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DP14296

THE LABOR MARKET INTEGRATION OF REFUGEE MIGRANTS IN HIGH-INCOME COUNTRIES

Courtney Brell, Christian Dustmann and Ian Preston

LABOUR ECONOMICS



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Discussion Paper DP14296
Published 09 January 2020
Submitted 06 January 2020

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www.cepr.org

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Abstract

We provide an overview of the integration of refugees into the labor markets of a number of high-income countries. Discussing the ways in which refugees and economic migrants are differently selected and so might be expected to perform differently in a host country's labor market, we examine employment and wages for these groups over time after arrival. There is significant heterogeneity between host countries, but in general refugees experience persistently worse outcomes than other migrants. While the gaps between the groups can be seen to decrease on a timescale of a decade or two, this is more pronounced in employment rates than it is in wages. We also discuss how refugees are distinct in terms of other factors affecting integration, including health, language skills and social networks. We provide a discussion of insights for public policy in receiving countries, concluding that supporting refugees in early labor market attachment is crucial.

JEL Classification: N/A

Keywords: N/A

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Acknowledgements

We are very grateful to Pieter Bevelander, Bernt Bratsberg, Ravi Pendakur, Matti Sarvimäki, and Marie Louise Schultz-Nielsen for making moments from their data on refugee integration available to us. This paper is in part based on data from Eurostat, Labour Force Survey, 2008 and 2014. This paper uses unit record data from the Household, Income and Labour Dynamics in Australia Survey (HILDA) and Building a New Life in Australia: the Longitudinal Study of Humanitarian Migrants (BNLA) conducted by the Australian Government Department of Social Services (DSS). The findings and views reported in this paper, however, are those of the authors and should not be attributed to the Australian Government, DSS, or any of DSS' contractors or partners. The responsibility for all conclusions drawn from the data lies entirely with the authors. Christian Dustmann acknowledges financial support from the DFG (grant number DU 1024/1-2 AOBJ: 642097) and the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement Number 833861). We are grateful also for comments from and discussion with Herbert Brücker, Anna Piil Damm, Francesco Fasani, Tommaso Frattini, Jens Hainmueller, Gordon Hanson, Tim Hatton, Marie Louise Schultz-Nielsen, Timothy Taylor and Heidi Williams.

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Abstract

We provide an overview of the integration of refugees into the labor markets of a number of high-income countries. Discussing the ways in which refugees and economic migrants are differently selected and so might be expected to perform differently in a host country's labor market, we examine employment and wages for these groups over time after arrival. There is significant heterogeneity between host countries, but in general refugees experience persistently worse outcomes than other migrants. While the gaps between the groups can be seen to decrease on a timescale of a decade or two, this is more pronounced in employment rates than it is in wages. We also discuss how refugees are distinct in terms of other factors affecting integration, including health, language skills and social networks. We provide a discussion of insights for public policy in receiving countries, concluding that supporting refugees in early labor market attachment is crucial.

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Introduction

Economic models of the integration of immigrants into a host society generally focus on two main categories of factors: firstly, what determines who chooses to migrate; and secondly, what determines the accumulation of human, social, and cultural capital after immigration. Along both dimensions, refugee integration is likely to differ considerably from that of the typical economic migrant (for a discussion, see e.g. Becker and Ferrara, 2019; Chin and Cortes, 2015). In addition, the refugee experience itself adds complexity to the integration of these migrants, who have often experienced traumatic episodes in their country of origin or extended periods travelling or in temporary living situations (such as refugee camps) before arriving in the host country.

While economic migrants decide to relocate to another country based on the relative opportunities afforded abroad compared to at home, refugee migration, being forced and often unexpected, is driven by different factors such as vulnerability to persecution and access to the wherewithal to enable flight. Refugees are therefore not economically selected to the same degree as economic migrants and have more limited ability to choose a specific destination to which they will migrate. As a result, refugees typically arrive in a host country with less locally-applicable human capital, including language and job skills, than economic migrants, and consequently are likely to start at significantly lower levels of wages and employability.

After arrival, incentives for refugees to improve their economic prospects in the host country are mixed compared to economic migrants. On the one hand, beginning at a lower level of human capital means that the potential costs of investment (such as forgone wages) are lower, and the rate of return on this investment may possibly be higher (at least according to some views of how immigrants accumulate human capital). If these effects dominate then refugees would be expected to undergo rapid assimilation, particularly early on in their stay. On the other hand, refugees' future is often uncertain. They do not know at first whether asylum

will be granted and, even if it is, permission to stay may be explicitly temporary and subject to periodic reassessment with the possibility of revocation. Some refugees may wish to return to their home country as soon as it becomes safe to do so, but when, if ever, that will become possible is uncertain. Such uncertainty may reduce the incentives to invest in host-country-specific human capital, such as language or social networks, and this may inhibit the integration of this group (see Adda et al., 2019). The uncertainty itself may also be psychologically distracting and a hindrance to integration.

Finally, the unique experiences of refugees will also affect their ability to integrate. Having experienced or witnessed conflict and persecution means that health issues, and particularly mental health issues, are common among the refugee population. The journey from their home to the host country, as well as potentially having been traumatic, may also have been long or involved extended stays in intermediate locations such as refugee camps. During this time refugees' human capital may have deteriorated as they may have had few opportunities to perform productive work.

Taken together, these factors mean that refugees' integration is likely to raise significant challenges. In this paper we provide an overview of what is currently known about the economic integration of refugees into high-income host countries, and in particular into their labor markets. We begin with a discussion of some facts about the refugee experience prior to arrival in the host country – their flight, journey, and stays in intermediate locations.

Following this, we provide an overview of the labor market outcomes of refugees in a variety of developed countries, based on an unusually broad collection of existing micro data sources, supplemented by evidence from data moments made available to us by a number of authors who have studied the topic. We will illustrate significant heterogeneity in refugees' outcomes across different host countries, with the general pattern that refugees start off behind

other immigrants in employment and wages, and, while they catch up over time, this catch up is more pronounced in employment rates than in wages. We also offer a non-exhaustive but illustrative overview of some of the recent research in this area.

Although our focus is on economic integration, and in particular labor market outcomes such as employment and wages, integration of immigrants into a society – whether refugees or economic migrants – ultimately has to do with a broad development of capacities for successful participation in the host society, supporting a sense of social belonging in the destination country.¹ Moreover, these wider dimensions of integration are often important determinants of economic outcomes. Thus, we will also delve into some broader social factors: health, language skills, and social networks. These factors present particular challenges for the integration of refugees and as such, finding ways for policy to take these challenges into account may help in easing refugees' integration into the workforce and society as a whole.

We conclude with a summary and a discussion of insights for public policy in receiving countries with regard to refugees. The prospects for successful integration depend not just on actions of the refugee or the immigrant but also on the openness and specific policy choices of the receiving community. Many recipient countries have put considerable effort and expense into measures targeted at supporting refugees' absorption into their societies and economies, but it is not always clear that the outcomes of these policies are in line with prior expectations or justifications.

¹ For example, Harder et al. (2018) develop measures of integration along six dimensions: psychological, economic, political, social, linguistic and navigational. The influential conceptual framework of Ager and Strang (2008) identifies ten domains of integration within four areas of attainment.

The refugee experience

The diversity of migrant experience means that telling individual stories risks portraying their details as representative, when in fact the real-life variety is beyond what it is possible to present through anecdotes or case studies. With that warning in mind, such stories can still be valuably illustrative and highlight some of the unique circumstances that refugees face. Before discussing the refugee experience in general terms, we briefly describe five individual refugee journeys, each anonymized but adapted from a documented story:²

Example A: A student and waitress lived with her husband and children in a refugee camp near Damascus for several years after their home was destroyed in the Syrian civil war. As fighting between opposing forces neared, they paid to be trafficked by bus to the Turkish border, a dangerous journey that involved passing through areas under the control of several rival groups. After a short period staying in a camp in Turkey, they risked a perilously overcrowded boat journey to Greece and from there proceeded mostly on foot across the Balkans, often hopping between camps on the way. After being trafficked across the Hungarian border, they were able to take a train to Munich and finally claim asylum there. Their journey lasted about a month.

Example B: A Rohingya family and their business were persecuted by the army in a village in Myanmar. After their home was confiscated they fled their village and tried to establish a life elsewhere in Myanmar. Their son moved to study in Yangon where he distributed political pamphlets, for which he was arrested and tortured but secured release through bribery. Fearing further recrimination, he fled to Thailand and on to Malaysia where he spent nine years working as an unauthorised immigrant before being recognized by the UN as a refugee. He took a boat journey from Indonesia to Australia, where he resulted in him being held for 32 months in an immigration detention center. A decade later he works in construction and for community organizations in Melbourne, but still awaits permanent protection status, and has little contact with his family.

Example C: A child was born in a refugee camp of some 200,000 people in Kenya, to which her parents had fled from the civil war in Somalia. She lived there for her first eight years with her parents, siblings and father's other wives. She received little education and facilities in the camp were rudimentary. Her family was eventually selected for resettlement and moved to Baltimore where they remained for seven years, before relocating to Buffalo to be closer to

² The stories are loosely based on original reports available at: <https://www.nbcnews.com/storyline/europes-border-crisis/refugee-crisis-one-familys-journey-syria-germany-n425636>; <https://www.theguardian.com/world/2019/aug/04/rohingya-refugee-myanmar-australia-oppression-suffering>; <https://buffalonews.com/2019/05/18/from-kenyan-refugee-camp-to-ub-commencement-one-grads-story/>; <https://www.theguardian.com/environment/2019/jul/29/honduran-asylum-seeker-dam-protester>; <https://www.refugee-action.org.uk/adam/>

relatives and a larger Somali community. She is now studying for a PhD in education.

Example D: A mother of seven in a small community in Honduras participated in protests when water supplies to her village were compromised by a dam construction project. She was arrested and charged with trespass but the case was eventually dismissed. When a fellow protester was shot dead by police, she decided to leave with her two-year-old son and joined a migrant caravan travelling through Guatemala and Mexico to the US border, including a terrifying journey on top of a freight train. After crossing the border at Tijuana, she was held in detention for two weeks and spent a month in a shelter before relocation to Portland, Oregon, where she awaits a decision on her asylum application.

Example E: A young gay man moved to the UK from Algeria when his family discovered he was gay and tried to force him to marry his cousin. Struggling with depression, he stayed for several years with another cousin, overstaying his visa and helping with domestic chores while avoiding the formal economy. After learning from a charity that he might be eligible for refugee status, he applied for and was granted asylum. He now works as a sous-chef.

This is a small collection of individual stories, encapsulating just a tiny proportion of the suffering and distress underlying refugee statistics. According to the UNHCR, in 2018 there were 70.8m people forcibly displaced worldwide, including 25.9m international refugees and 3.8m individuals awaiting asylum decisions (UNHCR 2019a). For each one of these millions, there is an underlying story of hardship like those above.

As we see from these examples, the process of seeking refuge can have multiple stages, and at each stage important decisions are made that will determine not only where and when a refugee will end up settling into a (semi-)permanent home, but also will influence their integration prospects after arrival. To structure our discussion of these decisions and their potential consequences for refugee integration, we will break down the refugee path from origin to destination into the following stages as depicted in Figure 1: flight, journey, intermediate destination, and arrival.

[Figure 1 around here]

Flight

During the past decade, the number of individuals displaced by war or persecution has increased dramatically, in large part due to ongoing conflicts in Asia and Africa (notably in Syria, Afghanistan, and South Sudan, which together have produced half of the global refugee and asylum-seeker stock in 2018; adding Myanmar and Somalia to this list accounts for two thirds of global refugees)³ (UNHCR, 2019a). The refugees in Examples A, B and C are each fleeing civil conflict, religious or ethnic persecution whereas the refugee in Example D is fleeing lethal police corruption and in Example E inadequate protection of minority human rights.

The decision to flee one's home is traumatic and even in the midst of ongoing conflict or persecution many prefer to stay put. Aksoy and Poutvaara (2019) point out that, even if economic selectivity may be expected to be less strong for refugees than for other types of migrants, it will not be absent, and they show this using data for several countries. Wealth that would be abandoned in the home country upon flight will be a factor in the decision, as will economic prospects in possible destination countries. Of those that would like to leave, not all may have access to the resources needed to do so. In addition, persecution risk may be associated with economic prosperity (as will be the case, for example, if motivated by perceived economic factors) and so may the risks associated with the journey (if the wealthier can buy their way out of dangerous situations or afford more reliable transport).

³ We follow here the UNHCR definition of a refugee, which includes “individuals recognized under the 1951 Convention relating to the Status of Refugees, its 1967 Protocol, the 1969 Organization of African Unity (OAU) Convention Governing the Specific Aspects of Refugee Problems in Africa, the refugee definition contained in the 1984 Cartagena Declaration on refugees as incorporated into national laws, those recognized in accordance with the UNHCR Statute, individuals granted complementary forms of protection, and those enjoying temporary protection. The refugee population also includes people in refugee-like situations.” In contrast, asylum seekers are “individuals who have sought international protection and whose claims for refugee status have not yet been determined... irrespective of when those claims may have been lodged” (UNHCR, 2019a; for more detail, see Hatton, 2016, 2017, 2019).

