Labor Market Integration, Local Conditions and Inequalities

Evidence from Refugees in Switzerland

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Abstract

The paper examines the patterns of economic integration of refugees in Switzerland, a country with a long tradition of hosting refugees, a top-receiving host in Europe, and a prominent example of a multicultural society. It relies on a unique longitudinal dataset consisting of administrative records and social security data for the universe of refugees in Switzerland over 1998–2018. This data is used to reconstruct the individual-level trajectories of refugees and to follow them since arrival over the life-cycle. The study documents the patterns of labor-market integration, and highlights the heterogeneity by gender and age at arrival. Refugees' labor-market performance is compared to natives' and other groups of migrants' labor-market performance. The empirical analysis exploits the government dispersal policy in place since 1998, which consists of the random allocation of refugees across cantons, to identify the causal effects of the local initial conditions. The study finds that higher unemployment rates at arrival slow down the integration process, whereas the existence of a co-ethnic network does not consistently lead to a faster integration. It is shown that in locations where refugees face relatively more hostile attitudes by natives upon arrival, they integrate at a faster pace, probably due to a greater effort undertaken in environments that are more hostile. Together these results, highlight the importance of an early entry in the labor market of the host country, and the need to take a longer run perspective when examining the effectiveness of policies, as the effects may vary over time and different complementary interventions may be needed in the short vs. long-run.

Labor Market Integration, Local Conditions and Inequalities: Evidence from Refugees in Switzerland[1]

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1 Introduction

As a result of the recent 'Refugees crisis', which is the largest refugee crisis since the end of the Second World War, the issue of forced displacement is at the core of public discourse in many European countries. Understanding how policy measures and their interaction with local contexts, can help foster integration, reduce inequalities, and promote social cohesion between displaced populations and host communities is of paramount importance. Yet, the process of economic integration of refugees and how it is affected by the interplay between policies and local contexts are still not fully understood.

Switzerland provides a unique setting to examine these questions. It is an important example of a multilingual and multicultural society. Moreover, Switzerland is one of the European countries that hosts the largest number of refugees per capita (World Bank 2021.[2]) It also has a long history of receiving asylum seekers. At the end of the Second World War, Switzerland started hosting refugees coming from Eastern European countries. It led the international effort to set out the rights of individuals who are granted asylum and the responsibilities of the host nations, which led to the adoption of the 1951 Refugee Convention (Convention de Genève de 1951). Over the years, it has also had one of the most coherent refugees-related policies among European countries, and it never closed its borders to refugees (Piguet 2019).

The aim of the study is to examine the economic integration of refugees in Switzerland, the related inequalities, and the role of policies and local contexts in affecting the pattern of integration in the receiving society. Specifically, our study focuses on the effect of forced displacement on different dimensions of inequalities of refugees' labor-market outcomes by examining differences along the gender, socio-demographic and country of origin characteristics. We also examine how the inflow of asylum seekers affects inequalities among the hosts, by comparing labor-market outcomes with the native population. Our study consists of original empirical analysis. We employ a unique dataset based on the Swiss administrative records and social security data provided to us by the Swiss Federal Statistical Office (FSO). Our dataset includes the universe of refugees and migrants in Switzerland over 1998–2018. Our dataset presents the longitudinal dimension, which allows us to follow individuals over time and examine their labor-market outcomes and career trajectories over the life-cycle, comparing refugees to the host population and other migrants.

Our study complements the other papers that are part of this World Bank project on forced displacement. Specifically, it is closely related to the studies that examine the effect of forced displacement on inequalities. These studies focus on both low and middle-income countries, which have different traditions of hosting refugees (e.g., Albarosa and Elsner (2021) focusing on Germany; Kovac et al. (2021) on Bosnia and Herzegovina and Croatia; Murard (2021) examining the case of Greece and Aksoy and Ginn (2021) focusing on a cross-country comparison). On the other hand, we focus on Switzerland, an advanced economy with a multicultural society, and a long historical tradition of hosting refugees.

Our paper makes three main contributions to the existing literature. First, the specific context of Switzerland where refugees are randomly allocated across cantons that are different in terms of local economic and social conditions, provides us with a 'natural experiment'. This allows us to rigorously evaluate the causal effect of these determinants on refugees' labor market outcomes and economic integration. In this context, we examine the role of initial local conditions such as natives' attitudes towards refugees at the time of arrival in the host location, and their subsequent effects on the trajectory of economic integration. Second, we examine in a horserace model the relative importance of three fundamental initial local conditions, namely natives' attitudes, unemployment and co-ethnic networks. This allows us to determine the possible interplay among them. Third, contrary to what has been done in the core of the existing literature, we have a much longer time-frame. We are able to follow the same individuals over 20 years. This will allow us to examine the pattern of economic integration and how it changes over time in the short, medium and long-run. This is especially important to be able to draw

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policy recommendations.

The rest of the paper is organized as follows. Section 2 presents the background of the paper, describing the context, history of forced displacement and the current policy that regulates the asylum process and allocation of refugees across locations. Section 3 provides an overview of the existing literature, describes the theoretical contribution of this study and discusses the main hypotheses that will be tested in the analysis. Section 4 presents the empirical strategy, including a description of the data, research design and identification strategy. Section 5 presents the empirical findings and positions them within the existing literature. Section 6 provides concluding remarks and policy recommendations.

2 Context

2.1 Country and Regional Context

Europe is experiencing the largest refugee crisis since the end of the Second World War, with a sharp increase in the total number of refugees since 2010. The number of refugees has had a three-fold increase in European countries between 2013 and 2017 (Donato and Ferris 2020), reaching today an estimated stock of 2.9 million.[3]

In this context, Switzerland has been at the forefront in hosting refugees. Figure 1 shows the evolution in the total number of refugees from 1960. The number of refugees has steadily increased over time reaching a peak in the 1990s as a result of the Balkan Wars, and then again starting from 2010s, with the number of sheltered refugees that more than doubled from 48,813 to 110,162 over 2010–2019.

Switzerland can be regarded as the ultimate example of a multicultural society. The Swiss Confederation consists of 26 cantons in which four official languages are spoken: German, French, Italian, and Romansh. These languages divide the territory into four language regions with a total population of about 8.5 million individuals.[4] Moreover, Switzerland is one of the three countries in the world with the largest share of foreign-born population: about 30 percent of the total population is foreign-born,[5] and about 38 percent of its permanent residents aged 15 or older have a migrant background.[6]

The multicultural context in Switzerland goes along with a long humanitarian tradition. Table 1 shows the top 10 European countries in terms of number of refugees hosted. It is possible to observe that Switzerland, in spite of being a relatively small country (in terms of population), ranks number four in terms of share of hosted refugees. Only Sweden, Austria, and Germany host a higher share of refugees in the most recent year, 2019. This prominent role in hosting refugees is not a recent phenomenon. Figure 2 shows that over the past 60 years Switzerland has always been among the top four receiving countries, and before 1983 Switzerland ranked first in Europe in terms of share of hosted refugees. Switzerland has been part of an international process of convergence in sheltering refugees, resulting in new models of integration (Probst et al. 2019).

2.2 History of the Forced Displacement Context

The Swiss Confederation in its current form adopted a federal constitution in 1848. Individual cantons have long had the tradition of hosting refugees, and even today play a key role. Piguet (2019) documents the history of asylum on the Swiss territory as going back to the Roman age when Scandinavians fled famine. During the Middle Ages cities in Switzerland followed the trend of most European cities hosting

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3. World Bank Population Data on Population and Refugees: https://data.worldbank.org/. [Data accessed on April 17, 2021].

4. World Bank Population Data: https://data.worldbank.org/. [Population data accessed on April 17, 2021].

5. OECD (2021), Foreign-born population (indicator). doi: https://doi.org/10.1787/5a368e1b-en (Website accessed on May 8, 2021). The top three countries include: Luxembourg (47.3%), Australia (29.9%) and Switzerland (29.7%).

6. Sources: The Federal Statistical Office, Swiss Labour Force Survey (SLFS). [Information retrieved from the Federal Statistics Office Website (https://bit.ly/2RM8xv5) on April 17, 2021].

individuals escaping local wars in the neighborhood. For example, in 1444 Basel hosted thousands of individuals fleeing the Sundgau war. Later in the 16th century, Huguenots escaping France found shelter in the actual territory of Switzerland (Arlettaz and Arlettaz 1991; Parini 1997; Piguet 2019; Bertrand 2020).

During the 19th century, Switzerland emerged as an isle of peace for European refugees. The failure of many revolutions in Europe in 1848 led to over 12,000 Prussians, Austrians, Italians, Polish and Hungarians to seek refuge in Switzerland. This flow of refugees, in terms of share of total population, is comparable to the flux of refugees received at the peak of the 2015 crisis (Piguet 2019). The end of the 19th century and the beginning of the 20th century are characterized by expansive policies leading to Numa Drow, a federal councilor, to state in 1888 that "Asylum law represents one of the most important federal law" (page 42, paragraph 2). During this period, the flow of refugees and applications for asylum were mainly administered at the cantonal level. The only federal acts with implications on immigration and refugees relate to the regulation of obtaining the Swiss citizenship (1876, 1903 laws on naturalization).

After the First World War, and until the end of the Second World War, Switzerland passed through a period of restrictive policies. Two decrees play a special role during this period: the 1921 decree on controlling foreigners and the 1933 decree on settlement of foreigners. The 1921 decree on controlling foreigners is the first federal act that imposes restrictions on immigration, and thus on refugees. The 1933 decree states that anyone staying or planning to work in Switzerland must obtain a stay and work permit from the cantonal official authorities, and that the person cannot live or work in any other canton except the one delivering the authorization.[7] These restrictive policies had a particular impact on refugees between the two World Wars. Even though Switzerland offered shelters to many Jews, Roma, and Sinti threatened by Nazi Germany between 1933 and 1945.[8] Switzerland positioned itself during this period as a country of shelter only for a temporary stay, a country that refugees should leave as soon as possible.

The restrictive policies adopted during the Second World War are followed by more open policies. After the end of the conflict, Switzerland offers shelter to refugees from Hungary, the Czech Republic, and other people fleeing the eastern communist bloc. The large number of refugees after the Second World War across Europe leads to the creation of the International Organization of Refugees in 1946, which finds itself short of resources in the face of post war Europe. Thus, in 1949 the United Nations creates the High Commissariat of Refugees. Switzerland led the international effort to set out the rights of individuals who are granted asylum and the responsibilities of the host nations, which led to the adoption of the 1951 Refugee Convention (Convention de Genève de 1951). The Convention was initially adopted by 26 countries. Switzerland continued to shelter refugees from Eastern Europe fleeing the communist block until the nineties (Parini and Gianni 2005; Bertrand 2020).

What follows is a period characterized by even more expansive policies. Over time, the diversity of refugees in terms of country of origin, as well as the complexity of reasons for seeking asylum, significantly increased. In 1979 the first federal law on asylum was voted. Even so, the constant increase in the number of refugees in the nineties revived some older discussion on limiting immigration in Switzerland (previous initiatives against foreign overpopulation were submitted in 1965, 1969, 1972, 1974, 1977, 1985 and 1995). The number of individuals seeking asylum rose between 1985 and 1990 from 10,000 to over 42,000,[9] and peaked at over 100,000 in 1999, following the war in Kosovo.[10] These debates result in some more restrictions on asylum seekers and the adoption of a new federal law on

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7. Loi fédérale du 26 mars 1931 sur le séjour et l'établissement des étrangers. (Documents consulted on April 17, 2021 at https://www.ilo.org/dyn/natlex/natlex4.detail?p_lang=fr&p_isn=38804&p_classification=17).

8. The Final Report of the Independent Commission of Experts on the role of Switzerland during the Second World War documents 55 018 refugees in Switzerland in 1945 beside army refugees.

9. Office Fédéral de la Statistique, 2015, La Suisse: Terre d'immigration, société multiculturelle. Eléments pour une politique de migration.

10. Office Fédéral de la Statistique: https://www.sem.admin.ch/sem/fr/home/publiservice/statistik/asylstatistik/archiv/1999/12.html [Data accessed on May 1, 2021].

refugees in 1998. This law regulates the asylum procedures to our days. The last referendum in 2016 on the asylum law has led to a revisited procedure of asylum which was implemented on March 1, 2019. It includes an accelerated procedure for receiving the asylum status and more funding for the refugees' integration.

2.3   The Current Allocation Process of Refugees

In general, two channels of applications for asylum seekers exist in the case of Switzerland: direct applications to Switzerland and referrals by agencies like the United Nations Agency, United Nations High Commissioner for Refugees (UNHCR) (Piguet 2019; UNHCR 2011). The direct application is the main channel whereas the referral by agencies channel commonly works when there is a large-scale refugee crisis due to civil war or other events, and the UNHCR sends an agreed-upon number of refugees to Switzerland, among other resettlement countries, commonly from the temporary refugee camps set up in response to those crises.

In 2008, the Dublin Regulation came into full force. It aims to prevent multiple asylum applications across member states, and Switzerland also joined the Dublin Regulation in the same year (State Secretariat for Migration SEM 2019). The Dublin Regulation states that the first country where the asylum seeker is registered is the one responsible for processing the asylum application, with only a few exceptions (Aiyar et al. 2016). Thus, prior to 2008, an asylum seeker could potentially make multiple applications to different European countries. However, even after the full implementation of the Dublin Regulation, only a few member countries fully respected it, and the 2015 refugee crisis made the situation even worse. Following on from this crisis, the EU also relocated asylum seekers among member states under the new framework (Aiyar et al. 2016). This new framework only applies to member states. Non-member states associated with the Dublin Regulation, namely Switzerland along with Iceland, Norway and Liechtenstein, are not required to participate in the new framework either (European Commission 2016). Nevertheless, Switzerland subsequently decided to take up to 1500 asylum seekers (921 from Italy and 579 from Greece) through the relocation framework (State Secretariat for Migration SEM 2020).

Refugees' management is under the supervision of the federal authorities, namely the State Secretary of Migration (SEM). At entry on the territory, asylum seekers from all channels must fill in an asylum application. This asylum application can be filled in at any entry point in the country or at designated centers within the country. The application includes detailed personal information and the situation in the country of origin. Data collected at this point includes fingerprints and photos. The application is then submitted to the federal authorities. The refugee status is granted by the SEM following the analysis of the application and an interview with the person asking for refugee status. Non-entry status can be given at this point by the federal authorities.

Upon arrival, after the asylum application is submitted, asylum seekers are firstly accommodated in one of the six national refugees' centers.[11] The maximum time an individual can spend in the national accommodation centers is regulated by law to a maximum of 140 days.[12] At the end of the 140 days, or before if the centers are overcrowded or the asylum request was processed, asylum seekers are randomly assigned by SEM to one of the 26 cantons.[13]

The random assignment of asylum seekers to cantons is based on quotas. These quotas are a proportional function of the cantons' permanent resident population in the total population of Switzerland.

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11. UNHCR information on asylum process in Switzerland: https://www.unhcr.org/dach/ch-fr/nos-activites/asile-en-suisse/hebergement-pendant-la-procedure-dasile [Data accessed on April 27, 2021].

12. This duration of 140 days is regulated in Asylum Act (AsylA) of 26 June 1998, Section 2A, Article 14, line 4, Inserted by No I of the FA of 25 Sept. 2015, in force since 1 March 2019 (AS 2016 3101, 2018 2855; BBl 2014 7991), and in the Ordinance 1 on the Asylum related to the asylum procedures from 11 August 1999, Section 2A, Art. 14, line 2. Inserted by No I of the Ordinance of 8 June 2018, in force since 1 March 2019.

13. The random assignment was first introduced in 1986 by the revision of 2 December 1985, FF1986 I, p.20 to the 1979 Federal Law on Asylum. This random assignment is still in place today. The random assignment is currently regulated by Asy1A from 1998, art. 27.

Assignment does not account for any individual characteristics such as language spoken or education). The shares are officially regulated since the Asylum act AsyIV 1, from 26 June 1998.

Depending on the outcome of the asylum demand, asylum seekers may obtain different legal statuses to which different rights and obligations are attached. Once the refugees are assigned to cantons, it is the cantonal responsibility to take care of housing, health, social assistance, language learning, and integration into the labor market. Officially recognized refugees or individuals benefiting from temporary protection receive a temporary residence permit. As cantonal integration policies vary widely, integration varies as well in length and in procedure (Hainmueller et al. 2016; Hangartner et al. 2020).

Cantons are responsible for delivering the residence permit. For recognized asylum seekers the N permit is delivered. This permit covers the period while the SEM treats the asylum request. If the outcome of the asylum request is negative, the individual must leave the territory, or, if leaving the territory is judged to be impossible, the individual can obtain the F permit. The F permit relates to a foreigner admitted temporarily or a refugee admitted temporarily. The F permit must be renewed annually. For the N and the F permit holders, changing the canton is subject to the formal approval of cantonal change from the new hosting canton. Moreover, changing the canton implies the loss of the social benefits upon relocation. This makes it very difficult to change the initial canton assigned, and the large majority of refugees do not move. F permit holders can reside and work anywhere within the canton. Then, recognized refugees are entitled to receive the B permit, which has to be renewed on an annual basis. Recognized refugees[14] can change the cantons for both work and residency if they wish. However, mobility of refugees across cantons is very low even many years after reaching the status of recognized refugee. Recognized refugees have equal rights to Swiss nationals in front of the social security system (such as unemployment benefits and access to training and education). Refugees can obtain the Swiss nationality after ten years of permanent residency in the country if the federal conditions (such as language, the individual being integrated into Swiss society, etc.) plus eventual canton-level supplementary conditions are met.

Since January 1, 2019, temporary admitted refugees (F permit) and recognized refugees (B Permit) can work in the canton of residency upon a simple declaration.[15] However, this has not always been the case, and it is still not the case for asylum seekers (N permit). Asylum seekers can obtain a temporary working permit after their allocation to a canton if the local labor market is favorable. Before January 1, 2019, working rights for holders of F and B permits were regulated by the article 75 of the Asylum Law from 1998 and restricted any employment possibility during the first three months upon arrival in Switzerland. After this period, cantons could deliver working permits for the temporary admitted and recognized refugees if the local labor market conditions were favorable. This means that during periods of economic downturns, cantons could limit the employment of refugees.

The random allocation of refugees to cantons and the territorial mobility restrictions for the N and F permit detainers have not changed over the 1998–2018 period, which is the focus of our study. They represent important policy characteristics for our identification strategy.

3 Theoretical Motivation

3.1 Literature Review

This review focuses on the labor market integration of refugees in advanced economies, and on the role of the initial local conditions. For a general overview of the literature on the economic integration

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14. The holder of a residence permit (permit B) can change the canton of residency if she is not unemployed, dependent on social assistance, or under prosecution.

