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.[1] 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.[2] 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

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

[2] 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).[3] Moments on earnings are

[3] 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		
Sample	Refugees	Non-refugee immigrants	Natives	Refugees	Non-refugee immigrants	Natives
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	LFS	LFS	ACS	ACS	ACS
2006-2009	2008	2008	2013-2017	2013-2017	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		
Sample	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	.	.	.

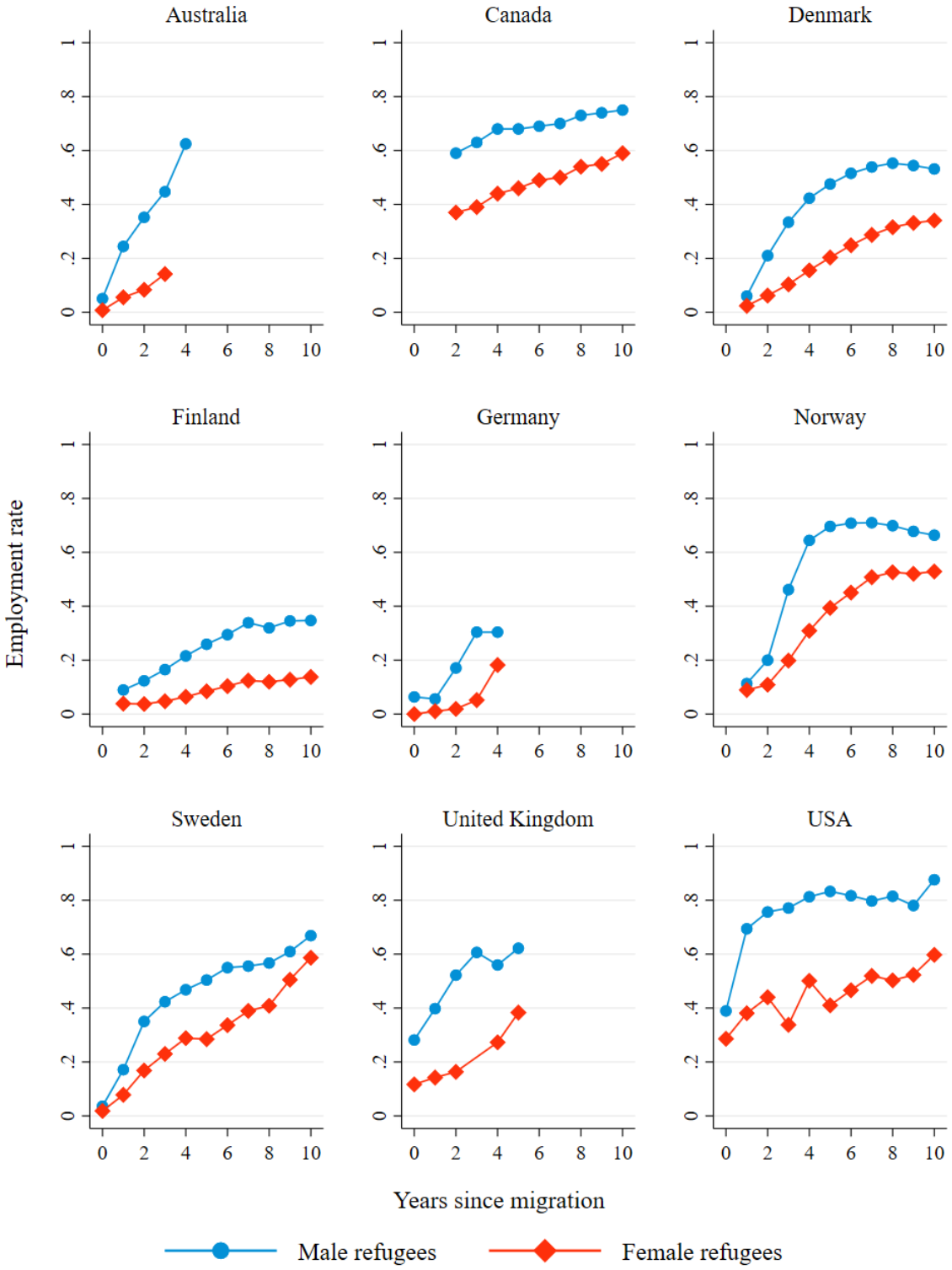
Note: The table shows descriptive statistics for the administrative datasets we use. We have been graciously provided moments from these sources by authors of various papers. Further details of the datasets and sample construction are discussed in this online appendix. Refugee and non-refugee immigrant 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	-	-	-	-