Nonetheless if non-economic factors have heightened importance for refugees, that may mean that refugee populations are likely to include both low and high skilled individuals whose skills are more suited to their country of origin than to their destination country, and demographic types who might be unlikely to migrate for economic reasons. This is not to say that refugees will not be distinctive in some respects since, as discussed, they will still be selected in other ways. Additionally, if there is heterogeneity in individual economic and cultural adaptability then refugees, unlike economic migrants, will also not be selected in those terms and this could tend to inhibit rapid integration.

Journey

Many of those displaced by conflict or persecution remain in their country of origin. In fact, of the stock of displaced persons recorded by the UNHCR as at 2018, only 42% were refugees and asylum seekers; the remaining 58% being internally displaced. Many more still are displaced to nearby countries – nearly four fifths of refugees live in countries neighboring their country of origin. These nearby destinations are typically developing; only 16% of refugees are hosted by countries in developed regions (UNHCR, 2019a). Thus, as well as the decision to flee, refugees arriving in developed countries are often selected by having undertaken an especially long and difficult journey in search of a better life. The refugees in Examples A, B and D each make long journeys, at least two of them involving particularly hazardous modes of transport.

The details of a refugee's journey may differ hugely, but there are obviously many important choices to be made along the way. Some paths are well-understood by those taking them to have significant risks of death (for example, the UNHCR reports that in 2018, with 141,000 Mediterranean arrivals to Europe, there were nearly 2,300 estimated dead or missing) (UNHCR, 2019b). Apart from mortal hazards, the decision of whether to try and travel by legal means is also important in determining the potential risks associated with a route.

Intermediate destinations

During their journey, refugees may often stay, perhaps for prolonged periods, in another country along the way. In some circumstances, this will be among the general population, residing either with or without legal authorisation. Alternatively, this may involve a stay in a designated refugee camp. Both Examples A and C, for example, involve time spent in camps, in one case for years and in another for just days. It is difficult to find reliable information about how typical it is for refugees to have had some experience in camps but clearly many arrive without ever having done so.

The UNHCR (2019a) estimated that 60% of refugees lived in non-camp accommodation in 2018, though of course this number varies widely from many developed countries where essentially all refugees live in private accommodation to some of the least developed countries where the majority of refugees reside in camps. Refugee camps vary greatly in their size, funding level, organization, and longevity, from Kutupalong in Bangladesh, established in 1991 and recently expanded to a population of over half a million, to La Linière in France, opened in 2016 and closed just a year later, housing 1600 refugees at its peak. While it is difficult to generalize, for the most part facilities are rudimentary, opportunities for work and education are minimal or informal, and health and safety risks are common. Spending extended periods in a refugee camp could seriously affect future prospects for integration into a developed labor market, since there may be limited opportunities to engage in the formal workforce while residing in a camp, and so residents' human capital may degrade over time.

A refugee camp may be a direct pathway to resettlement in a developed country, as occurs in Example C. However, this is not an especially common experience (Hatton, 2019) – the UNHCR (2019a) records that only 92,400 refugees were resettled by 25 countries in 2018. Resettlement is one of three durable solutions considered by the UNHCR for refugees,

voluntary repatriation or local integration being alternative possibilities (UNHCR 2018). The process of selection for resettlement introduces a further set of criteria bearing on selection of the refugee population arriving in high income countries. Of refugees that are not resettled, some will eventually decide to move on or return home, but many others may remain. Some long-standing camps have turned into de-facto permanent towns or merged into nearby cities (such as Deir al-Balah in Gaza).

Arrival

The method of arrival in a host country, whether resettled, legally arriving directly, or illegally arriving, may have important implications for an asylum-seeker's legal status and hence ability to undertake work. Resettled individuals will arrive with asylum status already determined and may therefore be at an advantage in joining the local labor market. Irregular arrivals, on the other hand, may be more likely to spend time in detention while their claims are being processed (as was the case in Examples B and D), which could have impacts on mental health as well as human capital. Of course, this is likely to vary significantly between host countries and over time as their policies change.

The nature of reception in the receiving country is also likely to be of great significance. Refugee status is not typically granted immediately and refugee migrants can find themselves subject to procedures of validation that inhibit their ability to work and aggravate feelings of alienation, perhaps even appearing to replicate experiences of interrogation and incarceration from which the individual may be fleeing (Phillimore 2011). Such procedures may hinder early labor market attachment, allowing skills to atrophy while the individual is unable to work, and create habitual persistence of dependence on welfare.

Furthermore, refugees are frequently subject to policies of forced dispersal, as described in sections below for several North European countries, which isolate them from the sort of social networks of previous immigrants that may be critical to job finding and social learning among typical migrants. In addition, refugees' integration and assimilation may be significantly hindered if they face hostility or discrimination from host communities.

To summarize, the labor market integration of refugees is likely more challenging than that of economically motivated migrants. We may expect refugees to arrive with skills less adapted to the receiving country's economic needs, and to be of a composition that is less conducive to – on average – self-sufficiency through economic activity. Length and uncertainty of expected immigration duration may lead to conflicting effects on investment in skills specific to the receiving country's economy. Refugees are likely to be initially less well equipped with productivity-enhancing proficiencies in host countries' labor markets, and thus disadvantaged in comparison to economic migrants in terms of employment and wages. In the next section, we investigate whether this is borne out in the data.

Evidence on Labor Market Integration

Our investigation of the labor market integration of refugees focuses on employment and wages. One challenge in studying refugees is that they typically make up only a small fraction of the overall immigrant population, so that their numbers are small in general survey data. Moreover, most surveys or administrative datasets do not provide markers that allow a distinction to be drawn between economic and refugee migrants. Even when available, differences in measurement across receiving countries and differences in the definition of refugees mean that cross-country comparisons must be read with caution. In addition, refugees in different countries are subject to quite different integration policies and legal regimes, as

well as often being drawn from quite different areas and cohorts. Disentangling these effects would be a challenge even with plentiful data.

Our analysis draws on three sets of data sources. First, we use various micro data sets that either focus specifically on refugees (including the UK's Survey of New Refugees and the Australian Building a New Life in Australia survey), contain refugee boost samples (the German Socio-Economic Panel), or are detailed enough to naturally contain a meaningfully-sized sample of the refugee population. Where data is from a publicly available survey covering only one country, we will refer to these as the "country-specific public survey" data. Second, also within the class of public survey data, we single out the EU Labor Force Survey (LFS), from which we use data collected during ad-hoc modules administered in 2008 and 2014 that allow the identification of different types of immigrants, as a cross-national public survey. Finally, we have obtained from the authors of various papers on refugees that are based on census and register data, statistics on refugees and other immigrants' outcomes that will allow comparison across these countries.⁴ We refer to these sources of data as the "administrative" data sources.

Each of these types of data has advantages and disadvantages, and we hope that – by providing evidence based on all three – we will be able to paint a comprehensive picture of the way in which refugees integrate into the labor markets of various countries, in comparison with other immigrants and natives.

Employment

Overall, employment rates of refugee migrants are very low immediately after arrival in the host country, but typically increase quite rapidly over the first few years after migration.

⁴ These papers include Bevelander (2016), Bratsberg et al. (2019), Mata and Pendakur (2017), Sarvimäki (2017), and Schultz-Nielsen (2017).

However, there is significant heterogeneity between countries. Figure 2, drawing on administrative data and country-specific public survey data sets, shows the employment rates of refugees and other migrants (typically those who migrated for labor market and/or family related reasons) over time after migration for several host countries. Care should be taken when reading this plot, as the “other immigrant” samples vary in their construction and may not be precisely comparable to the refugee samples (see the online Appendix for details), but the general trends are clear.⁵

[Figure 2 around here]

Except for the United Kingdom, United States, and Canada, employment rates for refugees are below 20 percent in the first two years after arrival. In contrast, other immigrants have higher employment rates at arrival in all countries, though these still vary significantly between countries. Refugees’ employment increases in subsequent years at different rates across countries; rapidly so in Australia, Sweden and Norway, but more modestly in Denmark, Germany, and Finland. In some countries, such as Sweden and Canada, refugees appear to mostly close the employment gap with other immigrants after a decade in the country, while in others such as Norway and Finland, the gap remains large and stable over this period. The most notable outlier country in this figure is the US, where refugees’ employment rates track those of other immigrants closely. It is not entirely clear why the US appears so different in this

⁵ In an online Appendix, we describe our sources and methodology in detail. Sources, samples, and empirical methods differ from series to series, and the “other immigrant” categories vary in their composition. Data sources include the Household, Income and Labour Dynamics in Australia (HILDA) survey (DSS, 2018b), the Building a New Life in Australia (BNLA) survey (DSS, 2018a), the German Socio-Economic Panel (SOEP) (SOEP, 2019; Goebel et al., 2019), the UK Labour Force Survey (LFS) (ONS, 2011), the UK's Survey of New Refugees (SNR) (UKBA, 2010), the American Community Survey (ACS) (Ruggles et al., 2019), the US Yearbook of Immigration Statistics (YIS) (OIS, 2018), and the EU Labor Force Survey (LFS) (Eurostat, 2019). It should also be noted that some of the series presented are based on single cross-sections, while others are drawn from longitudinal or repeated cross-sectional data. In those series based on single cross-sections, variation over time since arrival is provided purely by analysis of different arrival cohorts, whereas for data covering multiple years of observation, changing outcomes over time of fixed cohorts are combined with variation between cohorts to give the overall effect. In both cases selective outmigration plays a role in determining the observed composition of migrants who have been in the country a given number of years (Dustmann and Görlach, 2015).

figure; possible explanations could relate to the nature of the US labor market or to the nature of the settlement process in the US but require further investigation.

[Table 1 around here]

To complement Figure 2, the employment rates of refugees 2 years and 10 years after migration are also listed in Table 1, along with the differences between the employment rates of refugees and natives, and between refugees and immigrants with the same length of residency. For almost all countries, the gap between refugees and other groups is closing over time, although refugees have persistently lower employment rates than other immigrants and natives 10 years after migration. As mentioned, the exception is the United States, where refugees appear to have caught up to other immigrants after just two years, and to natives by 10 years after migration (a finding that is compatible with the existing literature).

[Table 2 around here]

Table 2 provides additional detail, by distinguishing between employment growth rates over the first 5 years in the country, and years 6-10. On average, employment growth of refugees is substantially higher than that of other migrant groups in both periods, a regularity that also holds for almost all countries when viewed in isolation. Notably, while employment of other immigrants is close to flat for several countries in the second period, refugees continue to experience growth, indicating an integration process of longer duration.

[Figure 3 around here]

A similar picture emerges from Figure 3, based on data instead from the 2014 EU Labour Force Survey. The figure plots the employment rate of refugees against that of other immigrants, for those who have been in the country for less than 10 years, between 10 and 19 years, and for more than 19 years. Each point represents a European country. The figure shows that for those who migrated less than a decade ago, refugees in almost every country plotted

experience substantially worse employment rates than other immigrants (the only exception being Switzerland), mirroring the findings from Figure 2 and Table 1. However, refugees with between 11 and 19 years residency are employed at rates much closer to other immigrants, and any difference appears to be largely erased for those with residency longer than 20 years.

Since the integration process may differ substantially for different demographic subgroups, we also considered employment outcomes of male and female groups separately. Refugee women appear to be employed at particularly low rates – the ratio of female to male employment rates is smaller for refugees than for other immigrants (and both are smaller than for natives) in each country considered. This pattern is especially dramatic in the immediate years after migration, and while this ratio for refugees remains persistently smaller than that of natives even after a decade, in most cases the difference between refugees and other immigrants appears to significantly shrink over this timescale. We also looked at the data across the countries in the EU Labour Force Survey to probe whether patterns of age, gender, or education level could explain some of the gaps we have seen between the outcomes of refugees and other immigrants. However, employment gaps conditional on these factors are qualitatively similar to the analogous unconditional results, leading us to the conclusion that differences in the demographic compositions of groups (at least in these dimensions) are not the main drivers of the differentials we have observed.⁶

Some general conclusions emerge from this discussion. First, initial employment rates of refugees are considerably lower than those of other immigrant groups. This finding is line with our expectations, as refugees are likely to arrive with skills less adapted to the receiving country's labor market. Second, refugee employment increases most sharply during the first 2

⁶ For more detail on gender breakdowns and conditional labor market outcomes, see the online Appendix. The conditional employment plots are based on linear probability regressions where we control for age, gender and education.

or 3 years after arrival. This pattern suggests that the first years after arrival are a crucial period for integration. Third, refugee employment continues to grow quickly for the rest of the first half decade after the first few years, and indeed continues to grow in the second half-decade, although at a slower rate. This pattern highlights that the timescale of integration appears to be much longer for refugees than for other immigrants. Fourth, employment levels of refugees in the longer term (a decade after arrival) continue to vary significantly between countries, but in many cases do not approach the levels of natives or other immigrants. However, there is some evidence that after the first decade, employment rates of refugees seem to converge to those of other immigrants. Finally, female refugees experience persistently lower employment rates than their male counterparts, and they are particularly missing out on the rapid employment growth experienced by men in the early years after migration (this is illustrated in online Appendix Figure A1).