15. "Personnes relevant de l'asile et exercice d'une activité lucrative", https://www.sem.admin.ch/sem/fr/home/themen/arbeit/erwerbstaetige_asylbereich.html. [Website accessed on May 3, 2021, and Law Asy1A from 1998, Section 3, art. 61, introduced by LF from December 16, 2016 on Integration, active since January 1, 2019 (RO 2017 6521, 2018 3171; FF 2013 2131, 2016 2665)].

of refugees in high-income countries, refer to Brell et al. (2020) and for an excellent review of the existing studies on the impact on the labor market of the host countries see Verme and Schuettler (2021). Among the general facts that have been established in the literature is that refugees have worse integration outcomes such as employment probabilities and wages in high-income host countries than economic migrants. In the medium and long run (10 to 20 years), even if employment probabilities of these two groups of migrants converge, wage gaps are still persistent (Brell et al. 2020; Fasani et al. 2020b). Existing studies have also shown heterogeneity of the effects by gender, age at arrival and level of educational attainment and skills. However, these explanatory factors do not explain a significant share of the variation in the observed migrant-refugee gap in labor-market outcomes (Brell et al. 2020).

The literature has mainly examined separately a limited number of initial conditions: primarily the role of labor market conditions (i.e., unemployment), and the role of networks. The country-specific studies discussed in what follows rely on exogenous government placement policies allocating refugees across locations, which allows exploiting the exogenous variation in local labor market conditions.

Access to the labor market of the host country after arrival is important, and limitations[16] or exposure to high levels of local unemployment may have long-term consequences. The evidence in the case of refugees has consistently found that less favorable initial conditions in the labor market may have long-term effects on refugees' employment probabilities and earnings.

Åslund and Rooth (2007) show the effects of the initial conditions in terms of unemployment rates, encountered by refugees at arrival on long-term earnings and employment in Sweden. To document this, the authors use the FLYDATA, which offers detailed information on all refugees who received a residence permit between 1987 and 1991. Data on labor market outcomes come from the Sweden Longitudinal Individual Study. The authors are thus able to follow individuals over time until 1998. In comparing refugees entering Sweden during an economic boom and during severe and unexpected recession, the authors show that high unemployment rates at arrival have negative effects for at least ten years.

Aksoy et al. (2020) focus on refugees who arrived in Germany between 2013 and 2016 and were subsequently interviewed in the framework of the IAB-BAMF-SOEP survey. The authors examine the role of labor market conditions and attitudes towards migrants at the time of refugees' arrival. Their identification relies on the quasi-random allocation of refugees across counties. They find that high unemployment rates at arrival predicts future lower employment rates, lower earnings, and lower human capital investment. Conversely, positive attitudes towards migrants promote economic and social integration. Furthermore, integration outcomes are equally affected by both factors.

Another stream of the literature has examined the role of spatial concentration of co-ethnics, and how this affects refugees' pattern of integration in society. Specifically, existing studies have examined residential integration by focusing on the size of the ethnic enclaves. In the sociological literature, early descriptive studies examined segregation through the enclave setting and its role in shaping the integration of migrants into the labor market of the host country (e.g., Wilson and Portes (1980); Sanders and Nee (1987); Massey and Denton (1988)).

More recently, in the economics literature, Edin et al. (2003) look at the impacts of living in ethnic enclaves on the labor market outcome for refugees in Sweden. They rely on the placement

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16. For example, a few studies have examined the role of employment bans. Fasani et al. (2020a) investigate the medium to long-term effect of temporary employment bans on labor market outcomes for refugees in 19 European Countries, and find that bans at arrival reduces employment probability for refugees by 15 percent once the ban is lifted. This negative impact is driven primarily by reduced labor market participation. The authors also document that these bans have consequences on labor market participation even ten years after arrival in the country and that they negatively affect social integration in the long-run. Similarly, Marbach et al. (2018) use a policy change in Germany to assess the impact of labor market entry bans at arrival on future employment rates, which led different refugee cohorts to face different waiting times before entering the labor market. They find that employment rates 5 years after entering the labor market are 20 percent lower for individuals that had to wait seven months longer upon arrival. Moreover, the gap disappears after 10 years in the labor market. Together these findings suggest that long bans on labor market entry of refugees have long lasting effects on economic and social integration.

policy adopted by the Swedish government over 1985–1991 which placed refugees to initial hosting municipalities independent of individual characteristics. Using the Sweden Longitudinal Individual Data, the authors find substantive evidence of sorting across locations. Conditional on sorting, they find that less skilled migrants benefit from living in enclaves. An increase of one standard deviation in ethnic concentration results in a 13 percent increase in earnings. A second important result is related to the quality of the enclave. According to their findings, high-income ethnic groups gain more when living in enclaves compared to low-income ethnic groups.

Using a similar methodology, Damm (2009) analyzes the effects of the ethnic enclave size on labor market outcomes of migrants in Denmark. The identification strategy relies on the spatial dispersal policy adopted by the Danish government over 1986–1998, which consisted of a random allocation of refugees across locations. The dataset is extracted from the administrative records for migrants in Denmark between 1984 and 2000. The author documents strong evidence of self-selection into ethnic enclaves of refugees with unfavorable unobserved characteristics. Compared to Edin et al. (2003), Damm (2009) finds that one standard deviation increase in the size of the enclave results in a 18 percent increase in earnings, but regardless of the skills level. Furthermore, the author documents that ethnic networks disseminate job information, which translates into higher hourly earnings due to better matching.

Murard (2021) studies the long-term effects of the mass refugee inflow into Greece after the Greek-Turkish war of 1919-1922. The author combines different census and survey data from various source with information at different levels of geographic aggregation. The results show higher inter-generational mobility among refugees than natives, as shown by the "catching-up" of second-generation refugees, who currently have levels of educational attainment, occupations and income similar to natives. The empirical findings related to the effects on the social cohesion of the host communities, with the analysis of indicators such as refugees' political values, trust and civic engagement, suggest that a larger concentration of refugees in co-ethnic enclaves can lead to lower levels of social cohesion in the long run.

Martén et al. (2019) make use of the random assignment policy of refugees across Swiss cantons to investigate the causal effects of ethnic clusters on economic and social integration. The authors rely on the registry data from the State Secretariat of Migration that covers the universe of asylum seekers, combined with rich administrative data from the registry for all migrants living in Switzerland. They examine refugees who obtained subsidiary protection over 2008–2013. The authors find that larger local ethnic networks of refugees predict higher employment probabilities compared to refugees assigned to smaller ethnic communities. These effects are largest within the first three years since arrival and then they fade afterwards. These findings are consistent with the theory that larger networks of co-ethnics facilitate information transmission and better matching.

On the other hand, Battisti et al. (2021) find mixed evidence. They examine the role of co-ethnic networks in Germany over 2013–2015. Their identification strategy relies, as in previous studies, on the quasi-random allocation of refugees (and ethnic Germans) across locations. The authors use rich German social security data matched to migration survey data, which allow controlling for a large set of fixed effects and individual characteristics. They find that the larger initial ethnic networks are associated with higher employment probabilities for low and medium-level educated refugees in the first three years since arrival. However, in the long-run the effect dissipates and these refugees no longer have an advantage over those with smaller co-ethnic networks. The underlying mechanism they suggest is the lower incentives to invest in human capital among those with a larger initial network.

Another aspect related to initial conditions, which has been understudied, is the role of local attitudes towards refugees. The two existing studies, both focusing on Germany, have used self-reported measures of attitudes extracted from existing surveys, and they have examined the role of general attitudes towards migrants, and used it as a proxy for attitudes towards refugees. Aksoy et al. (2020) measure attitudes with cross-sectional state-level data from the European Social Survey. They find that positive attitudes towards migrants at the time of arrival, have a positive effect on refugees' economic

and social integration. On the other hand, Jaschke et al. (2020) rely on the questions on attitudes towards migrants available in the IAB-BAMF-SOEP-Survey of Refugees. They find that more negative attitudes towards migrants lead to a faster cultural convergence of refugees. In another study focusing on Germany, Albarosa and Elsner (2021) study the 2015 refugee inflow and its impact on social cohesion. The authors find no evidence that the inflow of refugees had an impact on social attitudes towards foreigners. However, they do find evidence of anti-migrant violence, and this effect lasted two years following on from the refugee inflow, and was stronger in counties with higher concentration of right-wing voters and lower employment rates.

3.2 Theoretical Contribution and Main Hypotheses

The specific context of Switzerland where refugees are randomly allocated across cantons that are different in terms of local labor market conditions, natives' attitudes towards refugees and size and nature of ethnic enclaves, allows us investigating empirically the role of these determinants on refugees' labor market outcomes and economic integration.

Our paper makes the following contributions. First, we examine the role that attitudes towards refugees at the time of arrival in the host country have on their subsequent trajectory of economic integration. As previously mentioned, the few existing studies present limitations. Here we improve in two ways. We use an objective measure of attitudes derived from voting behavior (as opposed to self-reported measures of attitudes from surveys). Moreover, we measure attitudes by also including specific attitudes towards refugees instead of focusing only on the more general attitudes towards migrants as done in the existing studies. This is very important given that economic migrants and refugees are two distinct groups of foreign-born, and attitudes towards them may be significantly different as documented in recent surveys carried out in 18 countries (Pew Research Center 2019).[17] Second, we examine the relative importance of the three initial conditions, namely attitudes, unemployment and co-ethnic networks. This will allow us to determine the possible interplay among them. Third, contrary to what has been done in most of the existing literature, we have a much longer time-frame. We are able to follow the same individuals over 20 years. This will allow us to examine the pattern of economic integration and how it changes over time in the short, medium and long-run.

Our empirical analysis will test the following hypotheses. Based on previous findings in the literature, we expect to find that refugees integrate in the host labor market at a slower pace compared to migrants in general (Brell et al. 2020). Moreover, we expect to find heterogeneity according to refugees' characteristics such as gender, age at arrival, and level of educational attainment. A limited number of studies have investigated the gender difference in the labor market integration of refugees. Existing research has highlighted the relatively low educational qualification of refugee women and the fact that they are more likely to have limited work experience, which could lead to a slower integration into the labor market in the host country (e.g., Albrecht et al. (2021)). Empirical findings across several EU countries suggest that on average the initial refugee-migrant employment gap is lower for women than for men, and that women converge to employment levels of comparable migrants at a faster pace than men (Fasani et al. 2020a). Other studies focusing on migrants, have found that women start with larger initial migrant-native gaps in employment than men, they converge at a faster pace but in some cases female migrants do not converge completely to the employment outcomes of similar natives even after a decade. On the other hand, gender differences for skilled individuals have consistently been found to be smaller (Lee et al. 2020; Bratsberg et al. 2014). It is an empirical question whether our analysis will predict faster integration for refugee women than for men—given that women traditionally have larger employment gaps at arrival and several factors may affect their subsequent participation in the labor market—, but we expect to observe similar convergence speed for skilled refugees irrespective of

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17. The Global Attitudes Survey was carried out by the Pew Research Center in Spring 2018. https://www.pewresearch.org/fact-tank/2019/08/09/people-around-the-world-express-more-support-for-taking-in-refugees-than-immigrants/

their gender. We expect to observe faster integration in the labor market for refugees who arrive at a younger age, and for those with higher levels of educational attainment.

In the analysis related to the role of the initial local conditions, we expect to find a negative role in the case of unemployment. High unemployment rates at arrival predict future lower employment rates, lower earnings, and lower human capital investment (Åslund and Rooth 2007; Aksoy et al. 2020). We expect to find a significant effect related to the size and density of the co-ethnic networks in the host locations, though the sign and magnitude of the estimated coefficient remains an empirical question. Co-ethnic networks can reduce transaction costs and help refugees to gain a faster access to the labor market, but on the other hand may reduce the incentives for refugees to further invest in their human capital which could lead to better labor market outcomes in the long run (Edin et al. 2003; Damm 2009; Battisti et al. 2021; Martén et al. 2019). We also expect to find a significant effect of attitudes towards refugees in affecting their trajectory of economic integration but the expected sign could be either positive or negative depending on the mechanism that prevails (Aksoy et al. 2020; Jaschke et al. 2020). An open empirical question remains on the relative importance of the three initial conditions (i.e., unemployment, co-ethnic enclaves and attitudes) when examined together. Moreover, we expect the effect of the individual factors to vary in the short, medium and long run over the 20 years examined.

In the next section we empirically investigate these issues, and examine whether these assumptions are supported by the empirical evidence.

4 Research Design

4.1 Data and Descriptive Statistics

In our analysis we construct a unique longitudinal dataset which covers the universe of refugees and migrants in Switzerland over 1998-2018. It allows us to follow refugees over the life-cycle for 20 years, and allows us to follow them even after they change residence permit and status.

To construct this longitudinal dataset we are combining three administrative datasets. The first dataset, that covers all asylum seekers is AUPER (Automatisierte Personen Registratursystem) which is provided by the State Secretariat for Migration. The data includes information about the residence permit, year of arrival, country of origin, canton of allocation and socio-demographic characteristics. Once an asylum seeker has obtained a residence permit other than permit N (asylum seekers) or F (provisionally admitted foreigners), he or she is registered in ZAR (Zentrales Ausländerregister). This longitudinal dataset is also coming from the SEM. The ZAR dataset includes all foreigners residing in Switzerland and contains similar information than AUPER. We are combining these two datasets with the yearly population census data that includes ZAR and AUPER starting from 2010. By combining these three datasets we can follow refugees and migrants over 1997-2018 and natives over 2010-2018.

We define as refugees, all foreign-born individuals that went through an asylum process, and as migrants all other foreign-born individuals. Natives are defined as individuals born in Switzerland. In the final sample, we are drawing a random sample of 6% of the native population.

For the main outcome variables used in the descriptive analysis, we are first adding Swiss social security data provided by the Federal Compensation Office. This data collects information about every Swiss resident that contributed to old age provision (i.e., the old-age and survivor's insurance OASI or AVS in French). We know the size and nature of the contribution made by individuals (from paid work, independent work, voluntary contribution or other kinds). This data is available from 1998-2018. Our main outcome variables measuring economic integration include employment, earnings and self-employment, and are constructed from the social security data. An individual is defined as employed if he or she contributed to old age provision from salaried or independent work. Earnings are defined as the sum of all positive contributions made from salaried and independent work in a year. Lastly, we

define as self-employed all individuals that contributed to old age provision from independent work.

In order to obtain information on an individual's education, we are adding the Swiss Structural Surveys from 2010–2017 to the data. The Structural Survey is a cross sectional dataset collected by the FSO that includes permanent residents aged 15 and older. Around 200,000 persons are randomly sampled every year to participate with an online questionnaire. The information we are using from the Structural Surveys is the highest completed level of education. Since this data is only available starting in 2010 and only for a subsample of individuals, we are assuming education to be constant over time and we are running most specifications first with the larger sample excluding the Structural Surveys and then with the smaller sample including the Structural Surveys.

The analytical sample used in our empirical analysis includes all refugees and migrants that arrived after 1998 since we only observe the labor market outcomes from 1998. We are restricting the sample to the working age population (18-64 years old)[18] and we only consider refugees and migrants who arrived after the age of 17, excluding those who would have had access to primary or secondary education in Switzerland.For the comparison of refugees and migrants we are further restricting the migrant group to those who are coming from a non EU-15 country to make them more comparable. Robustness checks with the universe of the migrant population are available from the authors.

The final sample includes 111,382 refugees, 701,371 migrants from non EU-15 countries and 1,293,071 natives. The sample that includes the Structural Surveys is smaller and comprises 12,379 refugees, 93,150 immigrants and 390,071 natives. Table 2 presents the summary statistics of the main variables used in the analysis.[19]

Figure 3 shows the top 10 origin countries for refugees arriving in Switzerland between 1998 and 2018. Most refugees in this period came from Eritrea, the second biggest group came from Syria, followed by Afghanistan. The biggest wave of refugees came to Switzerland in the year 2015.

In the second part of the empirical analysis, where we examine the role of the initial conditions, we focus on the universe of refugees and we add information on three different conditions in the canton of arrival at the time of arrival. The first condition we analyze is the unemployment rate. This data is measured yearly at the cantonal level and comes from the State Secretariat of Economic Affairs (SECO). The second dimension, we are looking at is the network of migrants and refugees from the same origin country residing in the arrival canton at the time of arrival. The variable co-ethnic network is defined as the log number of co-nationals, measured at the canton level. The third aspect we are focusing on are attitudes towards migrants and natives in the canton of arrival, measured by voting outcomes. The voting data comes from the FSO and the construction of our indicator is described in the remainder of this section.

Attitudes toward migration and asylum

To measure attitudes toward migration and asylum, we construct a time-varying indicator at the canton level, which is based on cantonal vote outcomes. The Swiss (semi-)direct democracy provides an ideal context to measure attitudes over time at a detailed geographical level. Between 1996 and 2020, Swiss voters were asked to vote 21 times on issues related to migration and asylum. A complete list of these votes is provided in Table A.1 in the appendix. There are three types of votes: popular initiative (a proposal to change the constitution, which can be initiated by a group of citizens with 100'000 signatures), mandatory referendum (the parliament proposes to change a constitutional article or an international treaty, which has to be approved by popular vote) and optional referendum (a law voted by the parliament is challenged by a group of citizens with 50'000 signatures). All these different types of votes have in common that the outcome of the popular vote is binding, since they result in a change in the constitution or the legal framework.

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18. We use 64 as the upper age bound given that in Switzerland the ordinary retirement age for women is 64 years.

19. Data for natives are only available after 2010. When we carry out comparisons between natives and refugees (and natives and migrants) in section 5.1, we limit the sample to the period 2010–2018.

For our indicator of attitudes toward migration and asylum, we use the share of votes in each canton that express a preference for a more restrictive regulation of migration and asylum. A first challenge is that each vote concerns a different project. Therefore, it is difficult to carry out comparisons between votes over time. We solve this problem by standardizing each vote outcome: what matters for our indicator is each canton's *relative* position at each moment in time. An important implication of this standardization is that our indicator cannot measure the change over time in average attitudes (at the country level). This is, however, not a problem for our empirical analysis, since we use year fixed effects in all our regressions.[20] We use the voting data to create our yearly indicator in the following way. When there is more than one vote within a year, we take the average of these vote outcomes. Then we use a simple method to fill in the missing values: for each missing value, we take the simple average of the two observations that are closest in time.[21] Figure 4 shows the resulting data for all 26 cantons over the period 1998–2018. Standardized vote outcomes are shown as black dots, whereas the filled-in data appears in red. Several patterns are clearly visible. First, the French-speaking cantons (FR, VD, VS, NE, GE, JU) generally exhibit less restrictive attitudes toward migration and asylum than Italian-speaking (TI) or German-speaking cantons. However, the attitudes in most French-speaking cantons have become more restrictive over time, whereas several German-speaking cantons (especially those with big cities, ZH and BS) have evolved toward more open attitudes. There is also a third group of cantons, including some small conservative cantons and Italian-speaking Ticino (TI), where initially restrictive attitudes have become even more restrictive over time.[22]

4.2 Empirical Strategy

Our empirical analysis is carried out in two parts. First, we study the integration of refugees in the Swiss labor market by looking at trajectories of employment rates (and earnings) after the refugees' arrival in Switzerland. Second, we analyze the impact of initial conditions on the employment of refugees over time.

