th percentile), with 95% CIs. Both rows are estimates from the benchmark regression model (see *Statistical analysis* for details).

What mechanisms might account for these network effects? While we do not observe how refugees find employment, we know which refugees are employed by the same company, and we can calculate the number of network members with shared nationality, ethnicity, or language who have been employed by the same company in the past.[†] Looking at the nationality of an individual's coworkers, we see that around 60% of the employed individuals in our sample had worked for a company which had already employed at least one other individual from the same country (*SI Appendix, Fig. S1*). The results for ethnic- and language-based networks are similar. While this pattern is suggestive of network effects, it is also possible that it simply reflects the fact that refugees from the same origin countries are clustered in the same work sectors, perhaps due to similar skill sets. To examine this, Fig. 3 shows the share of all individuals previously employed by an individual's firm with common nationality, ethnicity, or language. We then compare this to the share of all employed refugees in the canton who belong to the same group, as well as the share employed within the same work sector.

Clearly, the share of conationals employed by the same firm is disproportionately high compared with the share of conationals employed within the same sector (and different companies), which is consistent with the hypothesis that refugees obtain information about jobs through conational networks. We also conduct a permutation test (*SI Appendix, Fig. S2*) where we randomize all matches of firms and individuals and stratify on gender and arrival year to Switzerland, as well as those who start a new employment in the same year, canton, and sector. The average share of conational coworkers following the randomization is around 0.23, compared with our observed value at 0.36. The same relationship holds for our ethnic and linguistic measures of the networks (*SI Appendix, Fig. S2, Center and Right*). This further strengthens our argument that one channel by which networks facilitate labor market integration is by providing information about jobs.

We conduct several robustness tests. First, on top of excluding individuals with approved requests to be assigned to a specific canton, we also exclude those who make requests that are not approved (*SI Appendix, Table S9*). This reduces the sample size and lowers statistical precision, but we still find significant effects on employment during the first 3 y. Second, we find that the results are robust to adding different control variables step by step, as well as canton by country specific fixed effects and canton-specific time trends to account for unobserved confounders that vary linearly in each canton (*SI Appendix, Table S10*). Third, we find similar results when we expand the sample and include all refugees who are only observed for 3 or 4 y instead of 5 y (*SI Appendix, Table S11*). Fourth, we explore heterogeneity across subgroups and find that the positive network effects are concentrated among women and young individuals (*SI Appendix, Table S12*). In general, women are less likely to be employed during the period (8% employment rate compared with 24% for men). The fact that they benefit more from networks is consistent with previous studies that have found that networks are more important for disadvantaged groups (11). Young individuals, on the other hand, are probably more likely to actively search for a job and thereby benefit from the networks. Fifth, we find no consistent evidence that the degree of heterogeneity in terms of ethnic and linguistic diversity moderates the conational network effects, although these tests are low-powered given that origin, ethnicity, and language are correlated (*SI Appendix, Tables S13 and S14*). Sixth, we find that the results are robust to using a

[†]For each unique individual—employer observation in our sample, we calculate the number of conational (coethnic or colinguistic) coworkers as the total number of individuals from the same group (minus one) who were employed by the same company at any point between 1994 and the year the specific individual was hired.

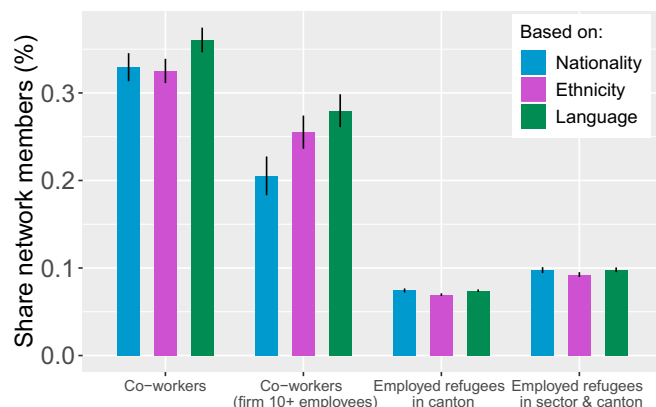


Fig. 3. Share of network members among coworkers. The figure shows the average share of network members based on either refugees previously employed by an individual's firm, all previously employed refugees in the individuals' canton, or all previously employed refugees within the individuals' canton and work sector. Black lines indicate 95% CIs.