Wages

In addition to being employed at lower rates than natives and other immigrants, even those refugees who do manage to find employment generally experience lower wages than the other groups. Their relative wage position gradually improves over time compared to an average native but not, in most countries, markedly faster than other immigrants. Again drawing on country-specific public survey and administrative data (reliable wage data being available only for a subset of countries for which we observe employment), we show in Figure 4 the average wage levels (calculated conditional on being in employment) of refugees and other immigrants as a fraction of average natives wages over the first ten years after arrival.⁷ In addition, we list average wage ratios of refugees and other groups after two and ten years in Table 3. For

⁷ We simply calculate the average wage of all employed working-age natives without allowance for differences in age or other compositional factors, and compare it to the average wage of all working-age refugees who have been in the country for a given number of years (and similarly for other migrants). The number of countries represented is fewer than in Figure 2 since we do not have reliable wage data for as many countries as we do for employment.

instance, while average wages of refugees who had been in the US for 2 years amounted to 40 percent of native wages and 49 percent of other immigrants' average wages, after 10 years, average wages had improved to 55 percent of natives and 70 percent of other immigrants in the same position. It should be noted that changes in relative wages may be due to both wage changes of those in employment, and changes in the composition of refugees who are in work.

[Figure 4 and Table 3 around here]

Several general observations follow from Figure 4. First, as compared to employment rates where the growth in the first few years is much more rapid than that of subsequent years, refugee wages increase slowly but consistently relative to those of natives over time. Second, even in the long-term, refugee wages often do not approach those of natives, and continue to lag significantly behind those of other immigrants. Third, even in countries where refugee employment rates quickly approach the levels experienced by natives or other immigrants (like the United States), the corresponding wage gaps can remain large and persistent. Finally, while cross-country variation in refugee wages relative to natives is still significant, it is not nearly so large as that of employment rates.

As with employment rates, we also investigated whether these results can be explained by compositional differences between refugee populations and other groups using data from the EU Labour Force Survey. Again, we do not see qualitative changes in the results when controlling for age, education, and gender, indicating that these factors are not the primary cause of the observed trends in refugee wages.

Previous Evidence

Overall, the patterns of refugee employment and wages discussed in the previous sections are consistent with the findings of previous literature. Of course, other studies also offer different areas of focus, and thus can fill in some other facets of the picture. For a review of the literature

on immigrant integration, de la Rica et al. (2015) offers a useful starting point. Dustmann and Görlach (2015) provide an assessment of the empirical challenges in estimating earnings assimilation for immigrant populations. Less is known about the economic integration of refugee immigrants specifically, though a substantial literature has begun to develop in recent years. For reviews of the existing evidence on refugee labor market integration, useful starting points are Chin and Cortes (2015), Bevelander (2016), and Becker and Ferrara (2019).

For the United States, the previous literature suggests that refugees' employment rates are not dissimilar to those of other immigrants, but a large initial gap in earnings exists, with a subsequent relative improvement. For example, Cortes (2004) broke ground by looking at refugees together with, but distinguished from, other immigrants. Using public use Census data from 1980 and 1990, she separated immigrants arriving between 1975 and 1980 into refugees and economic immigrants according to country of origin and year of immigration. Refugees are found to initially earn less and work fewer hours than other immigrants, but their earnings grow faster. The difference between the groups is attributed to longer expected duration of stay. Chin and Cortes (2015) show how this steeper path of labor market outcomes is associated with greater gains in education and language proficiency.

Studies have also looked at occupational prestige or status, which attempts to measure the extent to which, say, a refugee who is an engineer or teacher in another country may end up driving a cab or working in a fast-food restaurant in a high-income country. Akresh (2008) used survey data from the 2003 New Immigrant Survey, which records the last job held abroad, to show that refugees display the sharpest downgrading in occupational prestige, and the steepest subsequent upgrading of any immigrant group. Using the same survey, Connor (2010) shows that refugees, while employed at similar rates to other immigrants, still suffer a gap in earnings and occupational status, attributable in large part to differences in education, language ability and neighborhood.

Both the time at which refugees arrive and their age at arrival can affect their integration prospects as well. Capps et al. (2015) and Fix et al. (2017) document more recent outcomes using the American Community Survey, identifying refugees indirectly by country of origin and year of arrival, and showing refugees continuing to lag behind natives in incomes and education, but not employment rates. Evans and Fitzgerald (2017) use the same approach and data and focus on the importance of age at arrival. Refugees arriving in the United States before age 14 perform similarly to natives, teenage entrants do somewhat worse, and adult refugees do much worse in employment, earnings and welfare dependency (though there is rapid improvement in early years).

In contrast to the US experience, refugees in European countries seem to lag behind other immigrants not just in earnings, but also in employment rates, although there is evidence for some catch-up in both dimensions over time. The European evidence seems also be mirrored by studies for Canada (Aydemir, 2011; Bevelander and Pendakur, 2014) which tell stories of initial disadvantage but rapid growth in employment rates for refugees.

For Europe, a concentration of papers based on excellent register data investigate the labor market integration of refugees for Scandinavian countries.⁸ Unlike the situation in the United States, refugees in these countries are observed to experience very low employment rates in the initial years after migration. Although their position improves during the first decade in the country, they typically do not close the gap to natives and other immigrant groups and even sometimes appear to fall away over time (Bratsberg et al., 2014, 2017; Schultz-Nielsen, 2017). Low labor market attachment leads to high welfare dependence observed in these studies. Among those who are employed, earnings are low (Schultz-Nielsen, 2017;

⁸ For Denmark, see Schultz-Nielsen (2017); for Finland, Sarvimäki (2017); for Norway, Bratsberg et al. (2014, 2017); for Sweden, Åslund et al. (2017), Bevelander and Lundh (2007), Bevelander and Pendakur (2009, 2014), Bevelander (2011), and Lundborg (2013).

Sarvimäki, 2017; Bratsberg et al., 2014, 2017), though earnings trajectories are steeper for refugees than for other migrant groups (Bevelander, 2011, 2016). Local employment conditions matter, particularly for the low skilled (Bevelander and Lundh, 2007) and integration patterns are different for different origin groups (Lundborg, 2013). Bakker et al. (2017) provide an example from the Netherlands of the use of register data elsewhere in Europe, finding again that refugees begin at a large disadvantage compared to other immigrant groups, but that the gap closes over time.

Other analyses for European countries are typically based on survey data. The finding of large gaps in employment, income, and job quality relative to other migrants which diminish over time is confirmed by a number of papers using the EU Labour Force Survey, a large dataset with ad hoc modules on migrants in 2008 and 2014 (Dumont et al., 2016; Dustmann et al., 2017; Fasani et al., 2018; Zwysen, 2019).

For the United Kingdom, Bloch (2008) identifies high levels of overqualification among the employed. A number of papers (see discussion in Ruiz and Vargas-Silva 2017, 2018) use the UK Labour Force Survey to show that refugees initially have lower employment and wages than comparable economic migrants but show faster growth, at least in employment. Ruiz and Vargas-Silva (2017) and Cebulla et al. (2010) find similar results using the UK Survey of New Refugees.

Other Factors Affecting Refugee Labor Market Outcomes

As we discussed in the introduction, there are many reasons why refugees' labor market integration might be expected to differ from that of other migrants. Their backgrounds and histories may inhibit labor market attachment or suppress the wages they can command in a host country. One potential mechanism for this is that both the selection of refugees and their

experience of flight may mean that health status, and especially mental health status, will differ from both natives and other migrants.

For similar reasons, refugees' difficulties in economic integration are also expected to coincide with slower integration in broader social dimensions. After arrival, the development of host-country language skills and social networks are simple markers for social integration and will also clearly be important determinants of success in economic integration. We discuss these factors in this section, noting how refugees differ from other migrants and the resulting effect this is expected to have on labor market outcomes.

Health

Although many studies have found immigrants in general to be typically healthier at arrival than natives, refugees tend to arrive with lower levels of health than other types of immigrants (see, for example, Giuntella et al., 2018). For the United States, Chin and Cortes (2015) find refugees are almost twice as likely to report being in “poor” or “fair” health as compared to other immigrants (17 vs. 9 percent), and similarly much more likely to report being “troubled by pain” (18 vs. 9 percent). This difference could be both due to the fact that refugees are selected in a different way than other migrants (in particular, with lower human capital, which has a positive association with health) and due to the deleterious effects of their experiences in their home country or during their subsequent flight.

Fleeing traumatic and emotionally damaging circumstances will affect psychological and physical health, and occurrence of mental health difficulties among refugee populations is well evidenced (Porter and Haslam 2005). This may only aggravate the particularly low initial economic fitness and adaptability of refugees as recovery from trauma and continuing distress over the circumstances from which the individual has fled distracts from integration (see for example, Phillimore, 2011). In particular, the incidence of mental illness among refugees is

likely to be much higher than in the general population, due to experiences of violent, life-threatening, and traumatizing events in their origin country, adverse conditions during flight or in refugee camps, and potentially exposure to violence or sexual and physical exploitation during and after migration. In addition, stress and anxiety caused by uncertainty about their status in a host country can be expected to exacerbate these problems. Schock et al. (2016), studying refugees in Germany, report that more than 60 percent of adult refugees and more than 40 percent of adolescents have experienced violence in their countries of origin and/or during their migration. Mental health conditions may be an important factor that inhibits individuals' ability to cope with an unfamiliar environment by disrupting the acquisition of new skills and establishment of social contacts. Indeed, some studies have found mental health indicators to be important predictors of refugee labor market outcomes: for example, in the Netherlands (de Vroome and van Tubergen, 2010) and the United Kingdom (Ruiz and Vargas-Silva, 2018).

Estimates on the prevalence of mental health disorders among refugees vary considerably, but the overall picture is quite clear of an alarming incidence of mental health issues, in particular depression and post-traumatic stress disorder (for example, Bogic et al., 2015; Priebe et al., 2016; Giacco et al., 2018). Bogic et al. (2015) point out that around two-thirds of studies of longer-term refugees (displaced for more than five years) report prevalence of post-traumatic stress disorder greater than 20 percent (although lower quality studies tended to report higher rates). Focusing on more reliable studies, the authors suggest that refugees may be several times more likely than general Western populations to suffer either from post-traumatic stress disorder or from depression.

Another possible consequence of refugees' traumatic or violent experiences, along with inhibiting their integration into the host society and economy, may be antisocial behavior after resettlement. Studying the relation between exposure to conflict and violent behavior of

refugees in Switzerland, Couttenier et al. (2019) report that cohorts exposed to civil conflicts or mass killings during childhood are on average 40 percent more prone to violent crimes than co-nationals without this exposure. Moreover, the heterogeneity of integration policies across cantons also allows the authors to show that these effects can be eliminated through policies encouraging early labor market attachment. Horyniak et al. (2016) link trauma and mental illness among refugees, particularly men, to substance abuse.

Thus, the existing evidence seems to suggest that refugees' experiences with violence and trauma can have serious effects on their mental health, and that the share of refugees suffering mental illnesses such as post-traumatic stress disorder is far higher than that in the general populations of host countries. This in turn will have serious consequences for their labor market integration, as well as for the host society in general.

Language

Proficiency in the language of the receiving country is among the most salient and frequently discussed aspects of human capital deficiency among arriving immigrants (see e.g. Dustmann and Fabbri, 2003). In the United States, numerous authors have provided evidence of the initial weakness and formidable subsequent role of English fluency in adaptation of refugees to the US labor market (see e.g. Connor, 2010; Chin and Cortes, 2015; Evans and Fitzgerald, 2017).

In Europe, Dumont et al. (2016) document large variation between EU host countries in the levels of refugee language proficiency – for example, higher in Spain and lower in Germany. Across the European Union as a whole, 24 percent of refugees with less than 10 years residence have advanced host-country language knowledge, increasing to 49 percent for those with more than 10 years residence (whereas the analogous figures for other non-EU born are 54 percent and 69 percent respectively). Indeed, much of the gap between native and refugee employment in the EU is argued to be accounted for by differing language skills: 59

percent of refugees with at least intermediate level host country language skills are employed as opposed to only 27 percent of those below this level.

More directly addressing the mechanisms linking language proficiency and employment, Fasani et al. (2018) report that about a quarter of refugees across Europe cite language difficulties as the principal obstacle to employability and Bloch (2008) gives a similar figure for the UK. Auer (2018) uses random assignment of refugees across Swiss language regions as a plausible source of exogenous variation and finds an association of language knowledge with increased probability of job finding.

To directly demonstrate how refugees' language skills compare to those of other migrants, and how this changes over time, we make use of the EU Labour Force Survey's 2014 ad-hoc module on the labor market situation of migrants. Immigrants were asked to rate their proficiency in the host country's language from "beginner or less", "intermediate", "advanced", or "mother tongue." As we show in the online Appendix, the overall pattern is that refugees appear to consistently begin with lower language proficiency than other immigrants (the only exception being in Switzerland). While the language skills of both refugees and other migrant groups appear to improve slowly but substantially over time, refugees' proficiency seems to persistently lag behind that of the other immigrant groups, even decades after migration.

As with labor market outcomes, the story does, however, appear slightly different in the US. Looking at the American Community Survey (ACS), language proficiency is recorded on a five-response scale from "does not speak English," to "speaks only English at home." The results of this survey, shown in the online Appendix, again show that refugees arrive with lower levels of language proficiency than other migrants – at the time of migration, only about 44 percent of refugees speak English "well" or better, compared with 64 percent of other

immigrants. However, while other immigrants do not tend to see particularly strong gains in English speaking skills over time, refugees rapidly improve and even overtake other migrants' speaking abilities around 10 years after arriving in the United States.