Trajectories of Labor Market Integration

When analyzing the employment (and earnings) trajectories of refugees, we rely on two comparison groups: natives with similar individual characteristics and migrants with similar backgrounds (in terms of origin countries and individual characteristics). We compare refugees with natives, migrants with natives and refugees with migrants. The reason for doing this is that we can account for different unobserved factors in these comparisons.

We start by estimating the following linear probability model for natives and refugees:

$$Y_{it\tau c} = \alpha_0 + \sum_{j=0}^{10} \alpha_{1j} YSM_{itj} R_i + \beta X_{it} + \phi_t + \phi_\tau + \phi_a + \epsilon_{it\tau c} \tag{1}$$

where $Y_{it\tau c}$ denotes employment (or the log of earnings) in year t of refugee i, who arrived in Switzerland in year τ from origin country c. To measure the integration trajectories as precisely as possible, we use a flexible specification of the integration process: we define *Years since migration* dummies YSM_{itj} for categories j that denote two-year intervals (except for the $j = 0$ dummy, which stands for the period less than one year after arrival). This allows us to analyze the integration process over a period of 20 years ($j = 10$ denotes the interval 19–20 years after arrival). As these variables are not observed for natives,

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we interact the *Years since migration* dummies with R_i, a dummy variable for refugee status.[23] The coefficients α_{1j} can then be interpreted as employment gaps between natives and refugees, for different categories j of years since migration.

The vector X_{it} contains individual characteristics (age, age squared, gender, marital status). We use a set of fixed effects that are introduced progressively in our estimations: fixed effects ϕ_t control for current economic conditions in the host country, ϕ_τ for heterogeneity among arrival cohorts, and ϕ_a for heterogeneity in terms of the age structure of refugees upon arrival in Switzerland. Two remarks are in order regarding the identification of the integration trajectories. First, there is perfect collinearity for refugees between the year of arrival τ, the number of years since migration (YSM) and the current year t. We identify the effects of YSM and the year of arrival by assuming that the impact of the current year dummies (ϕ_t) on employment rates is identical for refugees and natives. This seems a reasonable assumption in our case since the period 2010–2018 is characterized by small fluctuations of unemployment and per capita GDP in Switzerland, which is among the countries that have not been strongly affected by the global financial crisis. Second, it might seem that we assume in equation (1) that the impact of age on employment is identical for natives and refugees. This is, however, not the case due to the presence of fixed effects ϕ_a, capturing the refugees' age at arrival. There is perfect collinearity between the refugees' age at arrival, their (current) age and the number of years since migration. Therefore, controlling for age at arrival is equivalent to controlling for the age of refugees separately from the age of natives. Third, there are no dummies for origin countries c in equation (1). When comparing natives and refugees (or natives and migrants), this set of dummies adds up to the refugee dummy and is therefore perfectly collinear with the set of YSM dummies. As a consequence, the vertical position of the employment gap profile cannot be identified if country of origin dummies are used. We address this question in the comparison between refugees and migrants, where we are able to account for heterogeneity in countries of origin.

The comparison between natives and refugees informs us if the employment rates of refugees catch up with similar natives in the long run, and how fast they converge to their long-run level. We then carry out a comparison between natives and migrants with a similar background as refugees, in order to check if the refugee status has a specific influence on employment trajectories.[24] We follow Fasani et al. (2020a) and select migrants from non EU-15 countries as the relevant comparison group. Although this choice excludes the largest migrant groups in Switzerland (Italy, Germany, France, Portugal, Spain etc.), the composition of non EU15 migrants and refugees still differs in terms of origin countries. To account for these differences, we finally proceed to a direct comparison between refugees and (non EU15) migrants. To do this, we estimate equation (1) for a sample including these two groups and add country of origin fixed effects to the estimating equation. One issue that arises in this estimation is the collinearity between the year of arrival, the number of years since migration and the current year. As all three variables are defined for migrants and refugees, we cannot address this problem in the same way as described above in the case of refugees and natives. Instead, we choose to drop the age at arrival dummies from the estimating equation.

A final issue concerns controls for education levels. In our main sample, which is drawn exclusively from administrative data, we do not observe individuals' education levels, as mentioned above. However, for a subsample of natives and refugees, we are able to match the administrative dataset with data on education levels from the Swiss Structural Survey. Therefore we estimate all equations on the two samples: first, by using the main sample without education variables, second, by using the restricted sample, taking dummy variables for education levels into account. We also check if the restricted sample can be considered a random sub-sample of our main sample by estimating the equation using

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23. To facilitate the interpretation of the estimation results, we do not drop a reference category for the YSM_{itj} dummies when we interact them with the refugee dummy R_i. For this reason, the R_i dummy itself does not appear in the equation since it is perfectly collinear with the interaction terms.

24. The comparison between natives and migrants is based on the same equation as (1), except that the refugee dummy is replaced by a dummy for migrant status.

the restricted sample without education dummies and comparing these results with those of the main sample.

Initial conditions

In the second part of our empirical analysis, we analyze the impact of initial conditions on the employment of refugees. We leverage the quasi-random initial allocation of refugees to cantons and use the sample for refugees over the period 1998–2010. Our baseline specification of the estimating equation aims at capturing the overall impact of initial conditions on a refugee's employment probability:

$$Y_{it\tau kc} = \delta_0 + \delta_1 I_{k\tau} + \delta_2 X_{it} + \phi_\tau + \phi_c + \phi_{kt} + \varepsilon_{it\tau kc}, \tag{2}$$

where $Y_{it\tau kc}$ denotes employment in year t of refugee i, who arrived in Switzerland in year τ from origin country c and was assigned by Swiss authorities to canton k. Our main focus is on the impact of initial conditions $I_{k\tau}$ on the employment of the refugee whose individual characteristics (age, age squared, gender, marital status) are contained in X_{it}. We analyze three aspects of initial conditions, $I_{k\tau}$: labor market conditions, co-ethnic or co-national network effects and natives' attitudes toward refugees and immigrants. To capture initial labor market conditions, we use the unemployment rate at the canton level during the refugee's year of arrival. This measure of the unemployment rate covers the universe of all unemployed individuals who are registered at a regional employment office and can therefore be considered a reliable measure even for small cantons.[25] To measure a refugee's initial network, we consider the number of co-nationals present in the refugee's canton of arrival during his or her year of arrival (in logarithms). There are few zeros for this variable in our sample (1.5%). To avoid losing these observations, we take the logarithm of (1 + the number of co-nationals). Finally, to measure attitudes toward migrants and refugees, we use our measure based on popular vote outcomes (described in detail in section 4.1). It is important to note that all three indicators are time-varying. This enables us to control for unobserved factors at the level of the canton of arrival.

We control for a large set of unobserved factors by using the following fixed effects. First, as our measure of initial attitudes is centered on the national average, we use year of arrival fixed effects. The latter also control for economic and social circumstances at the time of arrival. Second, we account for unobserved effects at the level of the canton of arrival, interacted with current year fixed effects. These fixed effects control for economic and social conditions in the canton (of arrival) during the current year (i.e. when the refugee's employment is observed). They capture in particular the impact of *current* cantonal unemployment rates, network sizes and attitudes of natives and enable us to identify the separate effects of *initial* conditions (values of these variables at the time of the refugee's arrival in Switzerland). Obviously, these interacted fixed effects also include fixed effects for the current year and for the canton of arrival. The latter implies that the effects of the variables capturing initial conditions are identified through their variation over time and between cantons. Furthermore, the heterogeneity of the refugees' backgrounds is taken into account by using country of origin fixed effects.

We also investigate the effects of initial conditions on a refugee's employment probability at different years since migration:

$$Y_{it\tau kc} = \gamma_0 + \sum_{j=1}^{5} \gamma_{1j} I_{k\tau} YSM_{itj} + \gamma_2 X_{it} + \phi_{YSM} + \phi_\tau + \phi_c + \phi_{kt} + \varepsilon_{it\tau kc}, \tag{3}$$

where YSM_{itj} are dummy variables indicating for how long refugee i has been in Switzerland in year t. We use a less detailed breakdown than in the first part and define five categories j of these dummy variables: 0–2 years ($j = 1$), 3–5 years ($j = 2$), 6–10 years ($j = 3$), 11-15 years ($j = 4$) and more than

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25. As it includes only permanent residents, asylum seekers (permit N) and temporarily admitted refugees (permit F) are not taken into account in this measure of the unemployment rate.

15 years ($j = 5$). The coefficients γ_{1j} are the main objects of interest and can be interpreted as the effects of initial condition $I_{k\tau}$ on employment probabilities of refugees, at different durations after their arrival in Switzerland.

In terms of threats to our identification strategy, one worry might be that the initial allocation process to cantons is not completely random. Other studies focusing on Switzerland have documented that the allocation of refugees is quasi-random and is not related to characteristics of the cantons (Coutonnier et al. (2019); Martén et al. (2019)).

Another concern would be that refugees move away from their initially assigned canton in great numbers. In this case, the fixed effects ϕ_{kt} would not capture the current economic and social conditions in the refugee's canton of residence. In our sample, this does not seem to be a big worry since only few refugees change cantons after their arrival.[26] This is mostly due to legal regulations. While waiting for the answer to their asylum request, refugees are not allowed to change cantons. This also holds for individuals who receive temporary protection (F permit): they cannot move to a different canton with this permit and they are allowed to apply for a regular permit after 5 years. Moreover, refugees who receive social assistance also remain in the initially assigned canton (whether they received refugee status or are under temporary protection) because in Switzerland social assistance is provided at the canton level. In any case, we also run our regressions excluding these observations as a robustness check.

5 Results

5.1 Trajectories of Labor Market Integration

In this section, we analyze the integration of refugees in the Swiss labor market by looking at trajectories of employment rates and earnings after the refugees' arrival in Switzerland. We use two different comparison groups: natives with similar individual characteristics and migrants with similar backgrounds (in terms of origin countries and individual characteristics). We also evaluate gender differences with respect to employment gaps and earnings differences.

Refugees and natives

Our first analysis of the labor market integration of refugees compares their employment rates with those of natives with similar characteristics. On average, the employment rate of refugees (43%) is much lower in our sample than the employment rate of natives (85%). The employment rates of refugees are close to zero immediately after their arrival in Switzerland. Upon arrival in Switzerland, refugees are not allowed to work during several months and their employment rates increase slowly thereafter. To evaluate the trajectories of refugees' labor market integration, we ask two questions: (i) What is the gap between employment rates of natives and refugees in the long run? (ii) How long does it take for refugees' employment rates to reach their long-run levels? To answer these two questions, we regress individual employment dummies on "years since migration" fixed effects, using a large set of control variables. Results are reported in Table 3.[27]

Consider first the estimates using the main sample, which are given in columns (1) to (4) of Table 3. Conditional on individual characteristics (age, gender, civil status), the employment rates of refugees are initially 90 percentage points lower than those of natives (see column (1) in Table 3). The reason why this gap is even higher than the average employment rate of natives (85%) is that a greater share

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26. In our main sample, only 7.5% of observations (52'079 observations out of 696'146) are reported for a different canton than the initially assigned canton.

27. To measure the integration trajectories as precisely as possible, we use a flexible specification of the assimilation process: we define years since migration dummies by two-year intervals (except for the "0 year" dummy, which stands for the period less than one year after arrival (refugees are not allowed to work for at least three months after their arrival). As these variables are not observed for natives, we interact the years since migration dummies with a dummy variable for refugee status.

of refugees are male and young. Even after 1 or 2 years in Switzerland, refugees' employment rates are almost 80 percentage points lower than natives' and it takes them more than 10 years to reach a level which is 18 to 20 percentage points lower than the employment rate of natives. Controlling for the economic conditions in the host country (using fixed effects for the year of observation) does not change these results (column (2)). In columns (3) and (4) we also control for heterogeneity among arrival cohorts and the age structure of refugees upon arrival in Switzerland (using fixed effects for year of arrival and age at arrival). Adding these controls has a small impact on coefficients, by reducing slightly the employment gap for the first five years after arrival.

In section 4.2 above, we discussed some problems of collinearity that arise in the context of the identification of the profiles of refugees' labor market integration. The first collinearity problem occurs in columns (3) to (6) of Table 3, where we control for year of arrival, the number of years since migration and the current year, which are perfectly collinear for refugees. We identify the effects of years since migration and the year of arrival by assuming that the impact of the current year dummies on employment rates is identical for refugees and natives. Second, in columns (4) to (6) we introduce fixed effects for the refugees' age at arrival. As there is perfect collinearity between the refugees' age at arrival, their age and the number of years since migration, this is equivalent to assuming that the impact of age on employment rates might differ for refugees and natives.[28]

These estimates do not take the lower education levels of refugees into account, since this variable is missing in our main sample. This information is available in the Structural Survey, which is carried out yearly since 2010 and covers each year approximately 2.5% of the Swiss population. We match the education data from the Structural Surveys 2010–2017 with the register data in our main sample. This restricted sample contains less than one fifth of the refugees in the main sample. To see if the individuals included in this restricted sample are representative of the entire population of natives and refugees, we first run the same regression as in column (4) for the main sample. Results, which are given in column (5), are close to those of the main sample, which makes us confident that the effect of education can be reliably estimated. When education dummies are added in column (6), results give a more optimistic picture of the integration trajectory: in the long run, employment rates of refugees are 15 percentage points lower than those of natives but it takes more than ten years after arrival in Switzerland to reach this level.

To gain more insight into the role of education in the integration process, we estimate integration profiles separately by level of education (see Table A.2 in the appendix). The employment rates of refugees with an elementary level of education (Secondary I) converge more rapidly toward the long run level, which is reached within 9 to 10 years. By contrast, the minority of refugees who have higher education levels (Secondary II, Tertiary) see their employment rates start at a lower level and converge more slowly toward the long run level (it takes more than 12 years to get there). This might be explained by the difficulty of having foreign diplomas recognized in Switzerland or, especially in the case of younger refugees, the time it takes to complete further education in Switzerland. Our data does not allow us to discriminate between these two explanations.

Some of the fixed effects used in the regressions in Table 3 are interesting in their own right. To analyze the role of the refugees' arrival cohorts on the employment trajectories, we run separate regressions for different arrival cohorts, which we define by three-year periods (in terms of "year of arrival") between 1998 and 2018. To obtain a sufficient sample size for each arrival cohort, we use the main sample (without education) and estimate specifications similar to column (4) in Table 3 for each three-year cohort. When looking at the estimation results summarized in Figure 6, three observations stand out. First, the overall shape traced out by all arrival cohorts is very close to the aggregate estimates in column (4) in Table 3. Second, Figure 6 reminds us that the lower part of the integration

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28. At first glance, it might seem more straightforward to include an interaction between "age" and the refugee dummy in the regression. However, this would make the integration profile difficult to interpret since, for refugees, increasing their number of "years since migration" goes hand in hand with increasing their age. Therefore, we choose to include variables that do not vary with "years since migration", such as "year of arrival" and "age at arrival".

profile is defined by refugees who arrived recently (after the year 2010) in Switzerland, whereas the upper part is determined by cohorts who arrived in Switzerland in the 2000s or even earlier. Third, there are some small differences between the cohorts. In particular, the two cohorts arrived between 2004 and 2009 seem to have increased their employment rates more rapidly in the initial years after their arrival.[29] A similar phenomenon seems to arise in the first year after their arrival (year "0") for the most recent cohorts. This might be due to recent changes in policy at the canton level, anticipating the federal reform of 2019, which had been discussed several years before its implementation.

Another important variable for labor market integration is the refugees' age at arrival. We would expect that the younger a refugee is at arrival, the easier it would be for him to integrate in the local labor market. On the other hand, the level of education also plays an important role in the integration process. Refugees are rather young (their median age at arrival is 27 years) and a large proportion among them is too young to have had the opportunity to get access to higher education in their home country before their flight. This is reflected in our sample: on average, only 14% of refugees have a tertiary education degree and those who were younger than 25 years at arrival are even less likely to hold a tertiary education degree.[30] Therefore, it is important to take education levels into account when comparing the integration trajectories for different ages at arrival. Hence we run regressions for different groups of age at arrival, using the same specification as in column (6) of Table 3, which includes education dummies and relies on the restricted sample. The results depicted in Figure 7 show that refugees who were younger at arrival integrate more rapidly into the labor market. Remarkably, the employment rates of refugees who were 18 to 20 years old at arrival increase very rapidly and attain long-run levels that are only slightly lower than those of comparable natives. On the other hand, for refugees who were older than 30 years at arrival, the employment gap is higher initially and remains around 20 percentage points even in the long run.

Refugees and migrants

These results show that, with the notable exceptions of those arrived at a very young age, refugees don't attain the high employment rates of the native working-age population. Another relevant comparison group are migrants from similar countries who arrived in Switzerland after the age of 18 years. Akin to Fasani et al. (2020a), we consider migrants from non-EU15 countries and compare their employment rates to those of natives and refugees. When comparing non-EU15 migrants with natives (using the same specifications as in Table 3), it appears that the former increase their employment rates more rapidly than refugees and reach higher levels in the long run. After one to two years in Switzerland, their employment rates are about 20 percentage points lower than those of natives; this gap is reduced to 8 percentage points in the long run (see column (6) in Table A.3 in the appendix, which takes differences in education levels into account). It seems therefore that there are differences in employment trajectories between refugees and migrants. However, this comparison does not account for differences in origin countries between migrants and refugees .

To assess whether origin countries play a role in these comparisons, we turn to a direct comparison between non-EU15 migrants and refugees. Figure 8 shows the differences in employment rates between the two groups for different specifications. The baseline does not take differences in education levels or origin countries into account. We then introduce origin countries fixed effects and education dummies, first separately, then together.[31] It turns out that accounting for education differences or for countries of origin yields very similar results; the combination of both does not alter this conclusion. According

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29. This does not seem to be due to changes in education levels between cohorts. When education levels are included in regressions using the restricted sample, these effecs do not disappear. See Figure A.1 in the appendix.

30. As we observe education levels in the Structural Surveys between the years 2010 and 2017 (and not at the moment of arrival), this seems to imply that only a very small number of refugees who arrived in Switzerland between the ages of 18 and 25 years were able to obtain a tertiary education degree in Switzerland.

31. As above, the specifications without education levels rely on the main sample, whereas those with education dummies use the restricted sample. The detailed results of these estimations are given in Table A.4 in the appendix.

to these estimates, labor market integration takes more time for refugees than for migrants. After 9–10 years, employment rates of refugees are 4 percentage points lower than those of migrants and this difference persists in the long run.