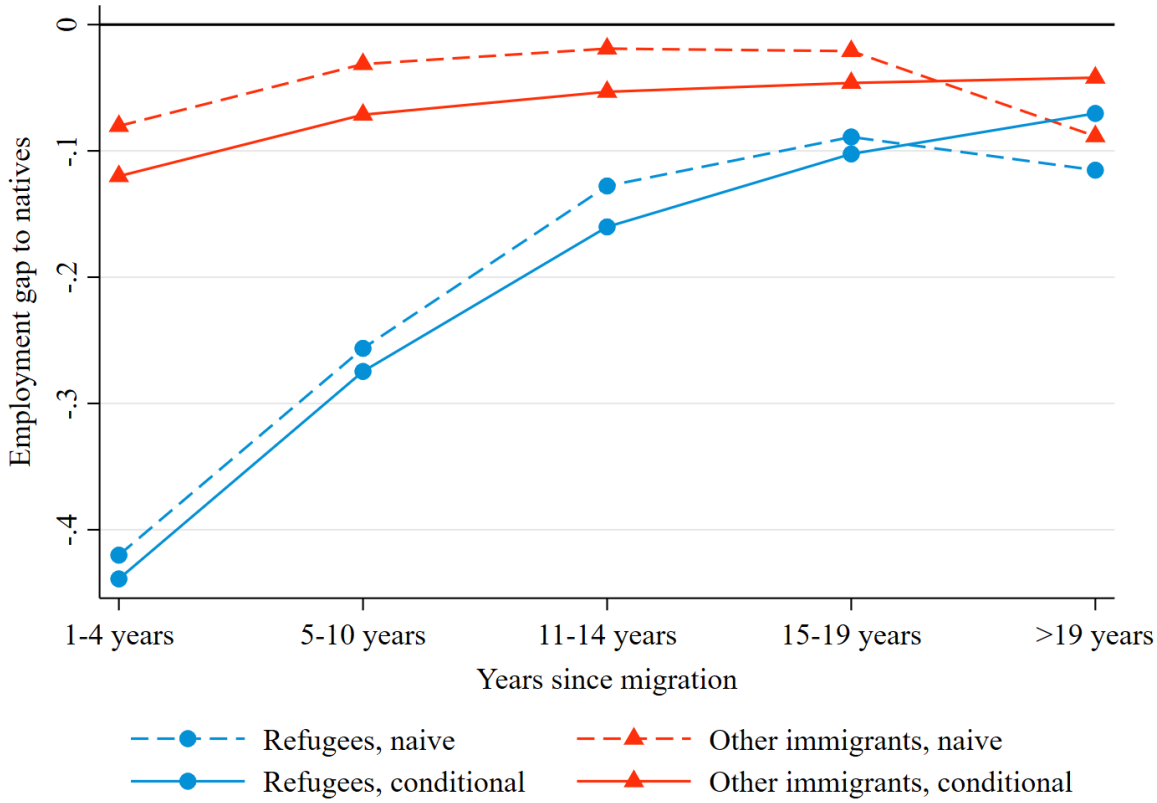
Note: The table shows descriptive statistics for the EU-LFS samples considered. Data for migrants is drawn from ad-hoc modules administered in 2008 and 2014. Since some information is included only in the 2014 module (e.g. language skills), we provide separate summary statistics for the 2014 wave, as 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