The ACS also asks about linguistic isolation, measured by whether an individual lives in a household in which no person above the age of 14 speaks English "very well" or better. Refugees are initially much more likely than other immigrants to live in houses in which no member is proficient in English, by a margin of 54 percent to 32 percent. Again, while other immigrants do not see much change in this measure over two decades, refugees' rate of linguistic isolation rapidly drops in the years following migration, falling below that of other immigrants after around a decade.⁹ Together, these patterns suggest that considerable effort is made in the refugee population to acquire English language proficiency, seemingly above that of other US immigrant groups.

In addition to having well-documented impacts on employability and other economic outcomes, language proficiency is also more generally important for social integration. In particular, Cheung and Phillimore (2014) demonstrate its importance to social network formation.

Social Networks

The formation of social connections, including both bonds with co-nationals or co-ethnics and bridges to native communities, is important to the broader integration process (Ager and Strang, 2008; Cheung and Phillimore, 2014) and assists in the economic assimilation of refugees. The economic literature typically measures social networks in an indirect way, by counting individuals of same or similar origin in the region of settlement. An obvious problem of

⁹ The online Appendix offers more detail on language skills for refugees and other immigrants, including figures illustrating both the EU and the US data.

inferring the economic effects of social networks arises if there is sorting – say, if newcomers are more likely to choose to settle where economic conditions are favorable. This concern is typically addressed in the literature by concentrating on situations of random settlement policies for refugees.

As well as evidently being an important measure of social integration per se, the existence of local social networks has also been argued to be important for migrants' job search prospects, for example if job opportunities are communicated through established networks such as ethnic communities. Beaman (2011) develops a model along these lines in which employed individuals pass job offers to unemployed network members. In the short run, new arrivals increase the number of unemployed individuals seeking job information, while the number of employed members who can provide this information remains unchanged, which implies that a surge of recently arrived refugees has a negative effect on job finding rates in the short term. However, as refugees do become employed and thus able to pass along additional job offers, a positive information effect eventually dominates. Examining these implications for the labor market outcomes of refugees resettled in the United States, Beaman finds that an increase in the number of social network members resettled in the same year or one year prior to a new arrival leads to a deterioration of outcomes, while a greater number of tenured network members improves the probability of employment and raises wages.

Evidence from Europe generally supports a similar story, with larger social networks improving the labor market outcomes of refugees. For example, making use of dispersal policies for refugees in Scandinavia, several authors (e.g. Edin et al., 2003, 2004 for Sweden; Damm, 2009, 2014 for Denmark) have found that living in areas with high concentrations of co-ethnic or other minority individuals can improve the labor market outcomes of these refugees. These studies find that the effects of larger social networks are amplified for members of higher-skilled or better-employed groups, which is consistent with Beaman's (2011) model

of job information dissemination through ethnic networks. In line with these results, Brücker et al. (2019) find evidence that dispersal policies in Germany have harmful effects on the labor market outcomes of the dispersed refugees. Further supporting the story of job opportunity transmission through social networks, Dagnelie et al. (2019) find evidence for refugees in the US that employment probability is affected positively by the number of business owners and negatively by the number of employees in their network.

Overall, access to a larger social network of established previous migrants seems helpful in transmitting information and providing access to preferential employment possibilities for newly arrived refugees.

Discussion and Policy Implications

A substantial body of evidence points to a highly consistent picture of refugees as disadvantaged socially and economically relative to other immigrants at arrival. We have provided a comprehensive review of refugees' economic integration and associated processes such as their social integration, language acquisition, and health outcomes, drawing together the existing literature, and analyzing an inclusive collection of data from numerous sources and countries. Our focus has been on Europe, Australasia, and North America, regions that, despite a recent rise, receive only a fraction of the worldwide refugee population. Additional future analysis investigating similar issues for receiving countries outside this high-income group would be very timely.

Based on our investigation, we can conclude that refugees have (with the United States being an exception) substantially lower employment rates than other immigrants for at least the first decade after arrival, but that the gap comes close to disappearing during the second

decade. Those refugees who do find work also experience much lower wages than other immigrants; again, the gap becomes smaller, but does not close during the first decade. The gap in labor market achievement between refugees and other immigrant groups (and indeed natives) is mostly unaccounted for by differences in demographic composition and the educational disadvantage of refugee groups. Aggravating factors for the detrimental economic position of refugees could include language deficiencies or physical and mental health problems due to experiences in regions of origin or during migrations.

One area of reform that can facilitate early integration is the asylum processes itself, which is often lengthy and unpleasant. An important finding from the existing literature is that the length of time spent in refugee camps or other asylum accommodation has a strong impact on the future outcomes of refugees. For instance, for the Netherlands, Bakker et al. (2014) find that a longer stay in asylum accommodation decreases the likelihood and quality of future employment, while de Vroome and van Tubergen (2010) establish a negative association between the time spent in refugee reception centres and economic integration. Hainmueller et al. (2016) show that for refugees in Switzerland, each additional year that an asylum seeker waits for their claim to be processed decreases the subsequent employment rate by several percentage points, and Hvidtfeldt et al. (2018) compute that an additional year of waiting time in the Danish asylum system decreases subsequent employment by 3.2 percentage points on average. Hvidtfeldt et al. (2019) show that lengthened waiting times also raise the risk of psychiatric problems. In Germany, Brücker et al. (2019) find that prolonged asylum procedures inhibit subsequent job finding.

Asylum claims may be decided while outside the country of ultimate destination, possibly in camps near to the origin country, or may be decided after arrival in the potential host country, but while still living in restricted housing conditions with barriers to employment and while supported by state payments. These barriers may have effects that persist long after

the formal restrictions are lifted. Marbach et al. (2018) show that temporary employment bans after arrival in Germany have significant adverse effects on subsequent employment trajectories of refugees.

After acceptance of refugees, it is not uncommon for host countries to enforce regional dispersal. The general argument for these policies is that this spreads the burden of support, avoids enclaves, forces refugees to engage with receiving communities, and therefore incentivizes acquisition of human capital and accelerates integration. However, the evidence suggests that if economic integration is the objective, this approach is questionable. Dispersal of refugees means depriving them of access to networks of individuals of similar origin, which are often critical to job finding and social learning. Thus, allowing for unrestricted settlement decisions of refugees within the receiving country may lead to better economic outcomes than external allocation.

In terms of post-arrival policy choices that can improve refugees' mental health outcomes, the German National Academy of Sciences Leopoldina (2018), in a detailed analysis of the various channels through which experiences of refugees can affect their mental health, emphasize the importance of providing support addressing psychological problems at an early stage. Giacco et al. (2018), as well as several other studies, emphasize the detrimental and aggravating effects that adverse conditions in a host country can have on refugees' mental health. Similar conclusions are reached by Bakker et al. (2014) and Kaltenbach et al. (2018), while Porter and Haslam (2005) identify living in institutional accommodation and experiencing restricted economic opportunity as risk factors for mental health outcomes. Studies investigating mental health outcomes in relation to post-migration experiences overwhelmingly conclude that the consequences of exposure to violence and trauma can be mitigated by early psychological support, reduced duration in asylum facilities, and support for early absorption into the labor market.

We conclude therefore that keeping the asylum process short, providing early support to address health issues, and facilitating refugees to join the labor market at the earliest possible stage are of key importance. Such policies reduce skill loss, help to reduce uncertainty about future residence and improve the effectiveness of human capital investment, thus enhancing incentives to invest. To underscore this point, Bakker et al. (2014) find that in the Netherlands, temporary legal status leads to lower employment probability and job quality than permanent legal status and naturalization. Fasani et al. (2018) show that groups of refugees granted permanent status at higher rates experience more favorable labor market outcomes. The success of such policies is also consistent with the earlier evidence on economic integration which suggests large initial skill deficiencies that can potentially be addressed by policy.

Over and above all of this, refugees may find themselves subject to particularly intense hostility from host communities suspicious of the genuineness of claims of persecution and influenced by populist campaigns portraying asylum seekers as opportunistic exploiters of misplaced generosity. Public policy can accentuate or ameliorate such hostilities, at least to some extent.

In coming years, the outflow of refugees from poorer regions of the world seems likely to continue undiminished, given the continued political fragility of populous and growing countries from which migration to safer locations is increasingly easy. International obligations mandate a humanitarian duty to provide refuge in well-established cases. Reluctant acceptance of those obligations with arduous asylum processes and conditions which hinder successful integration harms the interests of refugees, wasting their talents and therefore also harming receiving countries themselves. A deeper understanding of the refugee experience can help to support sensible and constructive integration policy that encourages economically and socially productive participation of refugees in receiving societies.

Acknowledgements

We are very grateful to Pieter Bevelander, Bernt Bratsberg, Ravi Pendakur, Matti Sarvimäki, and Marie Louise Schultz-Nielsen for making moments from their data on refugee integration available to us. This paper is in part based on data from Eurostat, Labour Force Survey, 2008 and 2014. This paper uses unit record data from the Household, Income and Labour Dynamics in Australia Survey (HILDA) and Building a New Life in Australia: the Longitudinal Study of Humanitarian Migrants (BNLA) conducted by the Australian Government Department of Social Services (DSS). The findings and views reported in this paper, however, are those of the authors and should not be attributed to the Australian Government, DSS, or any of DSS' contractors or partners. The responsibility for all conclusions drawn from the data lies entirely with the authors. Christian Dustmann acknowledges financial support from the DFG (grant number DU 1024/1-2 AOBJ: 642097) and the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement Number 833861). We are grateful also for comments from and discussion with Herbert Brücker, Anna Piil Damm, Francesco Fasani, Tommaso Frattini, Jens Hainmueller, Gordon Hanson, Tim Hatton, Marie Louise Schultz-Nielsen, Timothy Taylor and Heidi Williams.

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Table 1. Employment outcomes of refugees compared to other groups

Host country	Years since migration	Refugee employment rate	Gap to other immigrant employment rate	Gap to native employment rate
Australia	2	0.23	0.44	0.55
Canada	2	0.48	0.19	0.27
Finland	2	0.11	0.40	0.64
Germany	2	0.14	0.45	0.57
Norway	2	0.15	0.69	0.73
Sweden	2	0.28	0.20	0.54
UK	2	0.38	0.26	0.38
USA	2	0.61	0.01	0.11
Canada	10	0.67	0.07	0.08
Finland	10	0.25	0.34	0.50
Norway	10	0.60	0.26	0.29
Sweden	10	0.63	0.07	0.19
USA	10	0.73	0.01	-0.01

Note: The table compares observed refugee employment rates to those of other immigrants and natives for various host countries at 2 and 10 years after migration to the country. The fourth and fifth columns show the amount by which the refugee employment rate trails that of other immigrants or natives respectively. The precise sample groups vary in their construction due to having been obtained from different data sources (see the online appendix), but generally consist of working age males and females. The results are based on data from the following sources (for details see the online appendix): Australia - BNLA, HILDA; Canada - Census; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; UK - SNR, LFS; USA - ACS.

Table 2. Employment growth rates of refugees and other immigrants over time since arrival

Host country	Refugees 0-5 years	Other immigrants 0-5 years	Refugees 5-10 years	Other immigrants 5-10 years
Australia	0.067	0.083	-	-
Canada	0.030	0.012	0.020	0.006
Denmark	0.073	0.066	0.019	0.020
Finland	0.027	0.007	0.012	0.012
Germany	0.048	0.026	-	-
Norway	0.111	0.000	0.010	-0.003
Sweden	0.076	0.058	0.044	0.025
UK	0.058	0.061	-	-
USA	0.056	0.048	0.023	0.011
Average	0.061	0.040	0.021	0.012

Note: The table shows average growth of employment rates for refugees and other immigrants. The second column shows the average yearly increase in the refugee employment rate observed during the first 5 years of residency in the host country, and the analogous figures for non-refugee immigrants are displayed in the third column. The fourth and fifth columns similarly show the average yearly increases in employment observed for refugees and other immigrants during the period between 5 and 10 years after arrival in the host country. The precise sample groups vary in their construction due to having been obtained from different data sources (see the online appendix), but generally consist of working age males and females. The results are based on data from the following sources (for details see the online appendix): Australia - BNLA, HILDA; Canada - Census; Denmark - Administrative registers; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; UK - SNR, LFS; USA - ACS.

Table 3. Wages of refugees compared to other groups

Host country	Years since migration	Refugee : Native wage ratio	Refugee : Other Immigrant wage ratio
Australia	2	0.697	0.761
Canada	2	0.408	0.634
Finland	2	0.329	0.388
Germany	2	0.496	0.735
Norway	2	0.554	0.858
Sweden	2	0.502	0.628
USA	2	0.401	0.487
Canada	10	0.583	0.689
Finland	10	0.633	0.678
Norway	10	0.762	0.886
Sweden	10	0.745	0.894
USA	10	0.547	0.701

Note: The table compares average wage levels of employed refugees to those of other immigrants and natives for various host countries at 2 and 10 years after migration to the country. The third and fourth columns show the ratio of refugee wages to natives and other immigrants respectively. The precise sample groups vary in their construction due to having been obtained from different data sources (see the online appendix), but generally consist of working age males and females recorded as being in employment. The results are based on data from the following sources (for details see the online appendix): Australia - BNLA, HILDA; Canada - Census; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; USA - ACS.