These integration profiles differ slightly from the (average) profile estimated by Fasani et al. (2020a, Figure 3) for 20 European countries (including Switzerland). The increase in employment rates seems to be more rapid in Switzerland since long-run levels are reached after 10 years in Switzerland, compared to 15 years in the 20 European countries. On the other hand, in Switzerland refugees never quite attain the same employment rates as migrants in the long run whereas this seems to be the case in other European countries according to the results in Fasani et al. (2020a), although this difference might not be statistically significant. If we compare the trajectories in Switzerland with those estimated by Bratsberg et al. (2014, Table 2) using comparable administrative data for Sweden, the long-run outcome in terms of employment rates for refugees (relative to natives) does not seem to be worse in Switzerland.

Selection and truncation

Before turning to results by gender, we address two issues related to selection and truncation of our sample. First, many refugees leave Switzerland during the period of observation, either voluntarily or because all legal possibilities to remain in Switzerland have been exhausted. A problem of selective out-migration arises if out-migration and employment probabilities are correlated. Second, individuals in our panel are observed over different time spans, which implies that the variable *Years since migration* is truncated in our sample. Before we discuss these issues further, it is worth asking when one should correct for selective out-migration. A policy maker who cares about the cost of social assistance and unemployment benefits paid to refugees would be interested in integration profiles of refugees without correcting for selective out-migration (Dustmann and Görlach 2016). Hence, the results discussed above are relevant in such a policy context. However, selective out-migration is of interest in the perspective of a more complete economic model that distinguishes between emigration behavior and the determination of employment in the labor market.

To check if selective out-migration plays a role in our context, we re-estimate equation (1) using individual fixed effects. This yields consistent estimates if selection depends on time-invariant unobservables.[32] The drawback of using individual fixed effects is that the vertical position of the integration profile is not identified in the regression (i.e. all coefficients of the integration profile are identified up to an additive constant). In other words, it is possible to compare the "speed" of integration but not the "level". When comparing the estimates with individual fixed effects to those in Tables 3 and A.4, we can conclude that selective out-migration has a discernible but small influence on our results. On the one hand, the differences between the integration speeds that can be calculated from the estimates reported in these two tables and those obtained using individual fixed effects are small.[33] On the other hand, the speed of refugees' labor market integration is slightly overestimated when comparing them to non-EU migrants in Table A.4. This seems to indicate that the probabilities of out-migration and employment are negatively correlated for refugees and/or positively correlated for non-EU migrants.

Now turn to the issue of truncation. If we consider the sample used to compare refugees with natives, the variable *Years since migration* is truncated below a certain value for refugees arrived before 2010, and above a certain value for those arrived after 2000. Figure 6 shows clearly how the variable *Years since migration* is truncated for different arrival cohorts. We already mentioned one implication of this truncation pattern: recently arrived cohorts determine the shape of the integration profile for the early

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32. See Dustmann and Görlach (2016). If selection depends on time-variant unobservables, these authors propose to model out-migration explicitly in the context of a structural model, an approach which goes beyond the scope of our paper.

33. For example, regression (4) in Table 3 finds that the employment gap between natives and refugees decreases by 62 percentage points over 20 years: from 81 percentage points upon arrival to 18 percentage points after 19 to 20 years. The corresponding estimate with individual FE (available upon request) is 64.5 percentage points.

years after arrival in Switzerland, whereas older cohorts define the profile beyond 10 years after arrival. We also observed that the two cohorts arrived between 2004 and 2009 seem to have higher employment rates 1 to 6 years after arrival. The most likely explanation for this observation is selection: as we only observe refugees who were present in Switzerland from 2010 onwards, these estimates are upward biased if out-migration is negatively correlated with the probability of employment. Our estimates with individual fixed effects confirm this conclusion since they suggest that the estimates in Table 3 (which capture an "average" integration profile for all cohorts) slightly underestimate the speed of integration between 1 and 6 years after arrival. However, this bias seems to be small, as the numbers detailed in footnote 33 make clear.

Gender differences

Participation rates are higher in Switzerland both for men and women than in other European countries, by roughly ten percentage points (73% for men in Switzerland vs. 64% in the EU15 in 2019; 63% for women in Switzerland vs. 53% in the EU15). On the other hand, part-time employment is far more widespread in Switzerland, especially for women (62% in Switzerland vs. 38% in the EU15). How do male and female refugees fare in this context?

To answer this question, we return to the comparisons between natives and refugees. Figure 9 shows the employment gaps between refugees and natives, separately for men and women. The "baseline" regression (dashed line) uses the main sample and relies on a specification similar to (4) in Table 3. The solid line represents a regression that includes education fixed effects and relies on the restricted sample (as in column (6) in Table 3). In the long run, the employment gap between natives and refugees is similar for men and women. However, it appears that the employment rates of male refugees, albeit starting initially from a lower level, increase more rapidly than employment rates for female refugees. After 7–8 years, male refugees reach employment rates that are 15 percentage points lower than those of male natives. By contrast, it takes more than 15 years for female refugees to attain a similar gap.[34]

It is also instructive to compare earnings of natives and migrants, conditional on employment. A striking results in Figure 10 is that the earnings gap between natives and migrants is smaller for women than for men. The gap for women decreases from 77% initially to 28% after 7–8 years, a level at which it remains thereafter.[35] For men, the gap diminishes from 85% initially to 40% after 7–8 years, and increases again to 50% after 20 years.

5.2 Initial Conditions

In this section, we analyze the impact of initial conditions on the employment of refugees over the life-cycle. We examine the influence of three factors that are measured at the time of arrival of refugees in Switzerland: labor market conditions, co-ethnic (or co-national) networks and natives' attitudes toward migrants and refugees. The main focus of our analysis lies on the role of natives' attitudes, since our paper is the first to consider a time-varying measure of attitudes at the local level. Moreover, our data allows us to consider the simultaneous influence of all three factors on employment rates of refugees over a long period.

Table 4 shows our baseline results, which are obtained from the estimation of equation (2). As in the preceding section, we report results for the main sample (without education fixed effects) and for the restricted sample (including education fixed effects). We analyze the impact of each factor taken separately (in columns (1) to (6)) and together (columns (7) and (8) of Table 4). These baseline results are consistent across samples and specifications. We find a negative significant impact of unemployment rates at the time of arrival on employment rates of refugees in the following years and a positive

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34. Detailed results by gender are given in Tables A.5 and A.6 in the appendix. The regressions depicted in Figure 9 correspond to columns (4) and (6) of these tables.

35. If $\hat{\beta}$ denotes the coefficient of the interaction Refugee $\times YSM$ in the regression, the gap is obtained as $1 - \exp(\beta)$. The detailed numbers underlying Figure 10 can be found in columns (4) and (6) in Tables A.7 and A.8 in the appendix.

significant impact of restrictive attitudes toward refugees and immigrants upon arrival. By contrast, the effect of co-national networks is not significantly different from zero in the baseline.[36] Note that the result for one variable hardly changes when other variables are introduced into the regression. This seems to indicate that, conditional on the large set of controls, the three variables are close to orthogonal.

The effects of unemployment and attitudes are both economically and statistically significant. If the unemployment rate increases over time from 1.7% (10th percentile of the distribution of unemployment rates) to 4.8% (90th percentile) a few years later, the employment probability of the refugee who arrives at the later stage will be on average around 7 percentage points lower over the life cycle. Similarly, a refugee who arrives at a moment when attitudes toward immigration and asylum are rather open (-1.7, 10th percentile of the attitudes distribution) has an employment probability which is 7 percentage points lower over the life cycle than the refugee who arrives a few years later when attitudes have become more restrictive (1.1, 90th percentile).

To gather more insights on the effects of initial conditions over the refugee's life cycle, we estimate equation (3), where the initial conditions are interacted with years since migration dummies. Results are reported in Table 5. In column (1), we analyze the effects of attitudes taken alone, using the main sample (without education dummies). We then introduce successively the two other initial conditions in columns (2) and (3). The three remaining columns are organized in the same way, using the restricted sample and education dummies. The results reveal that both initial unemployment and initial attitudes have long-lasting effects on the employment probability of refugees. The negative effects of initial unemployment seem to be cumulative over time and the maximum is reached after (more than) 15 years after arrival. By contrast, the impact of attitudes seems to be rather weak during the first two years after arrival, reaches a maximum 3–5 years after arrival, and then decreases over time.

In the restricted sample, these effects are estimated with less precision (see Tables 4 and 5). Upon closer inspection, we draw two conclusions from our estimation results. First, adding education fixed effects to the regression has hardly any impact on the coefficients of the variables of interest.[37] Second, the small differences between coefficients obtained using the full or the restricted sample appear not to be statistically significant.[38] Therefore, we conclude that the results for the main sample are more reliable, as they are based on the universe of refugees (and there is nothing to gain from using the restricted sample).

How do these results compare to other findings in the literature? Our results on the impact of unemployment are consistent with the evidence for Sweden reported in Åslund and Rooth (2007) who find that initial unemployment rates have a negative effect on refugees' employment for at least 10 years. We obtain similar quantitative effects and find that the effect is even more long-lasting and cumulative over time.[39] These findings can be explained by the existence of scarring and geographical lock-in effects.

Our estimates provide robust empirical evidence that more restrictive attitudes by natives at the time of arrival lead to higher employment of refugees the years thereafter. These results contrast with the findings by Aksoy et al. (2020) who conclude that restrictive attitudes toward immigration

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36. Standard errors are clustered at the level of Canton of arrival × Year of arrival.

37. This can be seen as follows. If regression (8) in Table 4 is run without the education fixed effects, results are almost identical to those reported in Table 4. Similarly, if regressions (4) to (6) in Table 5 are estimated without the education fixed effects, results are almost identical to those reported in columns (4) to (6) in Table 5. These results are available from the authors upon request..

38. To test these differences, we estimate an augmented version of regression (7) in Table 4. We use the full sample and define a dummy variable S_i which takes the value 1 for observations that are part of the restricted sample. In the augmented version of (7) that we estimate, all variables (and fixed effects) are interacted with S_i. We then carry out a joint test of the hypothesis that the effects of unemployment, networks and attitudes on refugees' employment are the same in both samples. This hypothesis is not rejected in the data.

39. Åslund and Rooth (2007) report that, according to their estimates, the employment probability in Sweden decreases by about 4–5 percentage points (or up to 10 percentage points in another specification) if initial local unemployment doubles. If we consider a similar increase of local unemployment rates in Switzerland from 2% to 4% (the mean is 3.0%), our estimates indicate that refugees' employment rates would increase by 4 to 7 percentage points, depending on the specification and the duration after arrival.

are negatively related with the economic integration of refugees in Germany. How can these diverging results be explained? A first possibility is that there might be different mechanisms at work in Germany and Switzerland. On the one hand, if natives have more open attitudes toward migrants and refugees, this could facilitate private and professional contacts between natives and refugees and, potentially, reduce hiring discrimination. On the other hand, when natives' attitudes become more restrictive over time, refugees could feel pressured to increase their integration efforts and search more intensively for a job. Refugees thereby signal their employability, which has been found to be one of the factors that increase the acceptance of refugees by natives (Bansak et al. 2016). The results of Aksoy et al. (2020) suggest that the former mechanism is stronger in Germany whereas our findings provide support for the preponderance of the second mechanism in Switzerland.

Another possible explanation for the difference in results lies in the empirical approach. In our estimations, the effect of attitudes is identified solely through their variations over time in the different cantons at the time of arrival (since we use canton of arrival fixed effects in all specifications), whereas this is not the case in Aksoy et al. (2020).[40] It is easy to see why this matters in the case of Switzerland. Figure 5 summarizes the relation between initial attitudes in 1998 and the change over the period 1998–2018 for each canton (the size of each dot represents the canton's population size). Almost all cantons that had open attitudes toward migrants and refugees in 1998 became more restrictive over the following twenty years. This is the case in particular for all French-speaking cantons. On the other hand, many of the initially restrictive cantons have become less restrictive over time, in particular the most populated German-speaking cantons. Therefore, the change over time of attitudes is negatively correlated with the initial attitudes although there is also a group of small cantons, including the Italian-speaking canton of Ticino, which started from a restrictive position in 1998 and became even more restrictive over time.

This implies that our results should be interpreted with care. We find that a change toward more restrictive attitudes over time in a canton (relative to attitudes in other cantons) leads to higher employment rates of the successive refugee cohorts. Our results do *not* imply that a refugee who is assigned to a canton which has more restrictive attitudes would fare better in terms of future employment than a refugee who is assigned to a canton whose citizens are more open toward refugees and migrants.

A highly simplified example might clarify the interpretation of our results. Consider four refugees (A, B, C and D) with identical personal characteristics, arriving in Geneva or Zürich in the year 2000 or 2010. If A is assigned in 2000 to Geneva (where attitudes toward migrants and refugees were open in 2000 but became more restrictive in 2010) and B in 2010 to the same canton, our results imply that B has better chances than A of being employed in the years following their arrival. Conversely, if C and D are assigned to Zürich (where attitudes toward migrants and refugees were rather negative in 2000 but became more open in 2010), C (who arrives in 2000) has better chances of having a job after his arrival than D (who arrives in 2010). However, our results do not imply that C has a higher probability of being employed after his arrival than A; the opposite might well be true (since these level effects are absorbed by the canton of arrival fixed effects in our estimations).

Our discussion of the attitudes in the different cantons showed clearly the difference between language regions in Switzerland. This raises the question if there might be a cultural dimension involved in the relation between natives' attitudes and employment rates of refugees. In Table 6, we report regressions where the initial condition variables are interacted with dummies for the language region. We only discuss the results for the main sample.[41] Both for unemployment and attitudes, the effects are very similar across language regions. Overall, the estimation results do not detect any clear cultural differences. The effects seem to be of slightly smaller magnitude for the German-speaking region,

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40. Aksoy et al. (2020) carry out their analysis at the county level but do not use county fixed effects (they use fixed effects at a more aggregate level, NUTS-2 sub-region). This implies that the difference in levels of attitudes within a NUTS-2 subregion contributes to the estimation of the relevant effect.

41. As discussed above, the effects are estimated with less precision in the restricted sample and the introduction of education fixed effects has no not change the results.

especially for attitudes. The latter result might be explained by an asymmetry between the effects of attitudes becoming more restrictive, on the one hand, and attitudes becoming more open, on the other hand. If the latter effect is smaller than the former, this could explain the smaller effect found for the German-speaking region (where attitudes are improving in several cantons). Finally, the network variable has a positive effect in the Italian-speaking canton of Ticino. It is not clear whether this is due to cultural differences or to the particular geographic position of this canton.

We conclude our discussion of the role of initial conditions by focusing on the gender dimension (see Tables A.9 to A.12 in the appendix). Again, we only consider the results for the main sample. The effect of attitudes seems to be more persistent for female refugees although the average effect over the life-cycle is close to the one for male refugees. For women, the effect tends to increase over time whereas it is strongest for men around 3–5 years after arrival and decreases thereafter. The impact of unemployment also grows stronger over time for female refugees but not for male. Interestingly, the impact of co-national networks becomes significant, but with opposite sign, for male and female refugees. Female refugees seem to benefit from networks (even in the long run), whereas for male refugees the negative effects dominate, especially in the short run. A possible explanation of the positive effect for women is that they benefit from child care services within their co-national network, enabling them to increase their labor market participation.

Finally, we carry out a robustness test which addresses the concern that refugees who move out of the assigned canton might influence the results. We already mentioned that few refugees actually do so but we check if these observations might have an influence on our results. We therefore run all our regressions on a sample from which we drop the observations where the canton of residence differs from the initially assigned canton (7.5% of observations). There are hardly any differences between these results and those reported in Tables 4, 5 and 6.[42]

6 Concluding Remarks and Policy Implications

In this paper, we analyze the integration of refugees in the Swiss labor market by looking at trajectories of employment rates and by analyzing the impact of initial conditions on these trajectories. We combine data from a longitudinal dataset, which covers the universe of refugees and migrants in Switzerland over 1998-2018, with data on attitudes toward refugees and migrants, which are derived from popular voting outcomes at the canton level. We find that, on average, the employment rates of refugees increase slowly over time to reach, ten years after their arrival, a level which is about 15 percentage points lower than the employment rates of comparable natives. However, this integration profile depends on the refugees' age upon arrival: those who were younger at arrival integrate more rapidly into the labor market and attain higher employment rates in the long run. We also consider migrants from non EU-15 countries as a comparison group. According to our estimates, which take differences in origin countries into account, labor market integration takes more time for refugees than for migrants, although the convergence seems slightly more rapid than in other European countries (Fasani et al. 2020a). Ten years after arrival, employment rates of refugees are 4 percentage points lower than those of migrants and this difference persists in the long run. There are some gender differences. Employment rates of male refugees increase initially more rapidly than employment rates for female refugees but native-refugee employment gaps are similar for men and women in the long run.

When we investigate the impact of initial conditions on the employment of refugees over the life-cycle, we find significant negative effects of initial unemployment rates on employment probabilities of refugees, and positive effects of initial (restrictive) attitudes toward refugees and immigrants.[43] Both

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42. These estimation results are available upon request.
43. The results for co-national networks are inconclusive. We do not find a significant effect in the aggregate, but a significant positive effect of networks on the employment of female refugees and a significant negative effect for male refugees.

unemployment and attitudes have long-lasting effects on the employment probability of refugees. The negative effects of initial unemployment are cumulative over time and reach a maximum after more than 15 years, whereas the impact of attitudes is small shortly after arrival, reaches a maximum 3–5 years after arrival, and then decreases over time. Our findings on the role of attitudes differ from Aksoy et al. (2020) and seem to indicate that when natives' attitudes become more restrictive over time, refugees could feel pressured to increase their integration efforts and search more intensively for a job.