wild cluster bootstrap (*SI Appendix, Table S15*). Finally, we perform an additional falsification test to confirm that the effects are indeed driven by the number of conationals rather than by placement in a canton with many nonconational immigrants, who may affect the local labor market. Instead of measuring the network as the number of conationals, we define it as the number of immigrants (with F, B, or C permits) who are not conationals. As expected, we find no significant effect of the number of nonconational immigrants on employment outcomes (*SI Appendix, Table S16*).

Conclusion

Policymakers in refugee-receiving countries are often concerned that living in an ethnic enclave hinders refugees' economic and social integration. Based on this belief, several European governments have adopted policies specifically designed to disperse asylum seekers and balance the ethnic composition of refugees across geographic areas. Leveraging an exogenous placement mechanism and registry data covering all refugees who obtained subsidiary protection in Switzerland between 2008 and 2013, we find that being assigned to live and work in areas with many coethnics actually facilitates refugees' entry into the labor market. These employment effects peak around 3 y after arrival and dissipate somewhat with longer residency. We also find that refugees who live in ethnic clusters are more likely to have full-year employment, and that this effect persists for at least 5 y after arrival.

These findings contribute to our theoretical understanding of the importance of ethnic networks on refugee integration and have implications for the design of refugee allocation policies. For theory, the results provide evidence that access to ethnic networks can catalyze refugees' economic incorporation. Unlike previous studies, which find no long-run effect on employment (17) or effects that decrease over time (18), our results indicate benefits in the short term and, at least, medium term. Furthermore, we do not find any evidence that ethnic networks disproportionately increase employment in low-skill jobs. Hence, our findings are difficult to square with the hypothesis that ethnic clusters provide only access to exploitative jobs and that refugees would achieve higher economic mobility outside of the cluster (23).

Our results also have implications for policy, highlighting one cost of allocation policies aiming to geographically disperse refugees. By making it more difficult for newly arrived refugees to tap into social networks of conationals, host countries are decreasing their employment chances. Moreover, at least in our study context, these policies not only dampen refugee

employment but also increase public spending on welfare benefits and lower refugees' tax contributions. Overall, the results suggest that redesigning placement policies to maximize the synergies between refugees and existing immigrant networks could bring benefits for both refugees and host societies (25).

ACKNOWLEDGMENTS. We thank David Laitin, Alexandra Dufresne, Duncan Lawrence, and participants at the 2017 American Political Science

Association conference for helpful comments. J.H. acknowledges funding from Carnegie Corporation of New York. D.H. acknowledges funding from the European Research Council under the European Union's Horizon 2020 research and innovation program (Grant 804307), the Swiss National Science Foundation (Grant 166172), the Swiss Network for International Studies, and the Leverhulme Trust. J.H. and D.H. also recognize funding from the US National Science Foundation (Grant 1627339). Any opinions, findings, conclusions, or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the funders.