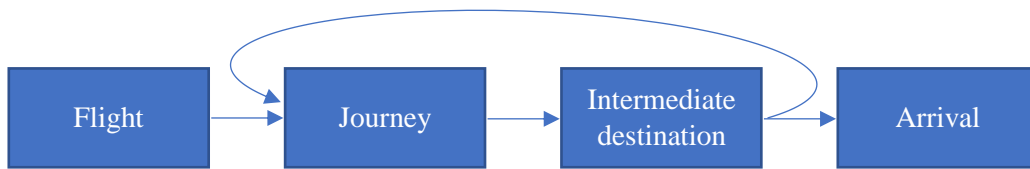
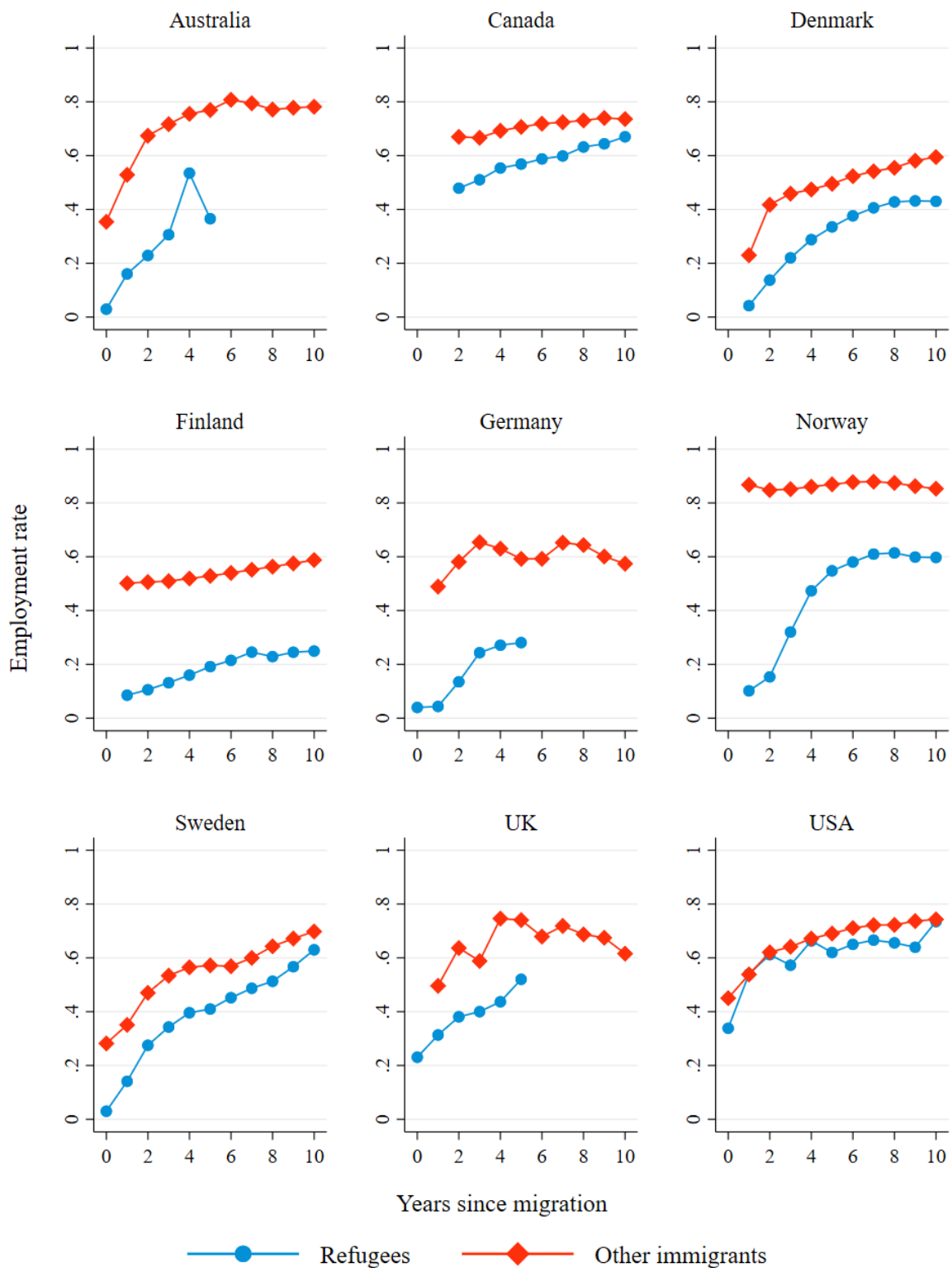


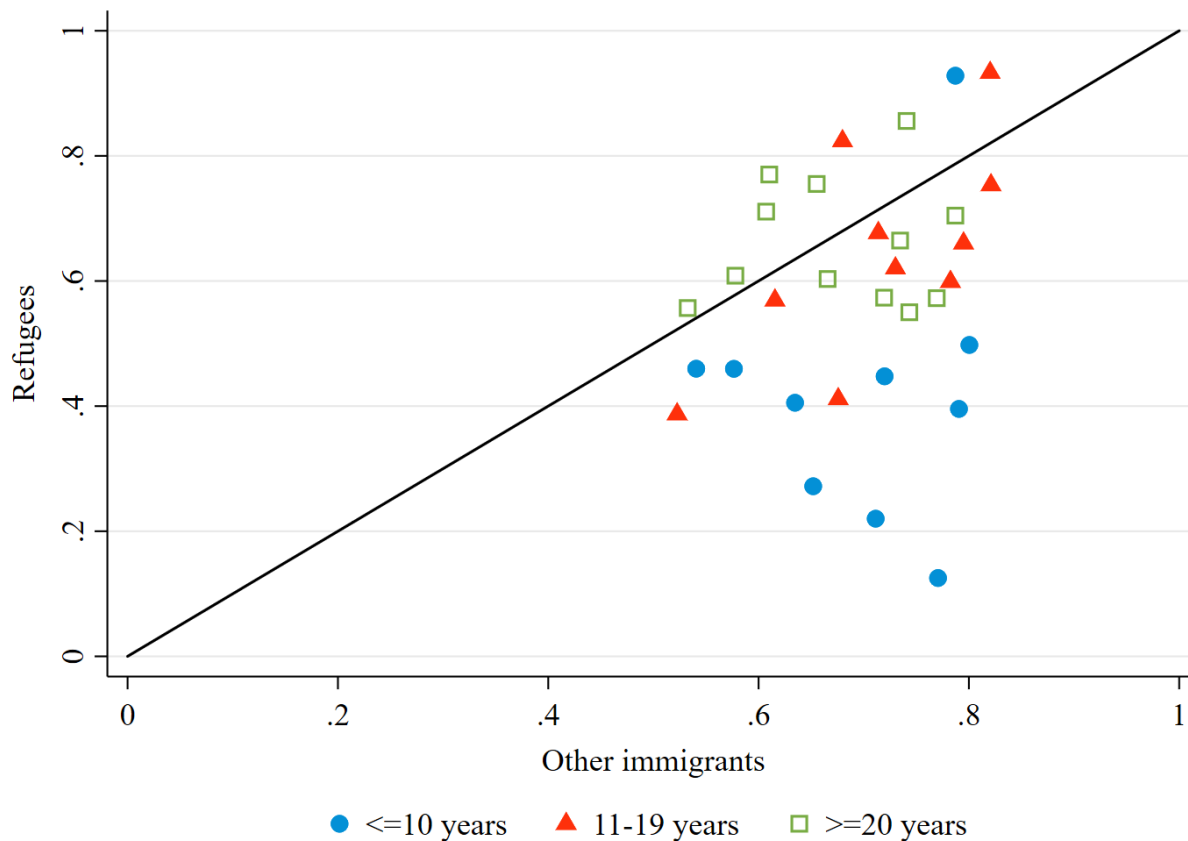
Figure 1. The stages of the refugee experience

Figure 2. Employment rates of immigrant groups over time since migration



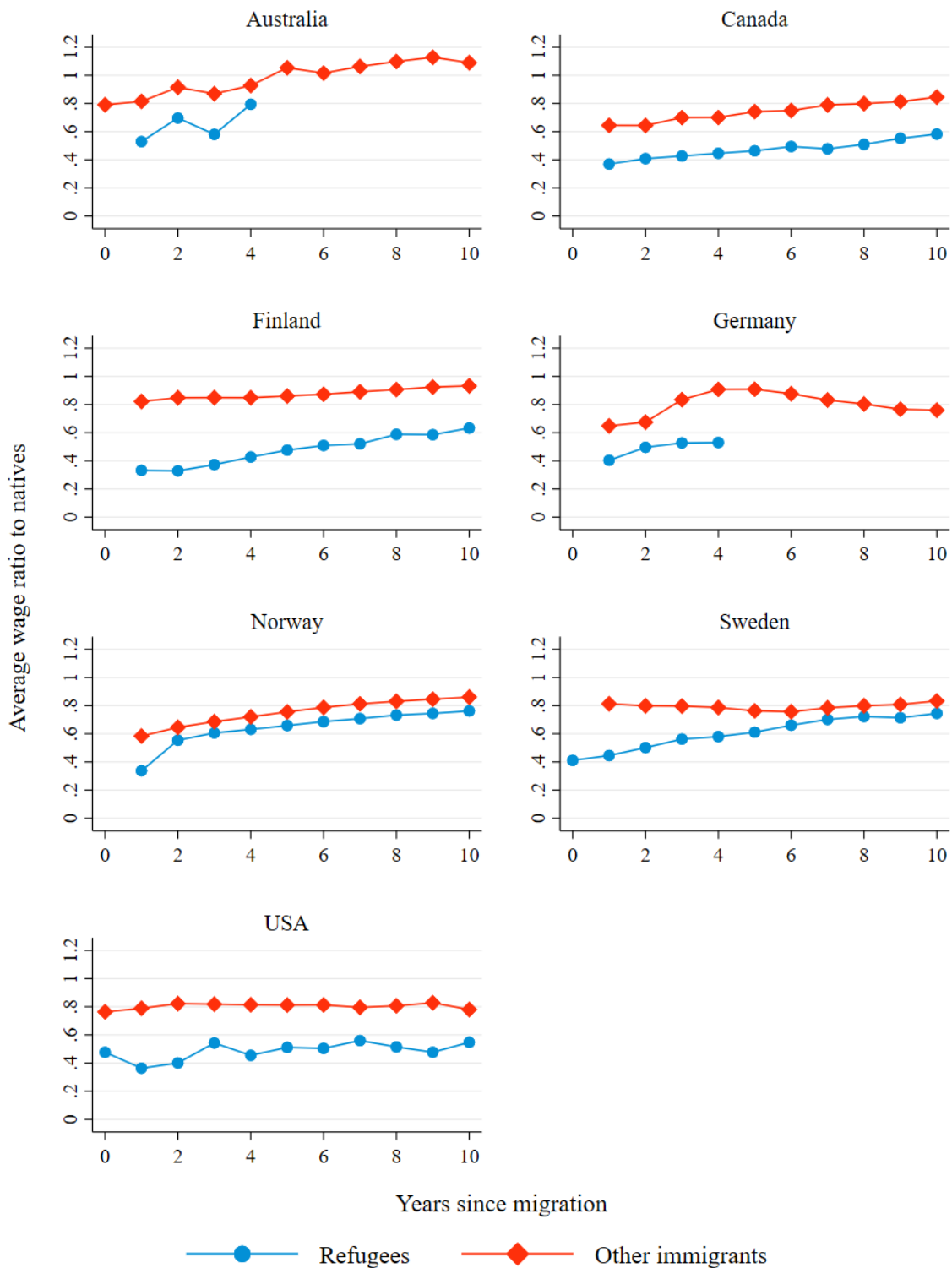
Note: The figure plots observed employment rates of refugees and other immigrants in various host countries over time after migration. The precise sample groups vary in their construction due to having been obtained from different data sources (see the online appendix), but generally consist of working age males and females. The results are based on data from the following sources (for details see the online appendix): Australia - BNLA, HILDA; Canada - Census; Denmark - Administrative registers; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; UK - SNR, LFS; USA - ACS.

Figure 3. Employment rates of immigrant groups across European countries



Note: This figure shows the employment rates of refugees compared to those of other immigrants for various European countries. This plot is based on data from the 2014 ad-hoc module of the EU Labour Force Survey. Refugees are identified as those whose reported reasons for migration are international protection or asylum. The “other immigrants” sample consists of all other non-natives. Both groups are restricted to individuals between the ages of 20 and 64 whose main activity is not education or training (see the online appendix for details). Each point in this figure represents a country, and the distance below the 45° line represents the extent to which refugees are employed at lower rates than other immigrants. This is shown separately for migrants who have been in the host country at most 10 years, between 11 and 19 years, and at least 20 years. Due to the small numbers of refugees in each individual country, some of the plotted points are calculated based on a small number of observations. Any individual point should be regarded as having limited reliability, though the general pattern can be expected to be more robust.

Figure 4. Wage levels of migrant groups compared to natives, over time since migration



Note: The figure plots the mean wages of immigrant groups (conditional on employment) in various host countries over time after migration. These wages are presented as a fraction of the mean wages of the native population. The precise sample groups vary in their construction due to having been obtained from different data sources (see the online appendix), but generally consist of working age persons. The results are based on data from the following sources (for details see the online appendix): Australia - BNLA, HILDA; Canada - Census; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; USA - ACS.