Based on our findings that highlight the importance of an early entry into the workforce in order to ensure an effective economic integration of refugees, we acknowledge the significant challenges that persist and discuss some policy recommendations emerging from our study and some broader policy implications. First, shortening the asylum process is important. In this regard, Switzerland, recently carried out a reform of the asylum process, and starting from March 1, 2019 adopted a reduced asylum procedure, which was approved through a referendum in 2016. Under this policy framework, each stage of the process has a well-defined timeline, and the overall examination of the asylum applications is completed at a faster pace, in most cases within 140 days. Moreover, applicants have the right to receive free legal assistance. In addition to this, temporarily admitted refugees and recognized refugees can work in the canton of residency upon a simple declaration. The rationale behind these changes is to improve the overall efficiency of the system, which includes avoiding a waiting time for asylum-seekers of several years, and allowing those entitled to receive protection as soon as possible. The current data availability of the administrative records (i.e., only until 2018) has not yet allowed us to rigorously assess the effectiveness of this reform, which we leave for future research. Second, given the significant variation over time in the way the initial local conditions and other factors affect the pattern of economic integration, we highlight the importance of taking a longer run perspective – and possibly the longitudinal dimension – when examining the effectiveness of policies, given that the effects may vary over time and different complementary interventions may be needed in the short vs. long-run. Moreover, recent developments in artificial intelligence have shown the potential for technology to optimize the resettlement process and potentially improve the within country allocation of refugees based on the characteristics of the labor market and the variation in employment prospects across locations (e.g., Bansak et al. (2018) who develop an algorithm—a combination of supervised machine-learning and optimal matching – to utilize the synergies between asylum seekers and geographical locations). At the same time, these recent technological developments have highlighted the existence of a complex set of ethical, as well as privacy and security issues that would have to be addressed for their use. Third, promoting investment in human capital, for example in terms of language courses, education programs, and vocational training is important. This could have the benefit of fostering integration, avoiding skill depreciation and social marginalization, as well as facilitating the transition into the labor market. Recent research has also shown that the benefits from investing in refugees and their children's education may persist across generations and over time (Becker et al. 2020). Last, encouraging a greater coordination of the asylum policy at the international level remains a pressing issue. That is, considering the adoption at the European level, of a system for the geographic allocation of refugees, sharing responsibility over financial compensation for hosting refugees, and considering the adoption of shared and coordinated asylum procedures (Piguet 2019).

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Tables and Figures

Table 1: Stock of Refugees, Population and Share of Refugees in Total Population for the Top 10 Receiving Countries in Europe, 2019

#	Country of Asylum	Number of Refugees	Country Population	Rank Population	Share of Refugees (%)
1	Sweden	253 787	10 285 453	8	2.47
2	Austria	135 951	8 877 067	9	1.53
3	Germany	1 146 682	83 132 799	1	1.38
4	Switzerland	110 162	8 574 832	10	1.28
5	Greece	80 454	10 716 322	7	0.75
6	France	407 915	67 059 887	2	0.61
7	Netherlands	94 417	17 332 850	5	0.54
8	Belgium	61 662	11 484 055	6	0.54
9	Italy	207 602	60 297 396	4	0.34
10	United Kingdom	133 083	66 834 405	3	0.20

Note: World Bank data on population and refugees: 1960 – 2019. Data refer to the total stock of refugees on the territory of the country of asylum in 2019. Share refers to the share of total number of refugees in total population. These countries are top ten countries in Europe in both the total population and the total number of refugees. Share's calculations done by the Author.

Table 2: Descriptive statistics

	Main sample			Restricted sample (matched with Structural Survey)		
	Refugees	Migrants	Natives	Refugees	Migrants	Natives
Cohort size	111382	701371	1293071	12379	93150	390071
Observations in sample	711056	4473204	1839523	135655	997217	557302
period 2010–2018	562221	3355287	1839523	99367	703832	557302
Characteristics						
Female	0.402	0.583	0.493	0.436	0.612	0.506
Married	0.499	0.716	0.458	0.592	0.775	0.478
Age	35.24	35.51	41.32	37.47	36.46	41.93
	(9.796)	(9.218)	(13.55)	(9.270)	(8.934)	(13.33)
Age at arrival	29.17	30.27		29.58	30.17	
	(8.285)	(8.499)		(7.915)	(8.128)	
Length of stay	10.78	10.25		13.73	12.31	
	(6.115)	(5.698)		(4.816)	(4.661)	
Labour market outcomes						
Employment rate	0.432	0.687	0.853	0.564	0.726	0.860
Earnings	25543.6	57380.2	67456.1	28597.5	61070.4	69792.6
	(23739.6)	(122044.1)	(74814.9)	(24837.6)	(130137.1)	(77559.5)
Education						
Secondary I				0.633	0.338	0.131
Secondary II				0.219	0.268	0.548
Tertiary				0.148	0.393	0.321

Table 3: Natives and Refugees: Employment Gaps

| | Main sample | | | | Restricted sample | |
	(1)	(2)	(3)	(4)	(5)	(6)
Years since migration						
Refugee X 0 years	-0.897***	-0.891***	-0.822***	-0.812***	-0.822***	-0.780***
	(0.000571)	(0.000599)	(0.00792)	(0.00936)	(0.0210)	(0.0210)
Refugee X 1-2 years	-0.792***	-0.783***	-0.727***	-0.717***	-0.699***	-0.656***
	(0.00116)	(0.00117)	(0.00787)	(0.00932)	(0.0207)	(0.0207)
Refugee X 3-4 years	-0.554***	-0.553***	-0.521***	-0.511***	-0.481***	-0.437***
	(0.00196)	(0.00196)	(0.00776)	(0.00923)	(0.0204)	(0.0204)
Refugee X 5-6 years	-0.366***	-0.364***	-0.360***	-0.351***	-0.332***	-0.288***
	(0.00256)	(0.00255)	(0.00759)	(0.00908)	(0.0200)	(0.0200)
Refugee X 7-8 years	-0.271***	-0.263***	-0.283***	-0.275***	-0.259***	-0.214***
	(0.00265)	(0.00265)	(0.00736)	(0.00888)	(0.0196)	(0.0196)
Refugee X 9-10 years	-0.216***	-0.218***	-0.250***	-0.244***	-0.227***	-0.183***
	(0.00261)	(0.00262)	(0.00710)	(0.00867)	(0.0192)	(0.0192)
Refugee X 11-12 years	-0.206***	-0.211***	-0.231***	-0.226***	-0.212***	-0.168***
	(0.00275)	(0.00274)	(0.00676)	(0.00838)	(0.0188)	(0.0188)
Refugee X 13-14 years	-0.201***	-0.197***	-0.212***	-0.208***	-0.198***	-0.155***
	(0.00303)	(0.00304)	(0.00664)	(0.00828)	(0.0186)	(0.0186)
Refugee X 15-16 years	-0.193***	-0.180***	-0.197***	-0.195***	-0.193***	-0.150***
	(0.00334)	(0.00337)	(0.00669)	(0.00833)	(0.0186)	(0.0186)
Refugee X 17-18 years	-0.195***	-0.173***	-0.182***	-0.182***	-0.183***	-0.142***
	(0.00416)	(0.00422)	(0.00679)	(0.00842)	(0.0188)	(0.0188)
Refugee X 19-20 years	-0.179***	-0.180***	-0.188***	-0.190***	-0.195***	-0.156***
	(0.00568)	(0.00579)	(0.00715)	(0.00870)	(0.0191)	(0.0191)
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	No	Yes	Yes	Yes	Yes
Age at arrival FE	No	No	No	Yes	Yes	Yes
Education FE	No	No	No	No	No	Yes
Observations	2402182	2402182	2402182	2402182	652967	652967

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years),

Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: The Impact of Initial Conditions on Employment of Refugees: Baseline Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0245***	-0.0239**					-0.0205***	-0.0224**
	(0.00677)	(0.0103)					(0.00685)	(0.0104)
Network			0.00108	0.000174			0.00164	0.000782
			(0.00268)	(0.00513)			(0.00265)	(0.00509)
Attitudes					0.0294***	0.0225***	0.0278***	0.0213***
					(0.00645)	(0.00843)	(0.00623)	(0.00811)
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	Yes	No	Yes	No	Yes	No	Yes
Sample	Main	Restricted	Main	Restricted	Main	Restricted	Main	Restricted
Observations	696135	127737	696135	127737	696135	127737	696135	127737

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Standard errors are clustered at the level of Canton of arrival × Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: The Impact of Initial Conditions on Employment of Refugees by Years Since Migration

	Main sample			Restricted sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Variable × Years since migration						
Attitudes X 0-2 years	0.00802	0.0143***	0.0117**	0.00689	0.0162*	0.0122
	(0.00565)	(0.00544)	(0.00533)	(0.00943)	(0.00944)	(0.00948)
Attitudes X 3-5 years	0.0422***	0.0374***	0.0347***	0.0375***	0.0389***	0.0360***
	(0.00537)	(0.00554)	(0.00531)	(0.00911)	(0.00936)	(0.00924)
Attitudes X 6-10 years	0.0378***	0.0317***	0.0306***	0.0227***	0.0176**	0.0159*
	(0.00513)	(0.00527)	(0.00516)	(0.00830)	(0.00852)	(0.00840)
Attitudes X 11-15 years	0.0287***	0.0232***	0.0218***	0.0205**	0.0162*	0.0145*
	(0.00542)	(0.00572)	(0.00548)	(0.00849)	(0.00874)	(0.00850)
Attitudes X 15+ years	0.0316***	0.0194***	0.0175***	0.0129	0.00664	0.00438
	(0.00599)	(0.00629)	(0.00603)	(0.0108)	(0.0105)	(0.0104)
Unemployment X 0-2 years		-0.0121*	-0.0134**		-0.00926	-0.0113
		(0.00656)	(0.00642)		(0.0107)	(0.0105)
Unemployment X 3-5 years		-0.0262***	-0.0268***		-0.0195*	-0.0205*
		(0.00629)	(0.00609)		(0.0109)	(0.0108)
Unemployment X 6-10 years		-0.0276***	-0.0287***		-0.0276***	-0.0288***
		(0.00606)	(0.00588)		(0.0104)	(0.0102)
Unemployment X 11-15 years		-0.0268***	-0.0279***		-0.0270**	-0.0280**
		(0.00609)	(0.00594)		(0.0115)	(0.0113)
Unemployment X 15+ years		-0.0349***	-0.0362***		-0.0293**	-0.0309**
		(0.00670)	(0.00664)		(0.0125)	(0.0127)
Network X 0-2 years			-0.00211			-0.00727
			(0.00265)			(0.00572)
Network X 3-5 years			-0.00781**			-0.00704
			(0.00312)			(0.00571)
Network X 6-10 years			0.00546**			0.00350
			(0.00271)			(0.00515)
Network X 11-15 years			0.00457			0.00709
			(0.00279)			(0.00532)
Network X 15+ years			0.00368			0.00365
			(0.00348)			(0.00617)
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes
Years since migration FE	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	No	No	Yes	Yes	Yes
Observations	696135	696135	696135	127737	127737	127737

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1).

All regressions also include age, age squared, gender, marital status.

Specifications (1) and (4) also include the variables Unemployment and Network, (2) and (5) also include Network.

Standard errors are clustered at the level Canton of arrival × Year of arrival.

* p < 0.10, ** p < 0.05, *** p < 0.01

Table 6: The Impact of Initial Conditions on Employment of Refugees: Language Regions

	Main sample			Restricted sample		
	(1)	(2)	(3)	(4)	(5)	(6)
Attitudes X German	0.0221***	0.0185**	0.0169**	0.0236*	0.0228*	0.0235*
	(0.00737)	(0.00884)	(0.00855)	(0.0129)	(0.0127)	(0.0126)
Attitudes X French	0.0341***	0.0372***	0.0343***	0.0160	0.0179	0.0193
	(0.0101)	(0.0112)	(0.0109)	(0.0152)	(0.0137)	(0.0147)
Attitudes X Italian	0.0406***	0.0340**	0.0298**	0.0282*	0.0270	0.0191
	(0.0121)	(0.0135)	(0.0133)	(0.0165)	(0.0164)	(0.0162)
Unemployment X German		-0.0182**	-0.0193***		-0.0135	-0.0122
		(0.00746)	(0.00739)		(0.0115)	(0.0118)
Unemployment X French		-0.0214***	-0.0226***		-0.0219**	-0.0209*
		(0.00740)	(0.00715)		(0.0108)	(0.0113)
Unemployment X Italian		-0.0212***	-0.0189**		-0.0248*	-0.0181
		(0.00818)	(0.00883)		(0.0147)	(0.0119)
Network X German			0.000750			0.00115
			(0.00267)			(0.00530)
Network X French			0.00571			-0.00159
			(0.00418)			(0.00720)
Network X Italian			0.0144**			0.0219**
			(0.00635)			(0.00961)
Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes
Years since migration FE	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	No	No	Yes	Yes	Yes
Observations	696135	696135	696135	127737	127737	127737

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1).

All regressions also include age, age squared, gender, marital status.

Standard errors are clustered at the level Canton of arrival $\times$ Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Total Number of Refugees[44] in Switzerland, 1960–2019
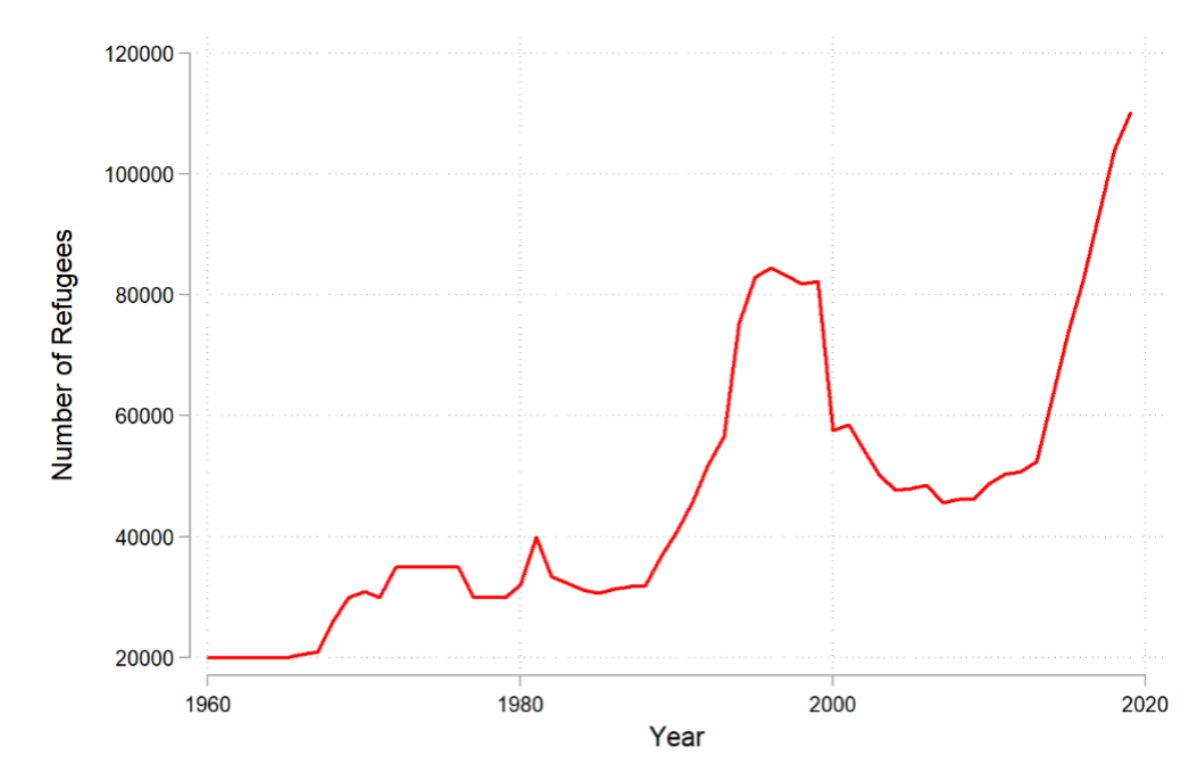
Note: World Bank data on refugees: 1960 – 2019. The graph reports the total number of refugees on the Swiss territory in each year.

44. World Bank's definition of the number of refugees reported in this graph: Refugees are people who are recognized as refugees under the 1951 Convention Relating to the Status of Refugees or its 1967 Protocol, the 1969 Organization of African Unity Convention Governing the Specific Aspects of Refugee Problems in Africa, people recognized as refugees in accordance with the UNHCR statute, people granted refugee-like humanitarian status, and people provided temporary protection. Asylum seekers—people who have applied for asylum or refugee status and who have not yet received a decision or who are registered as asylum seekers—are excluded. Palestinian refugees are people (and their descendants) whose residence was Palestine between June 1946 and May 1948 and who lost their homes and means of livelihood as a result of the 1948 Arab – Israeli conflict. Country of asylum is the country where an asylum claim was filed and granted.