1. United Nations High Commissioner for Refugees, Mid-year trends 2016, <http://www.unhcr.org/en-us/statistics/unhcrstats/58aa8f247/mid-year-trends-june-2016.html>. Accessed 10 February 2017 (2017).
2. A. Portes, R. L. Bach, *Latin Journey: Cuban and Mexican Immigrants in the United States* (University of California Press, 1985).
3. P. Oltermann, Angela Merkel pledges to cut German immigration figures but rejects limit. *The Guardian*. www.theguardian.com/world/2015/dec/14/angela-merkel-pledge-cut-german-immigration-figures. Accessed 10 February 2017 (2015).
4. L. Husted, H. S. Nielsen, M. Rosholm, N. Smith, Employment and wage assimilation of male first-generation immigrants in Denmark. *Int. J. Manpower* **22**, 39–71 (2001).
5. D. Lubotsky, Chutes or ladders? A longitudinal analysis of immigrant earnings. *J. Polit. Econ.* **115**, 820–867 (2007).
6. M. Sarvimäki, Assimilation to a welfare state: Labor market performance and use of social benefits by immigrants to Finland. *Scand. J. Econ.* **113**, 665–688 (2011).
7. B. Bratsberg, O. Raaum, K. Røed, Immigrants, labour market performance and social insurance. *Econ. J.* **124**, F644–F683 (2014).
8. F. Fasani, T. Frattini, L. Minale, “(The struggle for) refugee integration into the labour market: Evidence from Europe” (Discussion Paper 1088, Institute of Labor Economics, 2018).
9. J. Habyarimana, M. Humphreys, D. N. Posner, J. M. Weinstein, Why does ethnic diversity undermine public goods provision? *Am. Polit. Sci. Rev.* **101**, 709–725 (2007).
10. Y. Algan, C. Hémet, D. D. Laitin, The social effects of ethnic diversity at the local level: A natural experiment with exogenous residential allocation. *J. Polit. Econ.* **124**, 696–733 (2016).
11. K. Munshi, Networks in the modern economy: Mexican migrants in the U. S. Labor market. *Q. J. Econ.* **118**, 549–599 (2003).
12. P. Bayer, S. L. Ross, G. Topa, Place of work and place of residence: Informal hiring networks and labor market outcomes. *J. Polit. Econ.* **116**, 1150–1196 (2008).
13. K. L. Wilson, A. Portes, Immigrant enclaves: An analysis of the labor market experiences of Cubans in Miami. *Am. J. Sociol.* **86**, 295–319 (1980).
14. A. Portes, L. Jensen, The enclave and the entrants: Patterns of ethnic enterprise in Miami before and after Mariel. *Am. Sociol. Rev.* **54**, 929–949 (1989).
15. J. Hainmueller, D. Hangartner, D. Lawrence, When lives are put on hold: Lengthy asylum processes decrease employment among refugees. *Sci. Adv.* **2**, e1600432 (2016).
16. P.-A. Edin, P. Fredriksson, O. Åslund, Ethnic enclaves and the economic success of immigrants – Evidence from a natural experiment. *Q. J. Econ.* **118**, 329–357 (2003).
17. A. Piil Damm, Ethnic enclaves and immigrant labor market outcomes: Quasi-experimental evidence. *J. Labor. Econ.* **27**, 281–314 (2009).
18. M. Battisti, G. Peri, A. Romiti, *Dynamic Effects of Co-Ethnic Networks on Immigrants' Economic Success* (National Bureau of Economic Research, Cambridge, MA, 2016).
19. O. Åslund, P. Fredriksson, Peer effects in welfare dependence. *J. Health Econ.* **44**, 798–825 (2009).
20. L. A. Beaman, Social networks and the dynamics of labor market outcomes: Evidence from refugees resettled in the U.S. *Rev. Econ. Stud.* **79**, 128–161 (2012).
21. O. Åslund, P.-A. Edin, P. Fredriksson, H. Grönqvist, Peers, neighborhoods, and immigrant student achievement: Evidence from a placement policy. *Am. Econ. J. Appl. Econ.* **3**, 67–95 (2011).
22. A. Piil Damm, C. Dustmann, Does growing up in a high crime area affect youth criminal behavior? *Am. Econ. Rev.* **104**, 1806–1832 (2014).
23. J. M. Sanders, V. Nee, Limits of ethnic solidarity in the enclave economy. *Am. Sociol. Rev.* **52**, 745–773 (1987).
24. L. Marten, D. Hangartner, J. Hainmueller, Replication Code for: Ethnic networks can foster the economic integration of refugees. Harvard Dataverse, V1. <https://doi.org/10.7910/DVN/FXVVVDQ>. Deposited 10 July 2019.
25. K. Bansak et al., Improving refugee integration through data-driven algorithmic assignment. *Science* **359**, 325–329 (2018).