Appendix: Additional results

Refugee employment by gender

Male and female refugees experience quite different labor market trajectories after arrival in a host country. These can be seen for a variety of countries in Figure A1. The most obvious difference is that refugee women experience substantially lower employment rates than their male counterparts. However, the evolution of these employment rates over time is also quite different. While refugee men's employment rates increase rapidly in the first few years after migration, and thereafter increase only at a slower rate, refugee women appear to experience more consistent employment growth. The absolute gap between refugee male and female employment therefore typically grows for the first few years as men quickly enter into the labor force, but then eventually begins to decline as women steadily begin to catch up.

Table A1 documents how the ratio of female to male employment rates compares between refugees and other groups. In the early years after migration, this employment gender ratio for refugees is significantly lower than the corresponding ratio for other immigrants. Both of these employment gender ratios are also well below the levels of natives. After 10 years, in most countries we observe that the gap between the refugee and other immigrant employment gender ratios has shrunk significantly (with the exception of Finland in our data).

Conditional employment and wage gaps

We also explore to what extent the employment and wage gaps observed between refugees and other groups are a function of compositional differences between the groups, for example in terms of demographic characteristics (age, gender, etc.) and educational attainment. These factors could in principle explain a substantial part of the large variation we see between refugee outcomes in different countries, as well as between refugees and other immigrant groups. That this is not the case is illustrated by Figure A2, which plots conditional and

unconditional employment profiles for immigrants and refugees, relative to natives, based on data that pools all countries in the EU-LFS.

Explicitly, the conditional series are based on regressions in which we control for gender, education (in 3 groups), and age (in 9 groups). In addition, we control for combined host country and survey year fixed effects. Employment rates are estimated with a linear probability model, and the naïve series is calculated based on regressions controlling only for the host country-survey year fixed effects. All controls are common to both migrant groups and the native sample.

As can be seen in Figure A2, we find that conditioning on these demographic factors affects the estimates slightly, but the qualitative picture remains largely unchanged. Besides illustrating once more the large initial employment gaps between refugees and other immigrants, as well as the catch up over time, these figures indicate similar conditional and unconditional profiles, leading us to the conclusion that differences in education, age, and gender composition together are not main drivers of the differentials we have seen in earlier results.

Language skills

Refugees' development of host country language skills is an important facet of integration in and of itself, as well as being an important determinant of labor market outcomes. Using data from the EU Labour Force Survey (LFS) and the American Community Survey (ACS), we can examine how refugees differ in their host-country language skills as compared to other immigrants.

The EU LFS's 2014 ad-hoc module reports information on language skills of immigrants and refugees, measured on a 4 point scale (individuals rate their proficiency in the host country's language from "beginner or less", "intermediate", "advanced", or "mother

tongue”). In Figure A3, we plot the proportion of respondents answering in one of the two highest categories, for refugees and other immigrants, distinguishing between groups of individuals that have been in the respective host country for less than 10 years, between 11 and 19 years, and for more than 19 years. Refugees appear to consistently begin with lower language proficiency than other immigrants (the only exception being Switzerland). While the language skills of both groups appear to improve slowly but substantially over this multi-decade time period, refugees’ proficiency seems to persistently lag behind that of the other immigrant groups. This suggests that language skills (a critical determinant of labor market outcomes) may be an important factor influencing the poorer outcomes of refugees as compared to other immigrants, even decades after migration.

Moving to the US, data from the ACS provides information on language proficiency on a 5 point scale (possible responses are “does not speak English”, “speaks English, but not well”, “speaks well”, “speaks very well”, or “speaks only English at home”), as well as linguistic isolation (as individual is classified as “linguistically isolated” if they reside in a household in which no person above the age of 14 speaks English “very well” or speaks only English at home). Figure A4(a) plots the shares of refugees and other immigrants who speak English “well” or better. The figure shows a clear disadvantage in language proficiency for refugees in comparison to other immigrants in the initial years after migration. Over the first two decades after arrival, other immigrants’ rates of English proficiency do not improve substantially, while refugees rapidly acquire English skills and overtake the proficiency levels of other immigrants around a decade after arriving in the US.

Apart from being able to personally speak the language, exposure and access to proficient speakers are likely also important in the integration of a migrant household. In Figure A4(b), the rate of linguistic isolation for immigrants and refugees is plotted over time after arrival. In an inversion of the language skills plot, refugees are initially much more likely than

other immigrants to live in houses in which no member is proficient in English. In the initial years after migration, refugees' rate of linguistic isolation drops rapidly, whereas other immigrants do not appear to become much less linguistically isolated over time. Again after around a decade, the level of linguistic isolation of refugees drops below that of other immigrants.

These figures suggest that refugees in the US invest heavily in the acquisition of English language skills compared to other migrants. This could to some extent be a consequence of the fact that some Spanish-speaking immigrants may face weaker incentives to become fluent in English in some migrant-dense regions of the United States.

Appendix: Data sources and analysis methodology

The results presented in this paper draw from numerous data sources. Here we describe these sources and the methodology used to analyze them. For data protection reasons, in plots based on all data sources except the EU-LFS, data points are excluded if they would have been based on less than 40 observations.

Country-specific public survey data

Descriptive statistics for these datasets are shown in Table A2.

Australia: To study the outcomes of refugees and other groups in Australia, we use two data sets – the Building a New Life in Australia (BNLA) survey (DSS, 2018a), and the Household, Income, and Labour Dynamics in Australia (HILDA) survey (DSS, 2018b). The BNLA is a longitudinal study of refugees who arrived in Australia or whose visas were granted in 2013. The first 4 waves of interviews were conducted between 2013 and 2017. Our refugee sample comprises all observations from these waves of individuals between the ages of 20 and 64. Individuals are classified as employed if they report that they are currently in paid work;

income from wages of all jobs is also self-reported. The period over which individuals report their income differs between respondents, as does whether the reported figure represents net or gross income. For those who report net wages, we estimate their gross income assuming that the reported figure is representative for the entire tax year, and that they will claim no deductions (income tax rates are taken from the Australian Taxation Office; we include the Temporary Budget Repair Levy but not the Medicare Levy in our calculations). These wages are converted to 2015 Australian dollars using OECD CPI data. To construct comparison groups of non-refugee immigrants and native-born Australians, we use data from HILDA, which is an annual long-term panel study of Australian households. Specifically, we consider the waves from 2004-2017 (earlier waves are excluded since migration category is first recorded in the 2004 wave). We define non-refugee immigrants as those who were not born in Australia, and who do not report having come to Australia as refugees or under a humanitarian visa. To give comparability with the refugee sample as far as possible, income reflects gross wages and salary from all jobs, deflated to 2015 prices. Again, our sample is composed of all waves, and we restrict analysis to individuals between the ages of 20 and 64 as for the refugee sample. For immigrants, we restrict the sample to those who have been resident in Australia 10 years or less.

Germany: Our analysis for Germany is based on the Socio-Economic Panel (SOEP) (SOEP, 2019; Goebel et al., 2019). While this survey as a whole has been running since 1984, in our analysis of migrants and refugees we make use of more recent subsamples. Our data on German refugees is based on the 2016 and 2017 waves of the IAB-BAMF-SOEP Survey of Refugees in Germany, which cover adult refugees and asylum seekers who have arrived in Germany since 2013. Our data on non-refugee immigrants is based on the 2013-2017 waves of the IAB-SOEP Migration Samples, covering migrants arriving in Germany between 1995 and 2014. We exclude from this sample second-generation immigrants, individuals with evidence

of refugee experience, and individuals who have been resident in Germany for more than 10 years. When considering native-born Germans, we also use the 2013-2017 waves of the main survey. Our samples are restricted to individuals between the ages of 20 and 64. An individual is classified as employed if recorded as being in full-time employment or regular part-time employment. Wages are recorded net of taxes, and converted to 2015 euros.

United Kingdom: For the UK, we use data from the Survey of New Refugees (SNR) (UKBA, 2010). This panel study was conducted between 2005 and 2009, tracking refugee adults whose asylum was granted between late 2005 and early 2007. These individuals were followed over 4 waves spanning 21 months after the visa decision. Our refugee sample consists of those between the ages of 18 and 64 (grouping of age information in the data precluded selecting our usual 20-64 sample range), and includes all waves. Individuals are classified as employed if they are recorded as full-time employees, part-time employees, or self-employed. Data on natives and non-refugee immigrants is drawn from the UK Labor Force Survey's 2008 wave, which includes an ad-hoc module focusing on the labor market status of migrants (ONS, 2011). Immigrants with their reason for migration recorded as "international protection" (i.e. refugees or asylum seekers) are excluded from the sample. Individuals are included in the native and non-refugee immigrant samples if their ages are between 20 and 64 (again grouping of age information prevented selection of samples precisely comparable to the SNR refugee sample). Wage information suitable for our analysis was not available in these datasets.

United States: Our analysis for the US is based on the American Community Survey (ACS). We use the 5-year 2013-2017 sample provided through the Integrated Public Use Microdata Series (IPUMS) program (Ruggles et al., 2019). Unfortunately, this data does not explicitly identify reason for migration, and so we infer refugee status based on the year of arrival in the United States and the country of origin. Following Capps et al. (2015) (see also Evans and Fitzgerald, 2017), we compare the numbers of refugees from each country of origin

entering the US in a given year, taken from the Yearbook of Immigration Statistics (OIS, 2018), to the total number of immigrants estimated to have entered the country in that year from the respective origin in the ACS data. For those country of origin-year of arrival pairs in which more than 70 percent of entrants are estimated to be refugees, we assign all entrants in our dataset to the refugee group.¹⁰ Migrants arriving from country-year pairs not identified in this way are included in the non-refugee immigrant sample, while the native sample is formed from individuals born in the US. Our samples are restricted to individuals between the ages of 20 and 64. We use pre-tax wages and salary, recorded in 2017 dollars. We find that while the refugee sample itself is quite sensitive to the parameter choices involved in the refugee status imputation procedure, the aggregate employment and wage trends are more robust.

Administrative data

The remainder of our country-specific data is provided courtesy of other authors, who have calculated relevant statistics based on administrative datasets.¹¹ Descriptive statistics for these data are shown in Table A3.

Canada: Moments based on data for Canada have been provided to us by Ravi Pendakur. The underlying data source is the 2016 census. The sample is restricted to those aged between 20 and 64, and the immigrant and refugee samples include individuals who immigrated to Canada between 2005 and 2014. Employment status is recorded as at the census week (i.e. in 2016), while wages are recorded for the year prior (2015). The income recorded corresponds to wages earned from employment, pretax, in 2015 CAD.

Denmark: Moments based on data for Denmark have been provided to us by Marie Louise Schultz-Nielsen, based on register data from 1997-2013 that has been analyzed in

¹⁰ We also require that at least 50 refugees entered the United States from this country-year pair to include it as a refugee source.

¹¹ We gratefully acknowledge these authors: Pieter Bevelander, Bernt Bratsberg, Ravi Pendakur, Matti Sarvimäki, and Marie Louise Schultz-Nielsen.

Schultz-Nielsen (2017). The immigrant and refugee samples consist of individuals above the age of 25 who arrived in Denmark between 1997 and 2010 and were 17-36 years of age upon arrival. The refugee sample includes reunited family members, while the comparison “other immigrant” sample is formed by family migrants reuniting with non-refugee first and second generation immigrants (note that this is different to many of the other “other immigrant” samples we use, which are largely composed of economic migrants). The native sample consists of Danish individuals born between 1961 and 1987. Employment rates for natives have been disaggregated by age in order to better match the refugee sample, but we do not observe an aggregate native employment rate. Earnings are recorded in 2015 DKK, for individuals who were employed full-time or part-time for some part of the year (self-employed persons are not included in this calculation).

Finland: Moments based on data for Finland have been provided to us by Matti Sarvimäki, and is adapted from results in Sarvimäki (2017). The underlying data source is administrative registers spanning 1990-2013. The sample includes immigrants entering the country between 1990 and 2012, subject to the restrictions that they are aged between 25 and 60 and immigrated at age 18 or above. Refugees are not explicitly identified in the data, and so arrivals from Iraq, Afghanistan, and Somalia are treated as the refugee group, while the non-refugee immigrant group is composed of all other countries of origin excluding Turkey, the former Soviet Union, and former Yugoslavia (see Sarvimäki 2017).¹² Moments on earnings are

¹² Sarvimäki (2017) explains “A limitation of these data is that they contain no information on the type of residence permit. Thus I have to approximate refugee status based on the country of birth. This approximation is clearly problematic for origin areas such as the former Soviet Union and Turkey. While some immigrants from these countries moved to Finland due to a need for international protection, most came for other reasons. On the other hand, the vast majority of those coming from Afghanistan, Iraq and Somalia are likely to have entered Finland for international protection or as family members of those granted asylum. Furthermore, Finland had no history of labor migration from the former Yugoslavia – or from virtually anywhere prior to the early 1990s. Thus the share of refugees among those born in the former Yugoslavia is likely to be higher in Finland than in the other Nordic countries.”

recorded in 2010 euros, and reflect gross income from wages, salary, and entrepreneurial income.

Norway: Moments based on data for Norway have been provided to us by Bernt Bratsberg, and are based on results from Bratsberg et al. (2019). The underlying data comes from administrative registers spanning 2011-2015, and the sample includes individuals between the ages of 20 and 62 who arrived in Norway between 2001 and 2014 (as we consider immigrants who have been in the country at most for 10 years). The refugee sample includes resettled refugees, successful asylum claimants, and immigrants whose reason for migration was family reunification with a refugee. The native population that serves as reference in some results consists of Norwegian-born individuals between the ages of 29 and 40 (this age range was chosen as the median age at arrival of immigrants is 29, and we study until up to 10 years of residence). Earnings are recorded net of taxes for all groups in 2015 NOK.