Figure 2: Share of Refugees in Total Population for the Top 10 Receiving Countries in Europe, 1960–2019
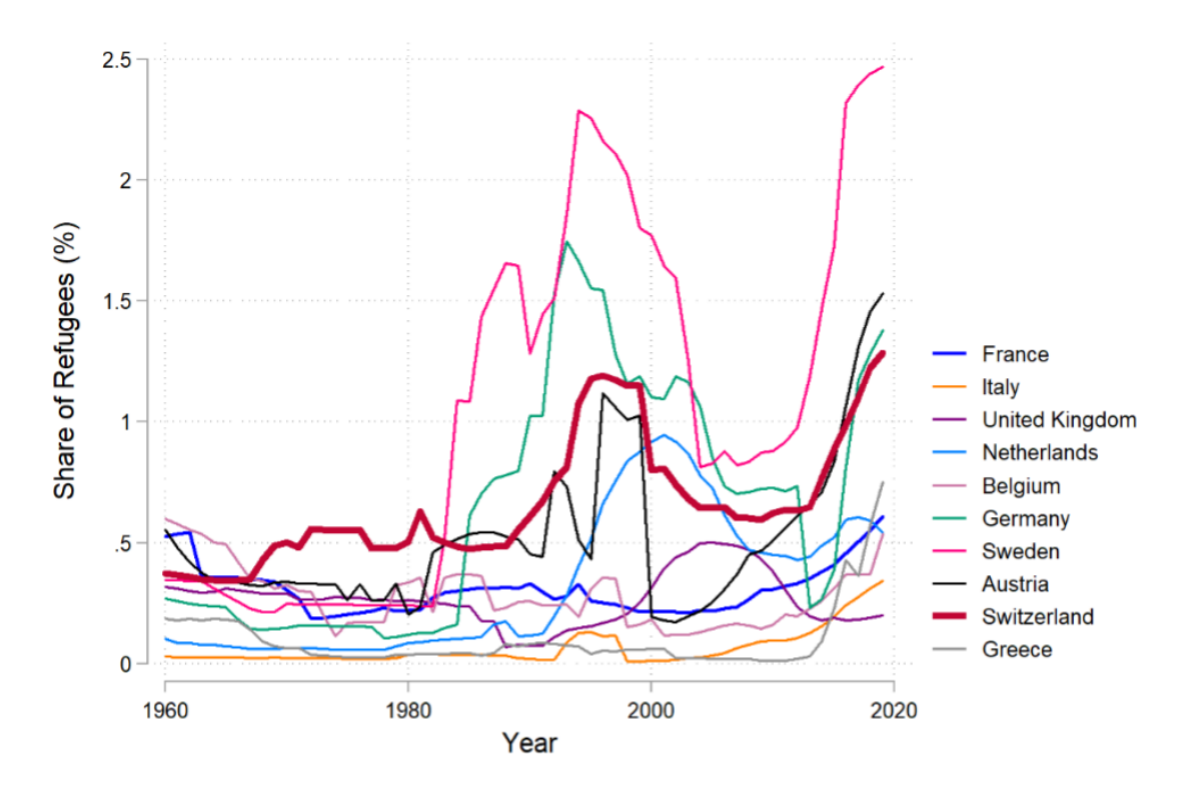
Figure 3: Number of refugees arriving from 10 most frequent origin countries
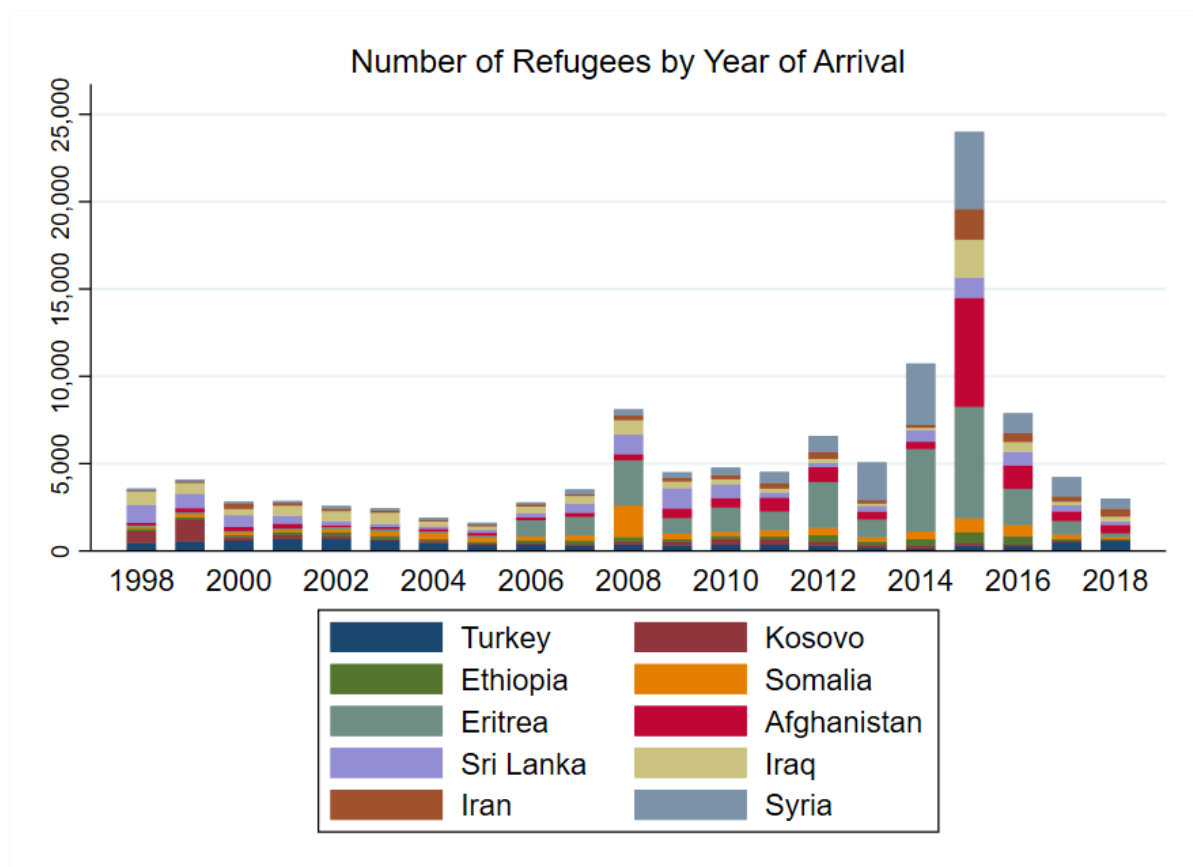
Figure 4: Attitudes toward restricting migration and asylum: standardized vote outcomes (black) and filled-in data (red), by canton 1998–2018
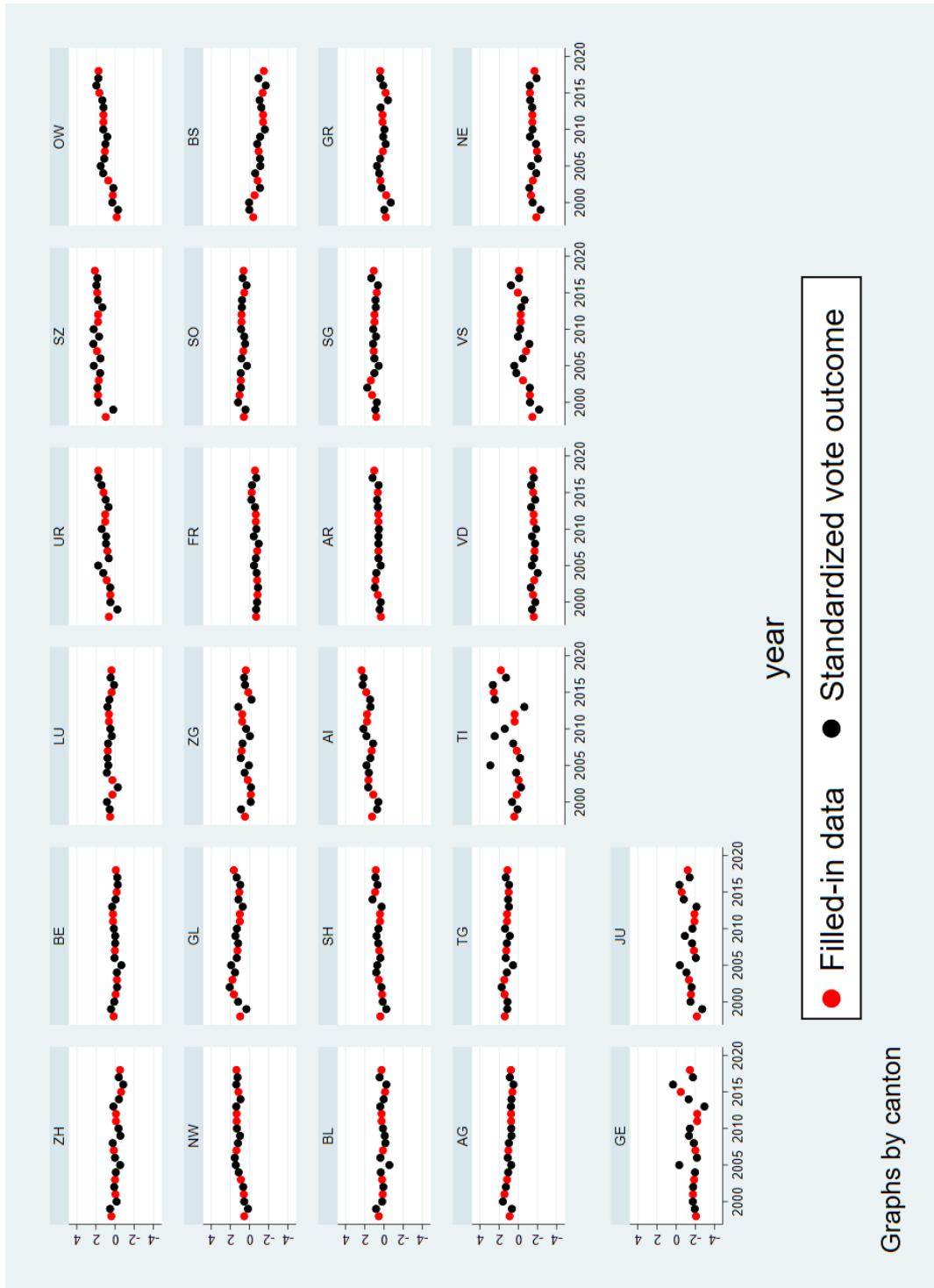
Figure 5: Attitudes toward migration and asylum: initial attitudes vs. change over time (by canton)
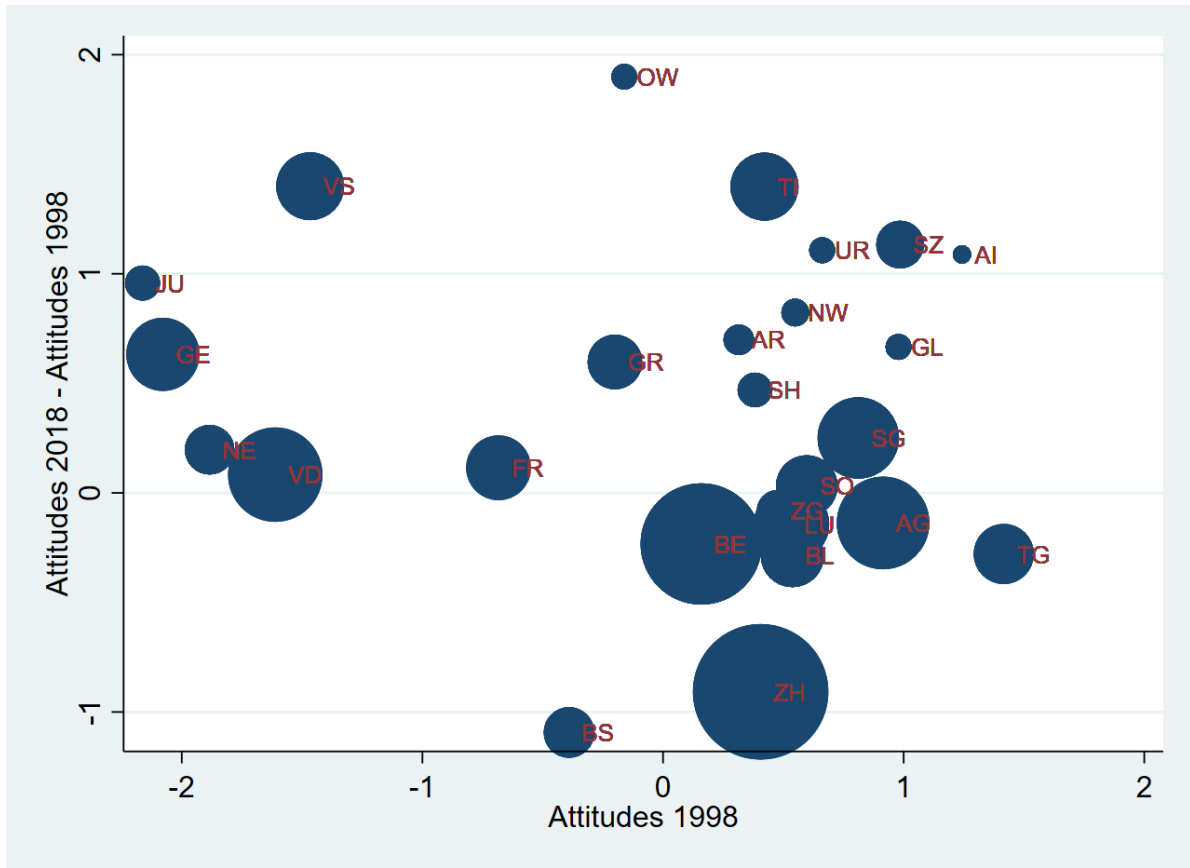
Figure 6: Employment gaps between refugees and natives by arrival cohort and years since arrival
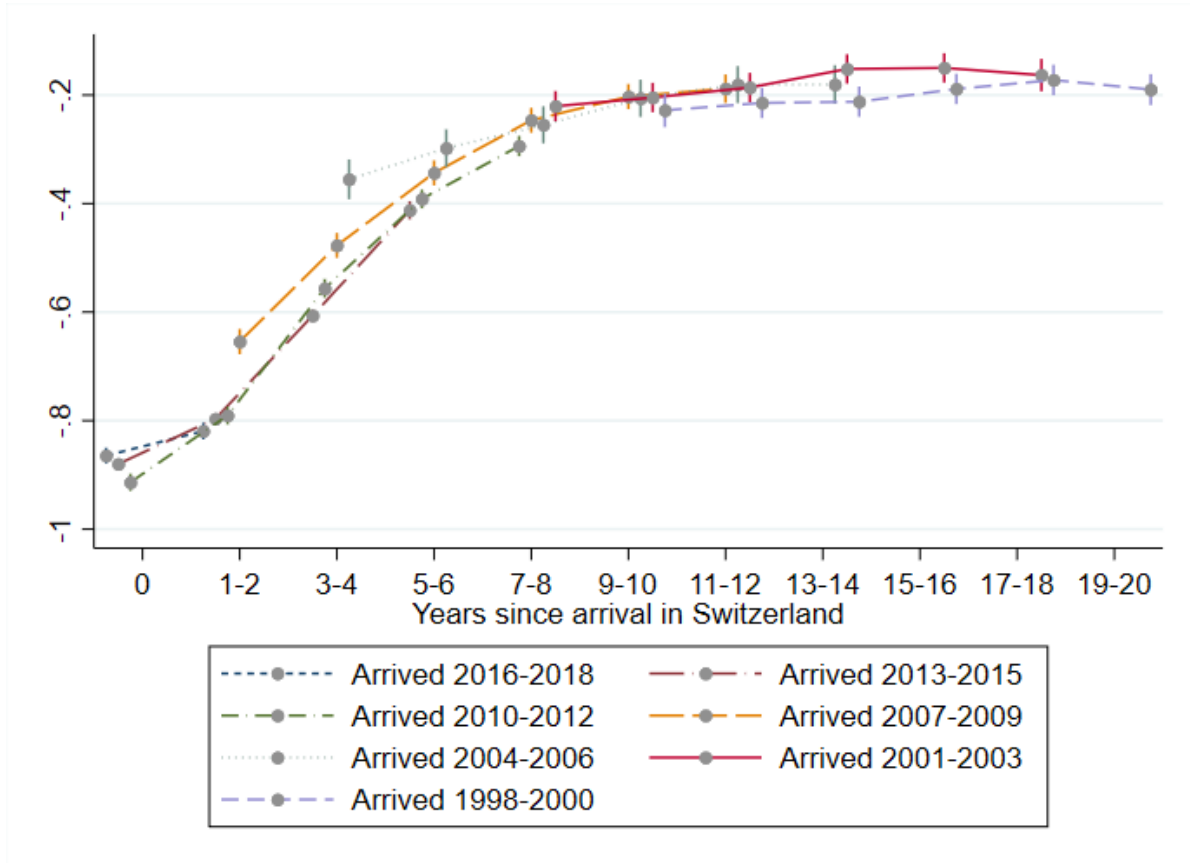
Figure 7: Employment gaps between refugees and natives by age at arrival and years since arrival (with education dummies, restricted sample)
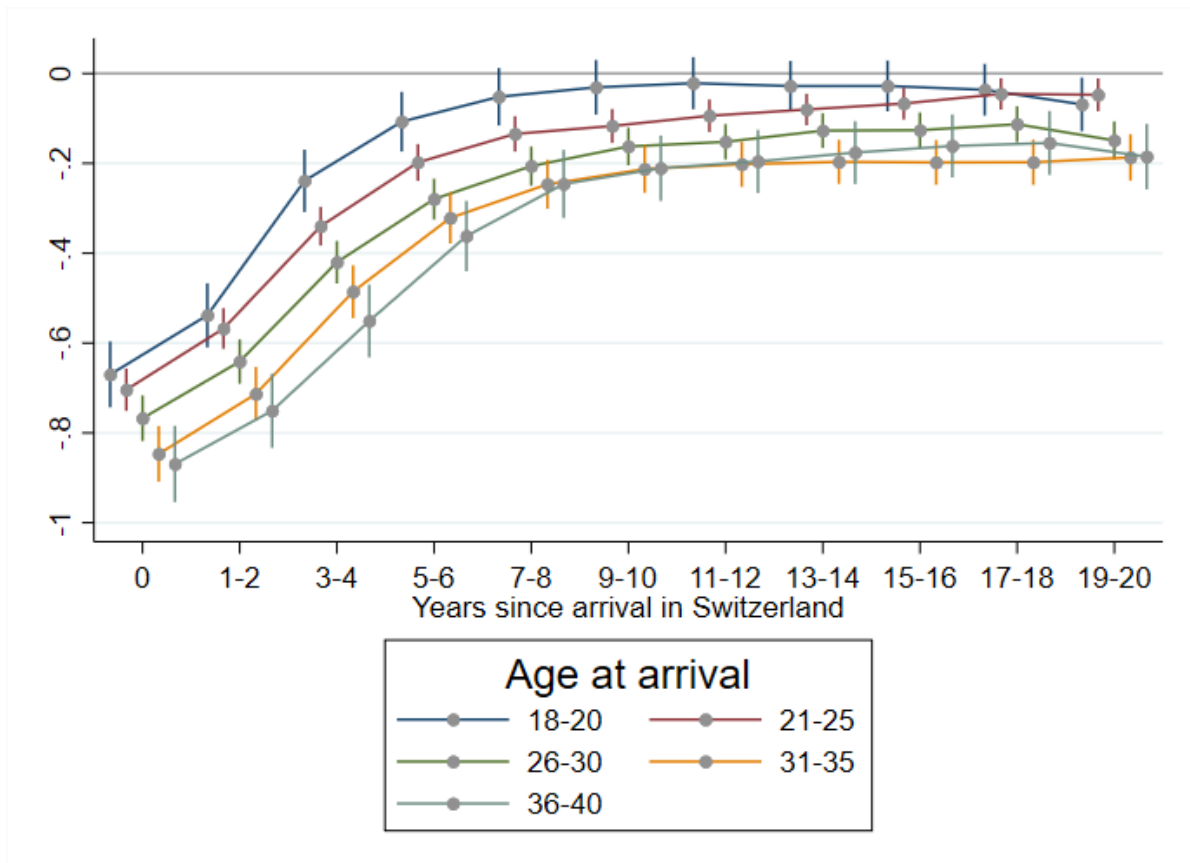
Figure 8: Employment gaps between refugees and non-EU15 migrants, by years since arrival
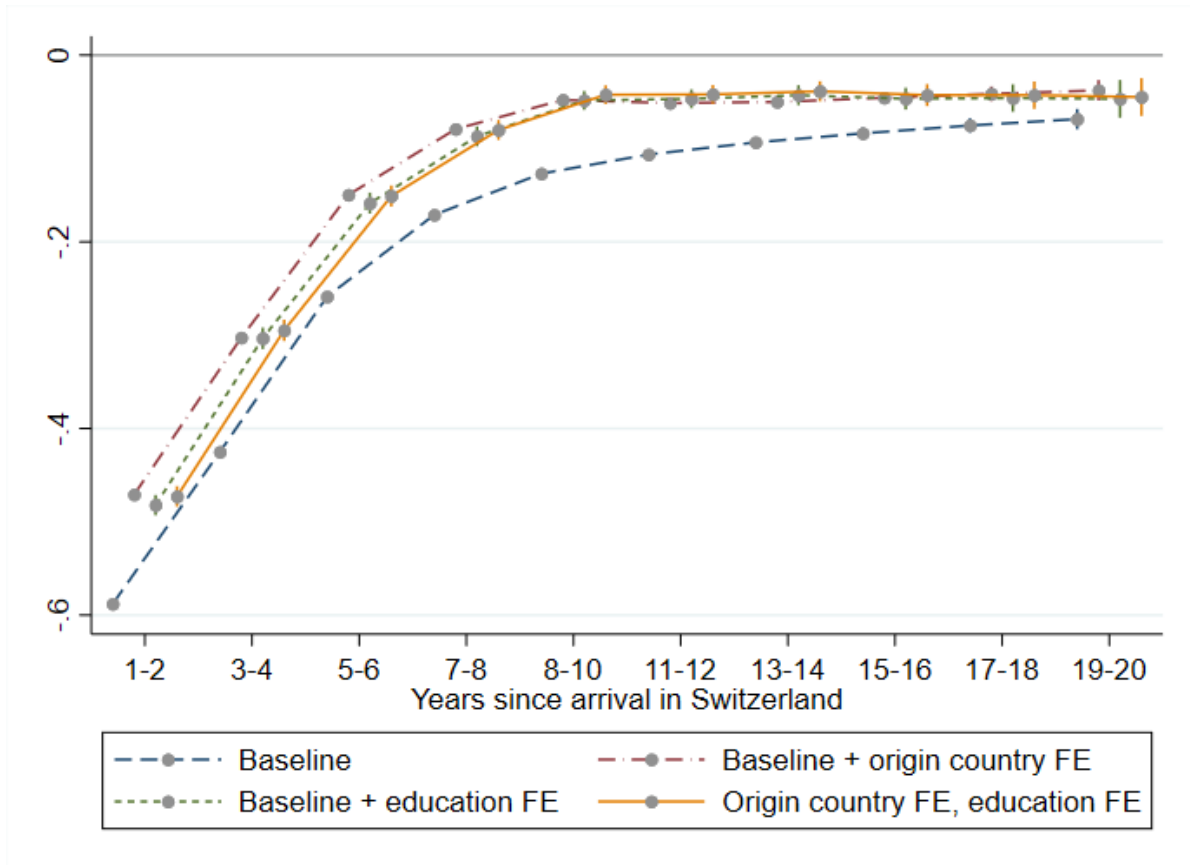
Figure 9: Employment gaps between natives and refugees, by gender and years since arrival
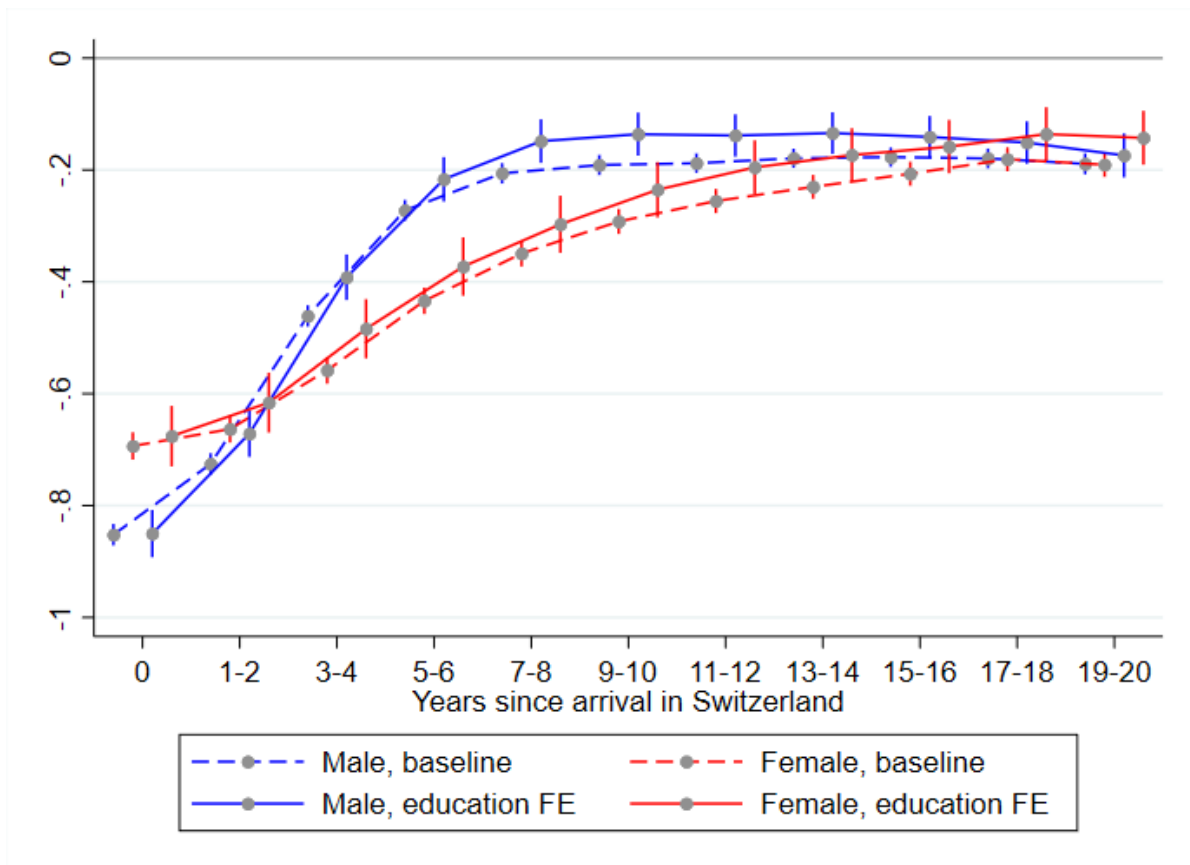
Figure 10: Earnings gaps between natives and refugees, by gender and years since arrival
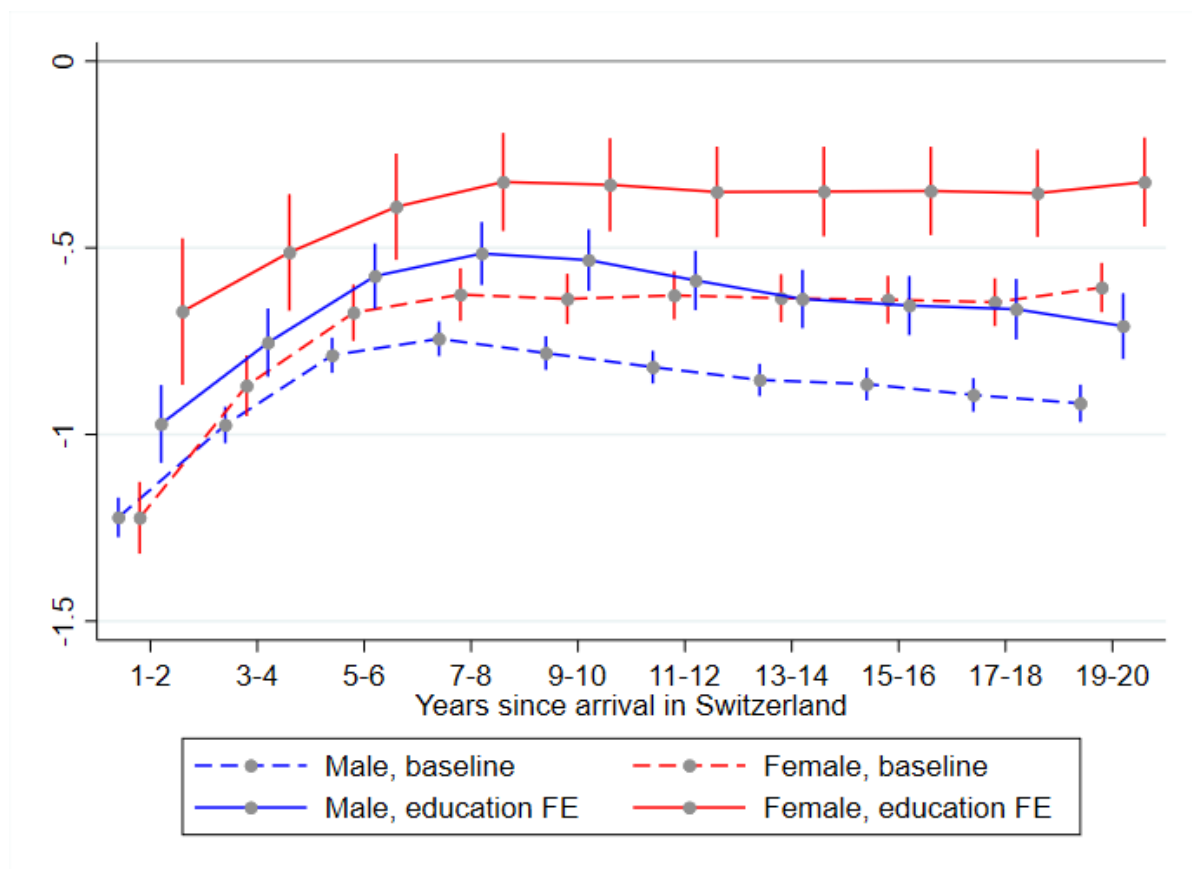
A   Appendix: Additional Tables and Figures