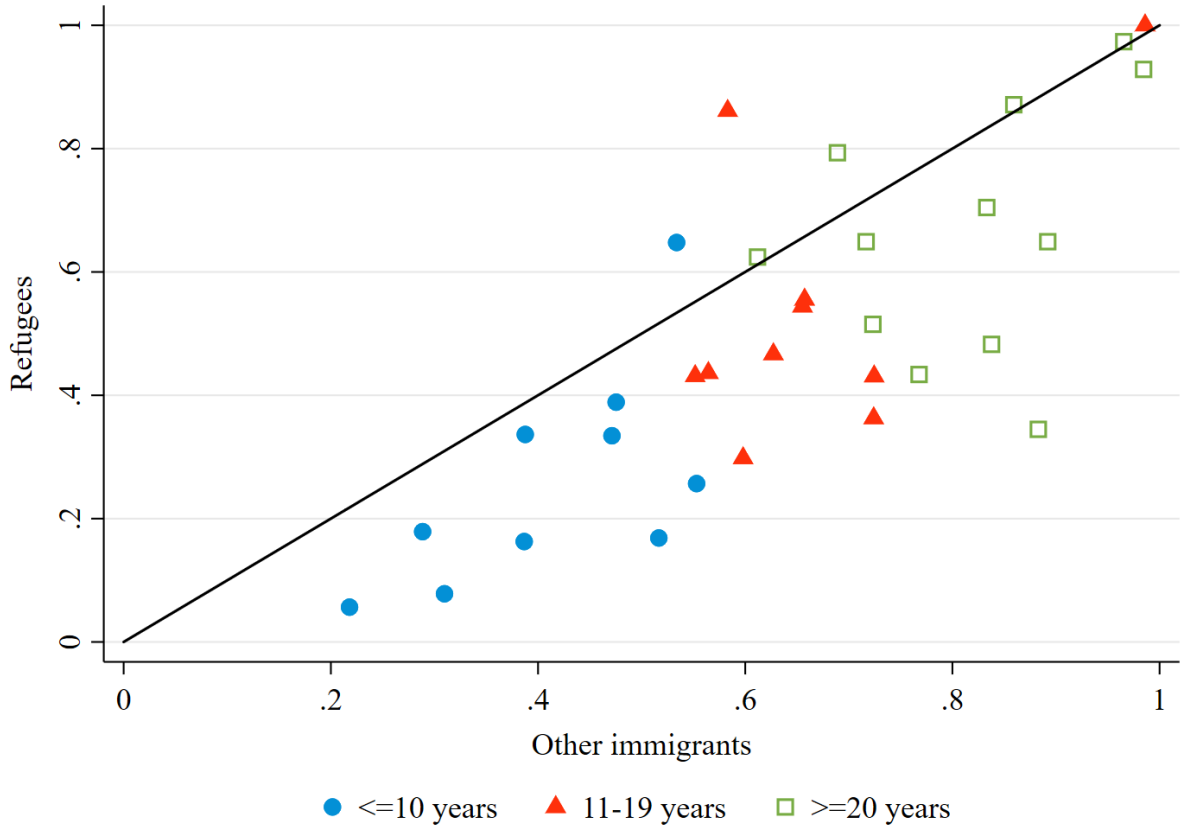
Note: The figure plots observed employment rates of male and female refugees in various host countries over time after migration. The precise sample groups vary in their construction due to having been obtained from different data sources (see the discussion in this online appendix), but generally consist 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



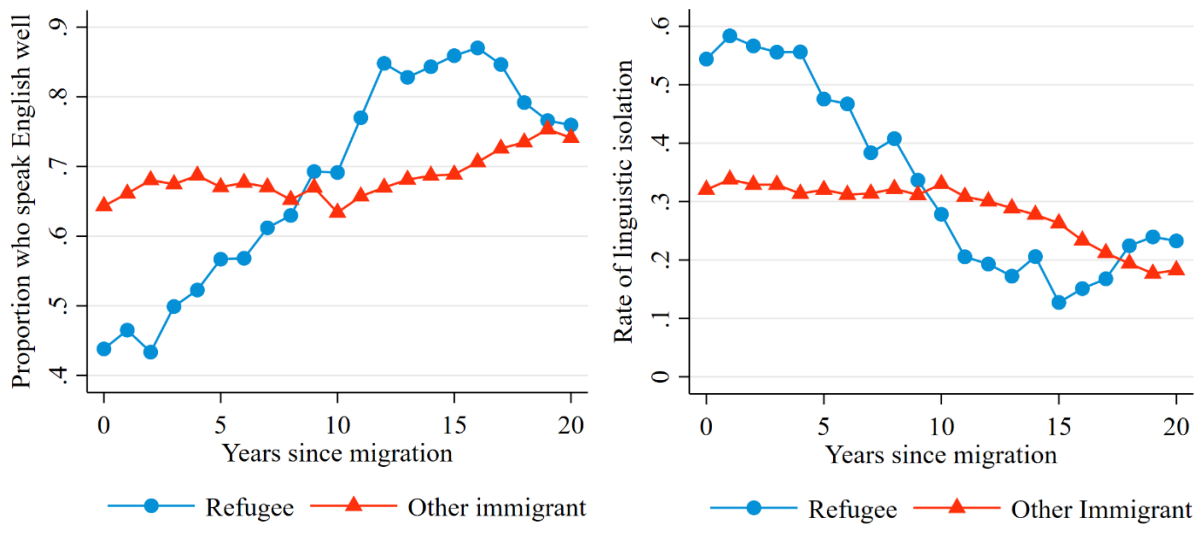
Note: This figure is based on data from the EU Labour Force Survey. Refugees are identified as those whose reported reasons for migration are international protection or asylum. The "other immigrants" sample consists of all other non-natives. The samples consist of individuals between the ages of 20 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



(a) (b)

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.