Sweden: Moments based on data for Sweden have been provided to us by Pieter Bevelander, based on 2015 register data (cf. Bevelander 2016, based on analogous 2011 data). Immigrants arriving between 2005 and 2015 constitute the refugee and non-refugee immigrant samples, while the native group is drawn from the Swedish-born population. Family subsequently reunited with refugees are included in the non-refugee immigrant sample. All samples are restricted to those aged between 20 and 64. Income data is gross, and reflects all income of work in 2015 SEK.

EU-LFS data

European Countries – The EU-LFS: We make use of two ad-hoc modules of the European Union’s Labor Force Survey that were administered in 2008 and 2014 and that allow distinction of immigrants by reason for entry (Eurostat, 2019). Our sample consists of individuals between the ages of 20 and 64 whose main activity is not education (for those with missing information

on main activity, they are excluded if they have been in education in the past 4 weeks). Information on language proficiency is available only in the 2014 module. Income data is provided as a decile of the wage distribution, and is only available in the 2014 module. Data is available for both 2008 and 2014 for the following countries: Austria, Belgium, Bulgaria, Switzerland, Cyprus, Czechia, Estonia, Spain, France, Greece, Hungary, Italy, Lithuania, Luxembourg, Latvia, Norway, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia, and the United Kingdom. In addition, data is available for 2014 only for Finland, Croatia, and Malta, and in 2008 only for Germany, Denmark, Ireland, and the Netherlands. Refugees are identified as those whose stated reason for migration is asylum or international protection. The comparison “other immigrant” group comprises migrants with any other reason for migration. One issue with this data is that sample sizes of refugees in each individual country are small, as these are representative surveys that do not boost immigrant or refugee samples. For plots based on the EU-LFS, data points are excluded if they would have been based on less than 10 observations, or if they represent population sizes too small to yield reliable results. Descriptive statistics for the EU-LFS sample are shown in Table A4.

Table A1. Gender ratios of employment rates

Host country	Years since migration	Refugees	Other immigrants	Natives
Australia	2	0.24	0.57	0.86
Canada	2	0.63	0.74	0.94
Finland	2	0.30	0.70	0.99
Germany	2	0.11	0.49	0.88
Norway	2	0.54	0.88	0.96
Sweden	2	0.48	0.58	0.99
UK	2	0.31	0.70	0.86
USA	2	0.58	0.62	0.92
Canada	10	0.79	0.81	0.94
Finland	10	0.40	0.90	0.99
Norway	10	0.80	0.91	0.96
Sweden	10	0.88	0.90	0.99
USA	10	0.68	0.70	0.92

Note: The table documents gender ratios of employment rates for various groups. The gender ratio here is the ratio between the female employment rate and the male employment rate in the relevant sample. The precise sample groups vary in their construction due to having been obtained from different data sources (see the discussion in the text of this online appendix), but generally consist of working age males and females. The results are based on data from the following sources: Australia - BNLA, HILDA; Canada - Census; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; UK - SNR, LFS; USA - ACS.

Table A2. Descriptive statistics for country-specific public survey data sources

Host country	Australia			Germany		
	Refugees	Non-refugee immigrants	Natives	Refugees	Non-refugee immigrants	Natives
Sample						
Survey	BNLA	HILDA	HILDA	SOEP	SOEP	SOEP
Survey years	2013-2017	2004-2017	2004-2017	2016-2017	2013-2017	2013-2017
Observations	7,189	5,951	125,040	9,293	5,681	49,917
Individuals	2,205	1,540	17,679	6,831	2,563	15,431
% female	44.9%	52.0%	50.2%	25.9%	52.6%	48.3%
Age range	20-64	20-64	20-64	20-64	20-64	20-64
Mean age	36.2	34.2	40.5	31.5	35.0	44.1
Mean age at arrival	.	28.6	n/a	29.8	29.5	n/a
Mean year of arrival in host country	.	2006.6	n/a	2014.8	2009.7	n/a
Mean years since arrival	.	5.6	n/a	1.7	5.4	n/a
Most common country of origin	Iraq	India	n/a	Syria	Poland	n/a
%	32.9%	11.9%	n/a	43.2%	17.1%	n/a
2nd most common country of origin	Afghanistan	New Zealand	n/a	Afghanistan	Romania	n/a
%	19.6%	11.2%	n/a	12.3%	7.5%	n/a
3rd most common country of origin	Myanmar	China	n/a	Iraq	Russia	n/a
%	9.9%	9.7%	n/a	9.6%	5.0%	n/a
Non-missing employment observations	7,146	5,525	124,274	9,277	5,676	49,866
Employment rate	0.205	0.731	0.775	0.112	0.611	0.709
Non-missing income observations	786	3,802	87,305	630	3,186	32,800
Mean income of employed	760.6	1244.0	1227.8	223.7	380.8	459.1

(continued overleaf)

Table A2. (cont.)

UK			USA		
Refugees	Non-refugee immigrants	Natives	Refugees	Non-refugee immigrants	Natives
SNR 2006-2009	LFS 2008	LFS 2008	ACS 2013-2017	ACS 2013-2017	ACS 2013-2017
3,855	2,367	59,094	8,379	349,230	7,582,506
1,825	2,367	59,094	8,379	349,230	7,582,506
36.2%	51.1%	50.4%	48.7%	50.9%	50.3%
18-64	20-64	20-64	20-64	20-64	20-64
31.5	32.8	42.1	36.1	35.2	41.5
.	28.0	n/a	31.6	30.0	n/a
.	2003.2	n/a	2010.6	2009.8	n/a
.	4.8	n/a	4.5	5.2	n/a
Eritrea	.	n/a	Iraq	Mexico	n/a
17.5%	.	n/a	26.0%	19.0%	n/a
Somalia	.	n/a	Myanmar	India	n/a
14.0%	.	n/a	25.7%	10.0%	n/a
Iraq	.	n/a	Bhutan	China	n/a
8.7%	.	n/a	16.4%	7.3%	n/a
3,731	1,893	51,081	8,379	349,230	7,582,506
0.412	0.658	0.759	0.609	0.663	0.724
.	.	.	4,929	215,961	5,130,102
.	.	.	484.0	808.9	1004.7

Note: The table shows descriptive statistics for the country-specific public survey datasets we use. Further details of the datasets and sample construction are discussed in this online appendix. Refugee and non-refugee immigrant samples are restricted to those in the host country at most 10 years. Income shown is per week, denoted in the local currency; base years for price levels vary between countries.

Table A3. Descriptive statistics for administrative data sources

Country	Canada			Denmark		
	Refugees	Non-refugee immigrants	Natives	Refugees	Non-refugee immigrants	Natives
Source	Census (courtesy Ravi Pendakur)			Register (courtesy Marie Louise Schultz-Nielsen)		
Survey years	2016	2016	2016	1997-2013	1997-2013	1997-2013
Observations	165,395	1,402,375	15,531,075	227,623	136,960	3,435,629
Individuals	165,395	1,402,375	15,531,075	21,932	15,713	307,622
% female	50.8%	53.6%	50.3%	50.5%	63.3%	.
Age range	20-64	20-64	20-64	25-52	25-52	25-52
Arrival years	2005-2014	2005-2014	n/a	1997-2010	1997-2010	n/a
Mean year of arrival in host country	2009.0	2009.6	n/a	.	.	n/a
Mean years since arrival	7.0	6.4	n/a	.	.	n/a
Non-missing employment observations	165,395	1,402,375	15,531,075	.	.	.
Mean employment	0.600	0.712	0.748	.	.	.
Non-missing income observations	105,360	1,020,435	11,734,200	.	.	.
Mean income of employed (weekly, in local currency)	483.2	737.4	993.9	.	.	.

(continued overleaf)

Table A3. (cont.)

Finland			Norway			Sweden		
Refugees	Non-refugee immigrants	Natives	Refugees	Non-refugee immigrants	Natives	Refugees	Non-refugee immigrants	Natives
Register (courtesy Matti Sarvimäki)			Register (courtesy Bernt Bratsberg)			Register (courtesy Pieter Bevelander)		
1991-2013	1991-2013	1990-2013	2011-2015	2011-2015	2011-2015	2015	2015	2015
59,230	590,875	58,888,642	177,293	911,205	233,726	.	.	.
.
35.5%	45.0%	49.4%	49.9%	43.2%	47.6%	38.2%	52.7%	54.5%
25-60	25-60	25-60	20-62	20-62	29-40	20-64	20-64	20-64
1990-2012	1990-2012	n/a	2001-2014	2001-2014	n/a	2005-2015	2005-2015	n/a
1999.8	2001.7	n/a	.	.	n/a	.	.	n/a
5.3	4.4	n/a	5.2	4.2	n/a	.	.	n/a
59,230	590,875	58,888,642	177,293	911,205	233,726	.	.	.
0.184	0.527	0.749	0.433	0.863	0.884	0.326	0.544	0.818
10,879	311,656	44,118,633	76,704	786,299	206,515	.	.	.
284.6	490.7	567.7	5593.5	5853.3	8194.8	.	.	.

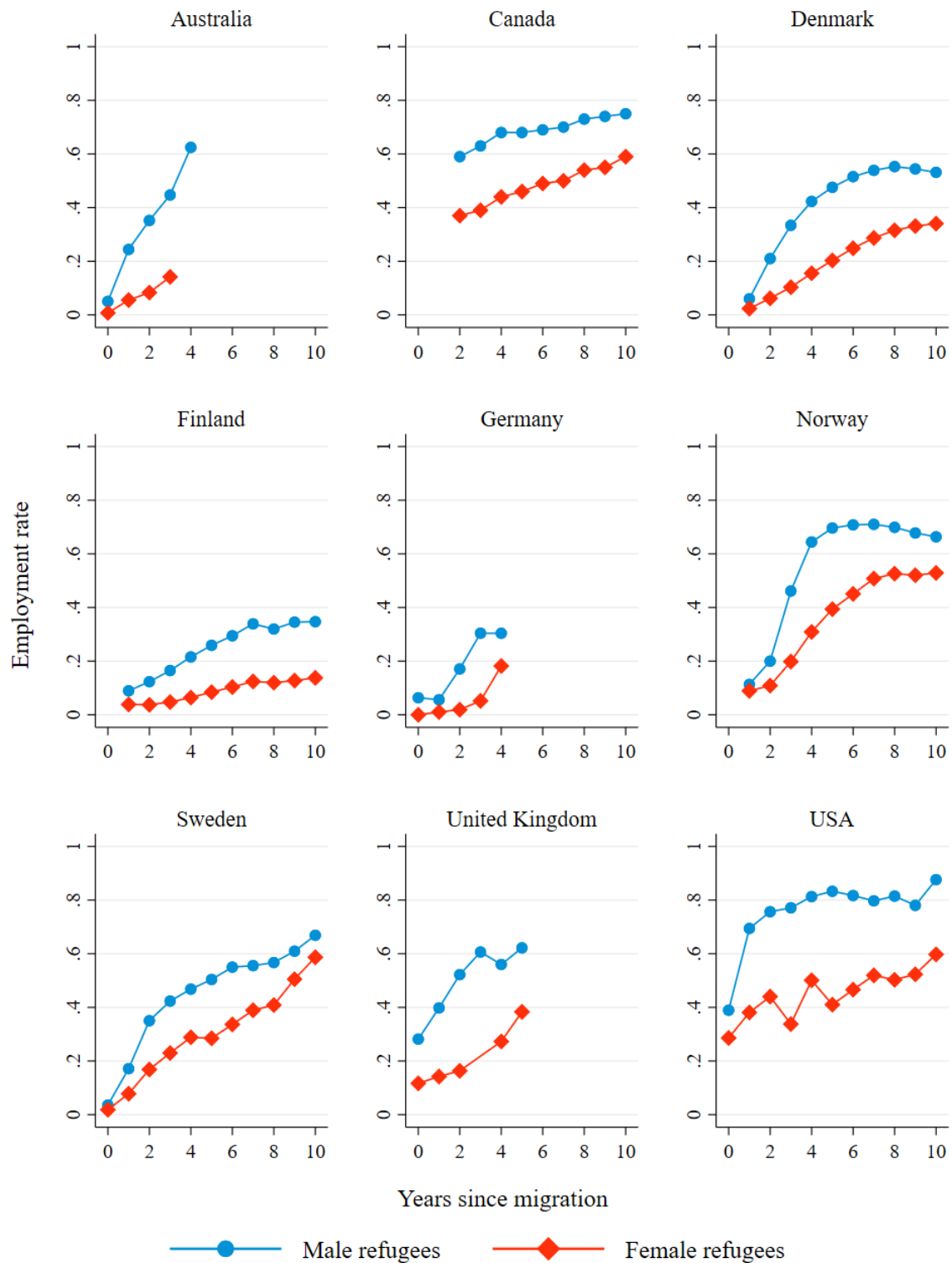
Note: The table shows descriptive statistics for the administrative datasets we use. We have been graciously provided moments from these sources by authors of various papers. Further details of the datasets and sample construction are discussed in this online appendix. Refugee and non-refugee immigrant samples are restricted to those in the host country at most 10 years. Income shown is per week, denoted in the local currency; base years for price levels vary between countries.