Table A.1: Popular votes on migration and asylum in Switzerland, 1996–2020

No.	Date	Label	Type	Orientation	Outcome	Approval	Turnout
432	01.12.1996	Against illegal immigration	PI	Restrictive	Failed	46.3%	46.8%
454	13.06.1999	Federal law on asylum	OR	Restrictive	Passed	70.6%	45.6%
455	13.06.1999	Federal law on emergency measures on asylum and foreigners law	OR	Restrictive	Passed	70.8%	45.6%
467	24.09.2000	For regulating immigration	PI	Restrictive	Failed	36.2%	45.3%
491	24.11.2002	Against abuses in asylum law	PI	Restrictive	Failed	49.9%	48.1%
510	26.09.2004	Federal bill on ordinary and facilitated naturalization (2nd generation)	MR	Expansive	Failed	43.2%	53.8%
511	26.09.2004	Federal bill on ordinary and facilitated naturalization (3rd generation)	MR	Expansive	Failed	48.4%	53.8%
519	25.09.2005	Extension of free mobility to new EU member states (EU-10)	OR	Expansive	Passed	56.0%	54.5%
524	24.09.2006	Federal law on foreigners	OR	Restrictive	Passed	67.8%	48.9%
525	24.09.2006	Federal law on asylum	OR	Restrictive	Passed	68.0%	48.9%
532	01.06.2008	For democratic naturalization	PI	Restrictive	Failed	36.2%	45.2%
540	08.02.2009	Renewal of the EU-Switzerland bilateral agreement on free mobility	MR	Expansive	Passed	59.6%	51.4%
547	29.11.2009	Against the construction of minarets	PI	Restrictive	Passed	57.2%	53.8%
552	28.11.2010	For the deportation of foreign criminals	PI	Restrictive	Passed	52.9%	52.9%
571	09.06.2013	Urgent modification of asylum law	OR	Restrictive	Passed	78.4%	39.4%
580	09.02.2014	Against mass immigration	PI	Restrictive	Passed	50.3%	56.6%
588	30.11.2014	Stop overpopulation (ECOPOP)	PI	Restrictive	Failed	25.9%	50.0%
597	28.02.2016	For the actual deportation of foreign criminals	PI	Restrictive	Failed	41.0%	63.7%
604	05.06.2016	Federal law on asylum	OR	Expansive	Passed	78.4%	46.8%
609	12.02.2017	On the facilitated naturalization of third generation foreign youth	OR	Expansive	Passed	60.1%	46.8%
631	27.09.2020	For moderate immigration (Limitation Initiative)	PI	Restrictive	Failed	38.3%	59.5%

This table lists all popular votes on the issues of migration and asylum in Switzerland between 1996 and 2020.

The list follows Zimmermann and Stutzer (2021), adding the vote No. 631 to their list.

Types of popular votes are: mandatory referendum (MR), optional referendum (OR) and popular initiative (PI)

Table A.2: Natives and Refugees: Employment Gaps by Education Level

Sample (education levels)	All levels	Second. I	Second. II	Tertiary
Years since migration				
Refugee X 0 years	-0.780***	-0.693***	-0.858***	-0.891***
	(0.0210)	(0.0285)	(0.0428)	(0.0529)
Refugee X 1-2 years	-0.656***	-0.588***	-0.710***	-0.730***
	(0.0207)	(0.0279)	(0.0418)	(0.0520)
Refugee X 3-4 years	-0.437***	-0.385***	-0.448***	-0.515***
	(0.0204)	(0.0273)	(0.0408)	(0.0506)
Refugee X 5-6 years	-0.288***	-0.241***	-0.305***	-0.349***
	(0.0200)	(0.0266)	(0.0400)	(0.0489)
Refugee X 7-8 years	-0.214***	-0.179***	-0.236***	-0.248***
	(0.0196)	(0.0260)	(0.0391)	(0.0474)
Refugee X 9-10 years	-0.183***	-0.152***	-0.206***	-0.207***
	(0.0192)	(0.0254)	(0.0382)	(0.0464)
Refugee X 11-12 years	-0.168***	-0.145***	-0.181***	-0.189***
	(0.0188)	(0.0247)	(0.0376)	(0.0454)
Refugee X 13-14 years	-0.155***	-0.130***	-0.175***	-0.175***
	(0.0186)	(0.0244)	(0.0370)	(0.0451)
Refugee X 15-16 years	-0.150***	-0.129***	-0.181***	-0.165***
	(0.0186)	(0.0244)	(0.0372)	(0.0452)
Refugee X 17-18 years	-0.142***	-0.126***	-0.173***	-0.158***
	(0.0188)	(0.0246)	(0.0378)	(0.0453)
Refugee X 19-20 years	-0.156***	-0.147***	-0.173***	-0.162***
	(0.0191)	(0.0251)	(0.0385)	(0.0456)
Current year FE	Yes	Yes	Yes	Yes
Year of arrival FE	Yes	Yes	Yes	Yes
Age at arrival FE	Yes	Yes	Yes	Yes
Education FE	Yes	.	.	.
Observations	652967	133615	327228	192124

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998),

Age at arrival FE (27 years)

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: Natives and Migrants: Employment Gaps

| | Main sample | | | | Restricted sample | |
	(1)	(2)	(3)	(4)	(5)	(6)
Years since migration						
Migrant X 0 years	-0.388***	-0.388***	-0.446***	-0.427***	-0.398***	-0.380***
	(0.000836)	(0.000835)	(0.00429)	(0.00472)	(0.00931)	(0.00929)
Migrant X 1-2 years	-0.215***	-0.214***	-0.270***	-0.251***	-0.210***	-0.191***
	(0.000821)	(0.000819)	(0.00420)	(0.00464)	(0.00901)	(0.00899)
Migrant X 3-4 years	-0.151***	-0.150***	-0.199***	-0.182***	-0.151***	-0.131***
	(0.000872)	(0.000873)	(0.00412)	(0.00457)	(0.00886)	(0.00884)
Migrant X 5-6 years	-0.129***	-0.128***	-0.170***	-0.154***	-0.133***	-0.112***
	(0.000928)	(0.000931)	(0.00405)	(0.00451)	(0.00875)	(0.00873)
Migrant X 7-8 years	-0.118***	-0.117***	-0.154***	-0.138***	-0.122***	-0.102***
	(0.000986)	(0.000991)	(0.00397)	(0.00445)	(0.00865)	(0.00863)
Migrant X 9-10 years	-0.111***	-0.110***	-0.148***	-0.133***	-0.119***	-0.0980***
	(0.00104)	(0.00105)	(0.00390)	(0.00438)	(0.00854)	(0.00852)
Migrant X 11-12 years	-0.108***	-0.108***	-0.139***	-0.123***	-0.113***	-0.0922***
	(0.00112)	(0.00113)	(0.00381)	(0.00431)	(0.00841)	(0.00839)
Migrant X 13-14 years	-0.111***	-0.108***	-0.130***	-0.114***	-0.107***	-0.0873***
	(0.00130)	(0.00133)	(0.00377)	(0.00427)	(0.00835)	(0.00833)
Migrant X 15-16 years	-0.111***	-0.105***	-0.120***	-0.105***	-0.0993***	-0.0797***
	(0.00156)	(0.00162)	(0.00378)	(0.00429)	(0.00836)	(0.00833)
Migrant X 17-18 years	-0.113***	-0.108***	-0.114***	-0.0986***	-0.0965***	-0.0776***
	(0.00208)	(0.00216)	(0.00387)	(0.00437)	(0.00848)	(0.00845)
Migrant X 19-20 years	-0.108***	-0.121***	-0.115***	-0.0986***	-0.0982***	-0.0801***
	(0.00326)	(0.00336)	(0.00410)	(0.00457)	(0.00888)	(0.00885)
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	No	Yes	Yes	Yes	Yes
Age at arrival FE	No	No	No	Yes	Yes	Yes
Education FE	No	No	No	No	No	Yes
Observations	5195248	5195248	5195248	5195248	1253180	1253180

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years),

Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.4: Migrants and Refugees: Employment Gaps

	Main sample		Restricted sample	
	(1)	(2)	(3)	(4)
Years since migration				
Refugee X 0 years	-0.519***	-0.412***	-0.431***	-0.421***
	(0.00101)	(0.00177)	(0.00629)	(0.00631)
Refugee X 1-2 years	-0.588***	-0.471***	-0.482***	-0.473***
	(0.00141)	(0.00221)	(0.00662)	(0.00663)
Refugee X 3-4 years	-0.425***	-0.303***	-0.303***	-0.295***
	(0.00207)	(0.00266)	(0.00698)	(0.00698)
Refugee X 5-6 years	-0.259***	-0.150***	-0.159***	-0.151***
	(0.00261)	(0.00302)	(0.00685)	(0.00686)
Refugee X 7-8 years	-0.171***	-0.0793***	-0.0870***	-0.0802***
	(0.00273)	(0.00307)	(0.00648)	(0.00648)
Refugee X 9-10 years	-0.127***	-0.0480***	-0.0486***	-0.0424***
	(0.00274)	(0.00303)	(0.00613)	(0.00612)
Refugee X 11-12 years	-0.106***	-0.0514***	-0.0468***	-0.0421***
	(0.00293)	(0.00314)	(0.00609)	(0.00608)
Refugee X 13-14 years	-0.0934***	-0.0501***	-0.0429***	-0.0387***
	(0.00328)	(0.00344)	(0.00654)	(0.00653)
Refugee X 15-16 years	-0.0839***	-0.0457***	-0.0467***	-0.0428***
	(0.00368)	(0.00380)	(0.00716)	(0.00715)
Refugee X 17-18 years	-0.0753***	-0.0414***	-0.0460***	-0.0428***
	(0.00468)	(0.00474)	(0.00892)	(0.00891)
Refugee X 19-20 years	-0.0685***	-0.0377***	-0.0469***	-0.0449***
	(0.00661)	(0.00661)	(0.0123)	(0.0123)
Current year FE	Yes	Yes	Yes	Yes
Year of arrival FE	Yes	Yes	Yes	Yes
Origin country FE	No	Yes	No	Yes
Education FE	No	No	Yes	Yes
Observations	3917904	3917900	793496	793496