Table A4. Descriptive statistics for the EU Labour Force Survey

	2014			Pooled sample		
	Refugee	Other immigrant	Native	Refugee	Other immigrant	Native
Number of observations	2,213	51,979	524,708	5,662	130,103	1,372,522
% female	42.4%	52.5%	49.9%	42.0%	52.3%	49.9%
Mean age	44.6	41.6	43.3	43.8	41.2	43.0
Employment rate	0.594	0.667	0.706	0.601	0.679	0.720
% education missing	1.0	0.6	0.4	0.8	0.6	0.3
% low education	34.5	31.9	25.2	37.6	34.2	26.5
% medium education	37.2	36.5	46.3	37.9	38.5	47.7
% high education	27.4	31.0	28.1	23.7	26.7	25.6
% language missing	0.5	1.1	100.0	-	-	-
% advanced or native host language skills	47.8	66.3	-	-	-	-
% intermediate host language skills	34.1	21.6	-	-	-	-
% beginner or lower host language skills	17.6	11.0	-	-	-	-

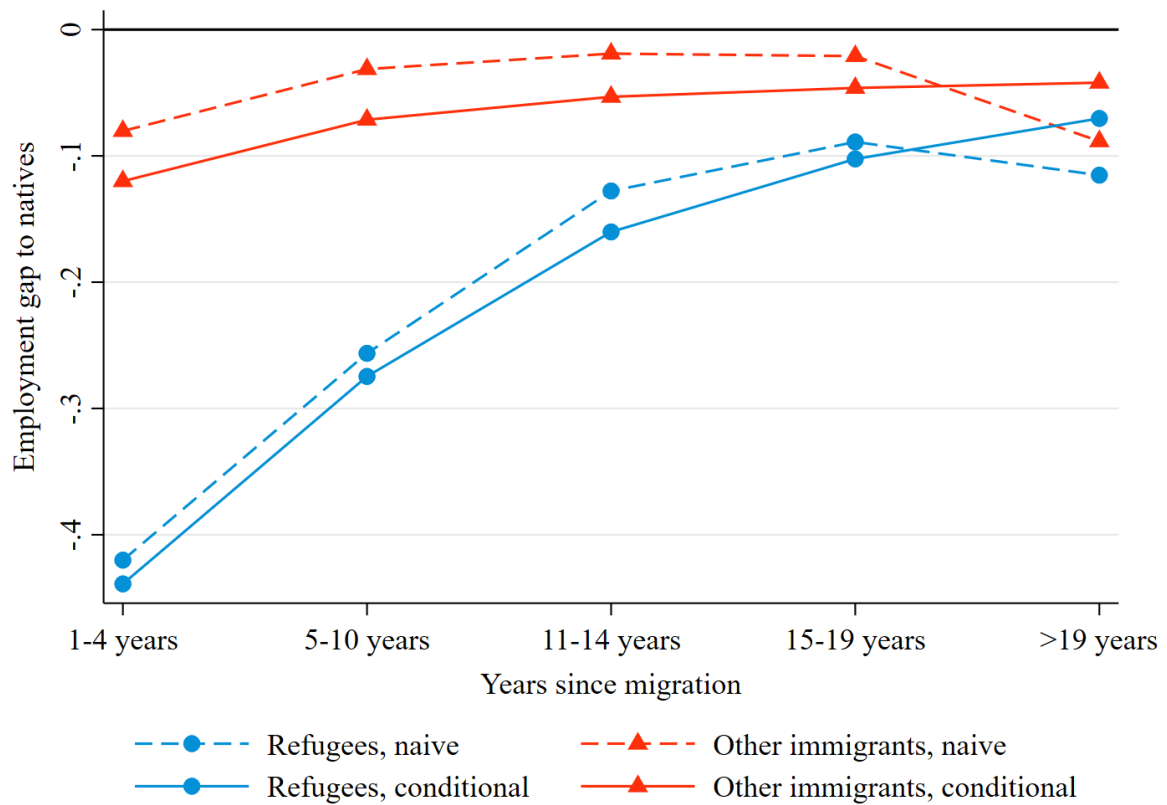
Note: The table shows descriptive statistics for the EU-LFS samples considered. Data for migrants is drawn from ad-hoc modules administered in 2008 and 2014. Since some information is included only in the 2014 module (e.g. language skills), we provide separate summary statistics for the 2014 wave, as well as the pooled 2008 and 2014 data. The sample groups consist of individuals between the ages of 20 and 64 whose main activity was not education. Migrants with any period of residency are included (cf. Table A2, in which we consider only those with at most 10 years residency in the host country). Refugees are identified by having their reason for migration recorded as international protection or asylum, while the “other immigrant” groups include any other non-native. Level of education is recorded in 3 categories, high corresponding to a tertiary degree, medium corresponding to an upper-secondary qualification, and low corresponding to those with a lower-secondary qualification or less. Language skills are reported on a 4 point scale (beginner or less, intermediate, advanced, mother tongue).

Figure A1. Employment rates of refugees by gender, over time since migration



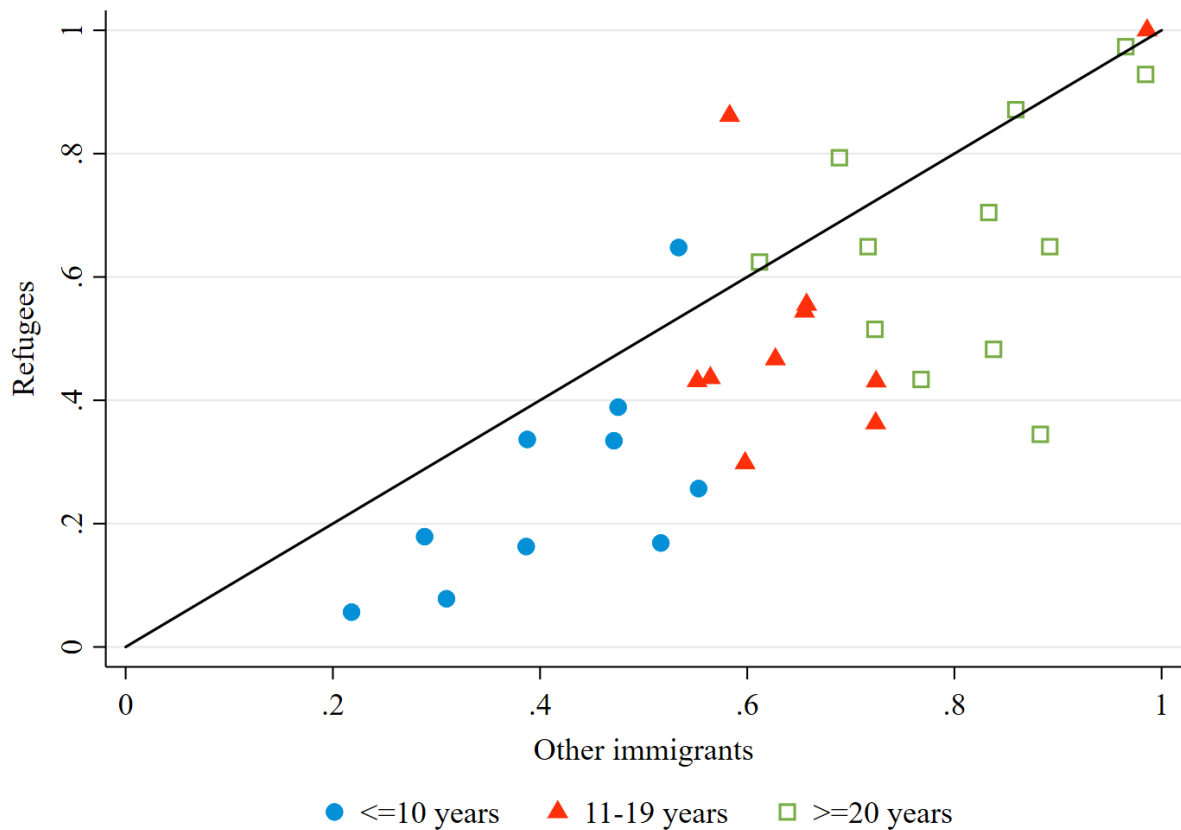
Note: The figure plots observed employment rates of male and female refugees in various host countries over time after migration. The precise sample groups vary in their construction due to having been obtained from different data sources (see the discussion in this online appendix), but generally consist of working age males and females. The results are based on data from the following sources: Australia - BNLA, HILDA; Canada - Census; Denmark - Administrative registers; Finland - Administrative registers; Germany - SOEP; Norway - Administrative registers; Sweden - Administrative registers; UK - SNR, LFS; USA - ACS.

Figure A2. Conditional and unconditional employment rates of immigrant groups in Europe



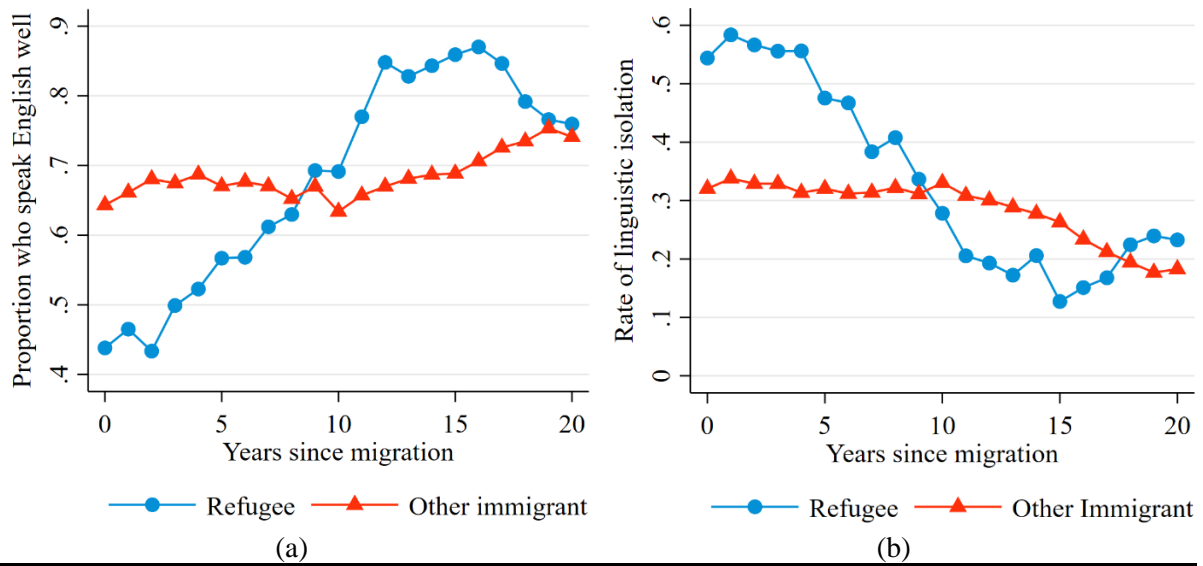
Note: This figure is based on data from the EU Labour Force Survey. Refugees are identified as those whose reported reasons for migration are international protection or asylum. The “other immigrants” sample consists of all other non-natives. The samples consist of individuals between the ages of 20 and 64 whose main activity is not education or training (see the discussion in this online appendix for details). The figure is based on both the 2008 and 2014 ad-hoc modules of the EU LFS. It shows the difference in employment rates of immigrant groups compared to the levels of natives, as a function of time since migration. These are estimated using a linear probability model for employment. The naive estimates control for only survey year-host country fixed effects, while the conditional series additionally control for age, education, and gender.

Figure A3. Language proficiency rates of immigrant groups across European countries



Note: This figure shows the language proficiency rates of refugees compared to those of other immigrants for various European countries. This plot is based on data from the 2014 ad-hoc module of the EU Labour Force Survey. Refugees are identified as those whose reported reasons for migration are international protection or asylum. The “other immigrants” sample consists of all other non-natives. Both groups are restricted to individuals between the ages of 20 and 64 whose main activity is not education or training (see the discussion in this online appendix for details). Proficiency in the host country language is recorded on a 4 point scale, from “beginner or less” to “mother tongue”. The figure shows the rates of respondents reporting one of the highest two categories (i.e. “advanced” or “mother tongue”). Each point in this figure represents a country, and the distance below the 45° line represents the extent to which refugees have worse language skills than other immigrants. This is shown separately for migrants who have been in the host country at most 10 years, between 11 and 19 years, and at least 20 years. Due to the small numbers of refugees in each individual country, some of the plotted points are calculated based on a small number of observations. Any individual point should be regarded as having limited reliability, though the general pattern can be expected to be more robust.

Figure A4. Language skills and linguistic isolation of immigrant groups in the USA



Note: This figure is based on data from the American Community Survey, 2013-2017 waves. Refugees are not directly identified in the survey, so refugee status is estimated based on country of origin and year of arrival (see the discussion in this online appendix for details). Subfigure (a) plots the fraction of refugees and other immigrants who speak English “well” or better over time since migration. Language skills are measured on a 5 point scale, from “Does not speak English”, to “Speaks only English”. “Well” corresponds to the third point on this scale, and so this figure documents how many migrants give any answer apart from the bottom two. Subfigure (b) plots the fraction of refugees and other immigrants who are classified as linguistically isolated. This is the case for individuals living in a household in which no person above the age of 14 speaks English “very well” or better. Note that this measure excludes individuals living in group quarters.