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998),

Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: Female Natives and Refugees: Employment Gaps

| | Main sample | | | | Restricted sample | |
	(1)	(2)	(3)	(4)	(5)	(6)
Years since migration						
Refugee X 0 years	-0.849***	-0.845***	-0.685***	-0.694***	-0.728***	-0.676***
	(0.000851)	(0.000891)	(0.0122)	(0.0148)	(0.0331)	(0.0329)
Refugee X 1-2 years	-0.811***	-0.806***	-0.655***	-0.663***	-0.669***	-0.616***
	(0.00146)	(0.00148)	(0.0122)	(0.0147)	(0.0327)	(0.0325)
Refugee X 3-4 years	-0.691***	-0.690***	-0.551***	-0.558***	-0.538***	-0.484***
	(0.00278)	(0.00278)	(0.0120)	(0.0146)	(0.0324)	(0.0322)
Refugee X 5-6 years	-0.546***	-0.545***	-0.427***	-0.434***	-0.427***	-0.373***
	(0.00408)	(0.00407)	(0.0117)	(0.0144)	(0.0319)	(0.0317)
Refugee X 7-8 years	-0.427***	-0.424***	-0.343***	-0.349***	-0.352***	-0.297***
	(0.00472)	(0.00471)	(0.0113)	(0.0140)	(0.0312)	(0.0310)
Refugee X 9-10 years	-0.331***	-0.334***	-0.286***	-0.292***	-0.290***	-0.235***
	(0.00478)	(0.00478)	(0.0107)	(0.0136)	(0.0303)	(0.0301)
Refugee X 11-12 years	-0.263***	-0.267***	-0.249***	-0.256***	-0.250***	-0.195***
	(0.00448)	(0.00446)	(0.0101)	(0.0131)	(0.0294)	(0.0293)
Refugee X 13-14 years	-0.233***	-0.231***	-0.223***	-0.230***	-0.227***	-0.173***
	(0.00470)	(0.00471)	(0.00992)	(0.0130)	(0.0292)	(0.0290)
Refugee X 15-16 years	-0.212***	-0.204***	-0.199***	-0.207***	-0.211***	-0.158***
	(0.00506)	(0.00511)	(0.00995)	(0.0130)	(0.0292)	(0.0290)
Refugee X 17-18 years	-0.192***	-0.176***	-0.173***	-0.181***	-0.186***	-0.136***
	(0.00602)	(0.00613)	(0.00999)	(0.0130)	(0.0293)	(0.0291)
Refugee X 19-20 years	-0.168***	-0.179***	-0.182***	-0.191***	-0.191***	-0.143***
	(0.00797)	(0.00815)	(0.0103)	(0.0132)	(0.0295)	(0.0293)
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	No	Yes	Yes	Yes	Yes
Age at arrival FE	No	No	No	Yes	Yes	Yes
Education FE	No	No	No	No	No	Yes
Observations	1122075	1122075	1122075	1122075	322519	322519

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years), Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: Male Natives and Refugees: Employment Gaps

	Main sample				Restricted sample	
	(1)	(2)	(3)	(4)	(5)	(6)
Years since migration						
Refugee X 0 years	-0.900***	-0.895***	-0.887***	-0.852***	-0.873***	-0.850***
	(0.000719)	(0.000758)	(0.0102)	(0.0117)	(0.0255)	(0.0257)
Refugee X 1-2 years	-0.768***	-0.756***	-0.761***	-0.726***	-0.695***	-0.671***
	(0.00163)	(0.00164)	(0.0102)	(0.0117)	(0.0252)	(0.0254)
Refugee X 3-4 years	-0.464***	-0.464***	-0.495***	-0.461***	-0.416***	-0.392***
	(0.00258)	(0.00258)	(0.0100)	(0.0115)	(0.0247)	(0.0248)
Refugee X 5-6 years	-0.244***	-0.241***	-0.304***	-0.272***	-0.242***	-0.217***
	(0.00308)	(0.00307)	(0.00983)	(0.0113)	(0.0241)	(0.0243)
Refugee X 7-8 years	-0.170***	-0.159***	-0.235***	-0.206***	-0.174***	-0.149***
	(0.00300)	(0.00301)	(0.00957)	(0.0111)	(0.0236)	(0.0237)
Refugee X 9-10 years	-0.140***	-0.139***	-0.218***	-0.191***	-0.162***	-0.136***
	(0.00294)	(0.00296)	(0.00931)	(0.0109)	(0.0232)	(0.0233)
Refugee X 11-12 years	-0.158***	-0.163***	-0.213***	-0.188***	-0.164***	-0.138***
	(0.00336)	(0.00336)	(0.00893)	(0.0105)	(0.0228)	(0.0229)
Refugee X 13-14 years	-0.174***	-0.168***	-0.202***	-0.179***	-0.159***	-0.134***
	(0.00387)	(0.00389)	(0.00876)	(0.0104)	(0.0224)	(0.0226)
Refugee X 15-16 years	-0.180***	-0.162***	-0.197***	-0.177***	-0.165***	-0.141***
	(0.00436)	(0.00441)	(0.00887)	(0.0105)	(0.0225)	(0.0227)
Refugee X 17-18 years	-0.203***	-0.176***	-0.196***	-0.179***	-0.174***	-0.151***
	(0.00569)	(0.00576)	(0.00913)	(0.0107)	(0.0229)	(0.0230)
Refugee X 19-20 years	-0.197***	-0.192***	-0.203***	-0.189***	-0.196***	-0.174***
	(0.00806)	(0.00819)	(0.00988)	(0.0114)	(0.0238)	(0.0239)
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	No	Yes	Yes	Yes	Yes
Age at arrival FE	No	No	No	Yes	Yes	Yes
Education FE	No	No	No	No	No	Yes
Observations	1280107	1280107	1280107	1280107	330490	330490

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years),

Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: Female Natives and Refugees: Earnings Gaps

	(1)	(2)	(3)	(4)	(5)	(6)
Years since migration						
Refugee X 0 years	-2.569***	-2.563***	-1.943***	-1.904***	-1.777***	-1.488***
	(0.171)	(0.171)	(0.178)	(0.181)	(0.401)	(0.402)
Refugee X 1-2 years	-1.846***	-1.843***	-1.208***	-1.223***	-0.904***	-0.671***
	(0.0347)	(0.0348)	(0.0502)	(0.0584)	(0.120)	(0.119)
Refugee X 3-4 years	-1.407***	-1.410***	-0.842***	-0.869***	-0.750***	-0.512***
	(0.0204)	(0.0204)	(0.0388)	(0.0495)	(0.0945)	(0.0948)
Refugee X 5-6 years	-1.070***	-1.073***	-0.656***	-0.674***	-0.634***	-0.390***
	(0.0175)	(0.0175)	(0.0343)	(0.0459)	(0.0861)	(0.0867)
Refugee X 7-8 years	-0.869***	-0.869***	-0.608***	-0.625***	-0.573***	-0.324***
	(0.0158)	(0.0158)	(0.0303)	(0.0432)	(0.0792)	(0.0799)
Refugee X 9-10 years	-0.796***	-0.794***	-0.617***	-0.637***	-0.577***	-0.331***
	(0.0143)	(0.0144)	(0.0275)	(0.0410)	(0.0748)	(0.0757)
Refugee X 11-12 years	-0.693***	-0.687***	-0.605***	-0.627***	-0.594***	-0.350***
	(0.0122)	(0.0122)	(0.0247)	(0.0394)	(0.0728)	(0.0738)
Refugee X 13-14 years	-0.653***	-0.658***	-0.609***	-0.635***	-0.590***	-0.349***
	(0.0125)	(0.0126)	(0.0240)	(0.0390)	(0.0718)	(0.0729)
Refugee X 15-16 years	-0.627***	-0.636***	-0.608***	-0.639***	-0.583***	-0.348***
	(0.0132)	(0.0133)	(0.0238)	(0.0387)	(0.0709)	(0.0719)
Refugee X 17-18 years	-0.604***	-0.620***	-0.611***	-0.646***	-0.576***	-0.354***
	(0.0160)	(0.0162)	(0.0240)	(0.0388)	(0.0704)	(0.0712)
Refugee X 19-20 years	-0.550***	-0.560***	-0.566***	-0.606***	-0.535***	-0.324***
	(0.0214)	(0.0217)	(0.0259)	(0.0402)	(0.0723)	(0.0727)
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	No	Yes	Yes	Yes	Yes
Age at arrival FE	No	No	No	Yes	Yes	Yes
Education FE	No	No	No	No	No	Yes
Observations	811998	811998	811998	811998	248698	248698

Dependent variable is log(Earnings).

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years), Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.8: Male Natives and Refugees: Earnings Gaps

	(1)	(2)	(3)	(4)	(5)	(6)
Years since migration						
Refugee X 0 years	-2.748***	-2.757***	-2.303***	-2.177***	-2.127***	-1.912***
	(0.0733)	(0.0732)	(0.0797)	(0.0806)	(0.239)	(0.238)
Refugee X 1-2 years	-1.666***	-1.666***	-1.289***	-1.222***	-1.147***	-0.972***
	(0.0150)	(0.0150)	(0.0272)	(0.0323)	(0.0620)	(0.0635)
Refugee X 3-4 years	-1.315***	-1.310***	-1.014***	-0.975***	-0.940***	-0.754***
	(0.00945)	(0.00940)	(0.0239)	(0.0298)	(0.0542)	(0.0556)
Refugee X 5-6 years	-0.937***	-0.932***	-0.832***	-0.788***	-0.772***	-0.576***
	(0.00854)	(0.00852)	(0.0226)	(0.0288)	(0.0515)	(0.0530)
Refugee X 7-8 years	-0.799***	-0.798***	-0.787***	-0.744***	-0.716***	-0.515***
	(0.00769)	(0.00769)	(0.0216)	(0.0281)	(0.0497)	(0.0513)
Refugee X 9-10 years	-0.801***	-0.791***	-0.821***	-0.782***	-0.738***	-0.533***
	(0.00744)	(0.00747)	(0.0207)	(0.0274)	(0.0485)	(0.0501)
Refugee X 11-12 years	-0.827***	-0.826***	-0.852***	-0.820***	-0.791***	-0.587***
	(0.00807)	(0.00808)	(0.0196)	(0.0266)	(0.0466)	(0.0484)
Refugee X 13-14 years	-0.854***	-0.854***	-0.880***	-0.854***	-0.838***	-0.637***
	(0.00890)	(0.00893)	(0.0192)	(0.0263)	(0.0459)	(0.0476)
Refugee X 15-16 years	-0.858***	-0.843***	-0.883***	-0.865***	-0.849***	-0.655***
	(0.00991)	(0.0100)	(0.0193)	(0.0265)	(0.0465)	(0.0481)
Refugee X 17-18 years	-0.882***	-0.861***	-0.901***	-0.894***	-0.854***	-0.664***
	(0.0132)	(0.0134)	(0.0201)	(0.0273)	(0.0475)	(0.0491)
Refugee X 19-20 years	-0.919***	-0.875***	-0.915***	-0.917***	-0.888***	-0.710***
	(0.0203)	(0.0205)	(0.0237)	(0.0305)	(0.0521)	(0.0536)
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	No	Yes	Yes	Yes	Yes
Age at arrival FE	No	No	No	Yes	Yes	Yes
Education FE	No	No	No	No	No	Yes
Observations	999311	999311	999311	999311	287245	287245

Dependent variable is log(Earnings).

All regressions also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years), Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: The Impact of Initial Conditions on Employment of Female Refugees: Baseline Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0278***	-0.0408***					-0.0255***	-0.0405***
	(0.00859)	(0.0155)					(0.00844)	(0.0155)
Network			0.0116***	0.00374			0.0120***	0.00462
			(0.00361)	(0.00883)			(0.00361)	(0.00888)
Attitudes					0.0267***	0.0168	0.0249***	0.0154
					(0.00581)	(0.0105)	(0.00564)	(0.0105)
Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	278909	55480	278909	55480	278909	55480	278909	55480

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Standard errors are clustered at the level of Canton of arrival × Year of arrival.

* p < 0.10, ** p < 0.05, *** p < 0.01

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Table A.10: The Impact of Initial Conditions on Employment of Male Refugees: Baseline Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0225***	-0.00921					-0.0182**	-0.00711
	(0.00793)	(0.0111)					(0.00819)	(0.0114)
Network			-0.00885***	-0.00482			-0.00819***	-0.00433
			(0.00313)	(0.00699)			(0.00310)	(0.00695)
Attitudes					0.0283***	0.0216*	0.0262***	0.0209*
					(0.00840)	(0.0114)	(0.00829)	(0.0114)
Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	Yes	No	Yes	No	Yes	No	Yes
Observations	417214	72236	417214	72236	417214	72236	417214	72236

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Standard errors are clustered at the level of Canton of arrival × Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.11: The Impact of Initial Conditions on Employment of Female Refugees by Years Since Migration

	(1)	(2)	(3)	(4)	(5)	(6)
Variable × Years since migration						
Attitudes X 0-2 years	0.00925	0.0132**	0.0110**	-0.00115	0.00857	0.00757
	(0.00569)	(0.00557)	(0.00549)	(0.0114)	(0.0112)	(0.0112)
Attitudes X 3-5 years	0.0193***	0.0185***	0.0162***	0.0126	0.0171	0.0164
	(0.00559)	(0.00600)	(0.00573)	(0.0114)	(0.0119)	(0.0119)
Attitudes X 6-10 years	0.0298***	0.0288***	0.0282***	0.0135	0.0101	0.00993
	(0.00558)	(0.00585)	(0.00585)	(0.0116)	(0.0118)	(0.0118)
Attitudes X 11-15 years	0.0343***	0.0301***	0.0293***	0.0263**	0.0178	0.0177
	(0.00617)	(0.00662)	(0.00647)	(0.0120)	(0.0126)	(0.0125)
Attitudes X 15+ years	0.0430***	0.0308***	0.0289***	0.0271*	0.0191	0.0180
	(0.00748)	(0.00867)	(0.00867)	(0.0146)	(0.0161)	(0.0161)
Unemployment X 0-2 years		-0.0242***	-0.0257***		-0.0315**	-0.0322**
		(0.00805)	(0.00790)		(0.0149)	(0.0148)
Unemployment X 3-5 years		-0.0303***	-0.0308***		-0.0382**	-0.0385**
		(0.00774)	(0.00760)		(0.0156)	(0.0155)
Unemployment X 6-10 years		-0.0304***	-0.0312***		-0.0480***	-0.0482***
		(0.00776)	(0.00766)		(0.0149)	(0.0147)
Unemployment X 11-15 years		-0.0343***	-0.0351***		-0.0546***	-0.0547***
		(0.00805)	(0.00788)		(0.0167)	(0.0164)
Unemployment X 15+ years		-0.0439***	-0.0460***		-0.0539***	-0.0559***
		(0.00876)	(0.00879)		(0.0170)	(0.0175)
Network X 0-2 years			0.00952**			0.00206
			(0.00369)			(0.00882)
Network X 3-5 years			0.00299			0.000676
			(0.00398)			(0.00916)
Network X 6-10 years			0.0159***			0.00463
			(0.00383)			(0.00944)
Network X 11-15 years			0.0171***			0.00906
			(0.00400)			(0.00932)
Network X 15+ years			0.0107**			-0.000587
			(0.00478)			(0.0105)
Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes
Years since migration FE	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	No	No	Yes	Yes	Yes
Observations	278909	278909	278909	55480	55480	55480

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1).

All regressions also include age, age squared, gender, marital status.

Specifications (1) and (4) also include the variables Unemployment and Network, (2) and (5) also include Network.

Standard errors are clustered at the level Canton of arrival × Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.12: The Impact of Initial Conditions on Employment of Male Refugees by Years Since Migration

	(1)	(2)	(3)	(4)	(5)	(6)
Variable × Years since migration						
Attitudes X 0-2 years	0.00680	0.0137*	0.0106	0.00992	0.0172	0.0108
	(0.00720)	(0.00697)	(0.00687)	(0.0124)	(0.0124)	(0.0125)
Attitudes X 3-5 years	0.0525***	0.0450***	0.0418***	0.0481***	0.0486***	0.0439***
	(0.00695)	(0.00736)	(0.00713)	(0.0120)	(0.0123)	(0.0121)
Attitudes X 6-10 years	0.0374***	0.0289***	0.0276***	0.0219*	0.0172	0.0144
	(0.00662)	(0.00716)	(0.00701)	(0.0112)	(0.0117)	(0.0116)
Attitudes X 11-15 years	0.0219***	0.0159**	0.0142**	0.0133	0.0107	0.00807
	(0.00675)	(0.00714)	(0.00693)	(0.0121)	(0.0129)	(0.0126)
Attitudes X 15+ years	0.0173**	0.00538	0.00306	-0.00212	-0.00806	-0.0110
	(0.00695)	(0.00755)	(0.00750)	(0.0144)	(0.0151)	(0.0148)
Unemployment X 0-2 years		-0.00559	-0.00670		0.00622	0.00283
		(0.00781)	(0.00771)		(0.0124)	(0.0122)
Unemployment X 3-5 years		-0.0240***	-0.0244***		-0.00278	-0.00482
		(0.00807)	(0.00789)		(0.0123)	(0.0120)
Unemployment X 6-10 years		-0.0251***	-0.0265***		-0.00929	-0.0116
		(0.00774)	(0.00754)		(0.0119)	(0.0117)
Unemployment X 11-15 years		-0.0220***	-0.0231***		-0.00701	-0.00892
		(0.00784)	(0.00771)		(0.0126)	(0.0125)
Unemployment X 15+ years		-0.0293***	-0.0305***		-0.0111	-0.0129
		(0.00870)	(0.00863)		(0.0149)	(0.0150)
Network X 0-2 years			-0.0134***			-0.0171**
			(0.00297)			(0.00764)
Network X 3-5 years			-0.0188***			-0.0159**
			(0.00380)			(0.00748)
Network X 6-10 years			-0.00293			0.000465
			(0.00328)			(0.00680)
Network X 11-15 years			-0.00687**			0.00358
			(0.00344)			(0.00743)
Network X 15+ years			-0.00561			0.00471
			(0.00399)			(0.00915)
Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes	Yes	Yes	Yes
Years since migration FE	Yes	Yes	Yes	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	No	No	No	Yes	Yes	Yes
Observations	417214	417214	417214	72236	72236	72236

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1).

All regressions also include age, age squared, gender, marital status.

Specifications (1) and (4) also include the variables Unemployment and Network, (2) and (5) also include Network.

Standard errors are clustered at the level Canton of arrival × Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.1: Employment gaps between refugees and natives by arrival cohort and years since arrival (restricted sample, regressions include education dummies)
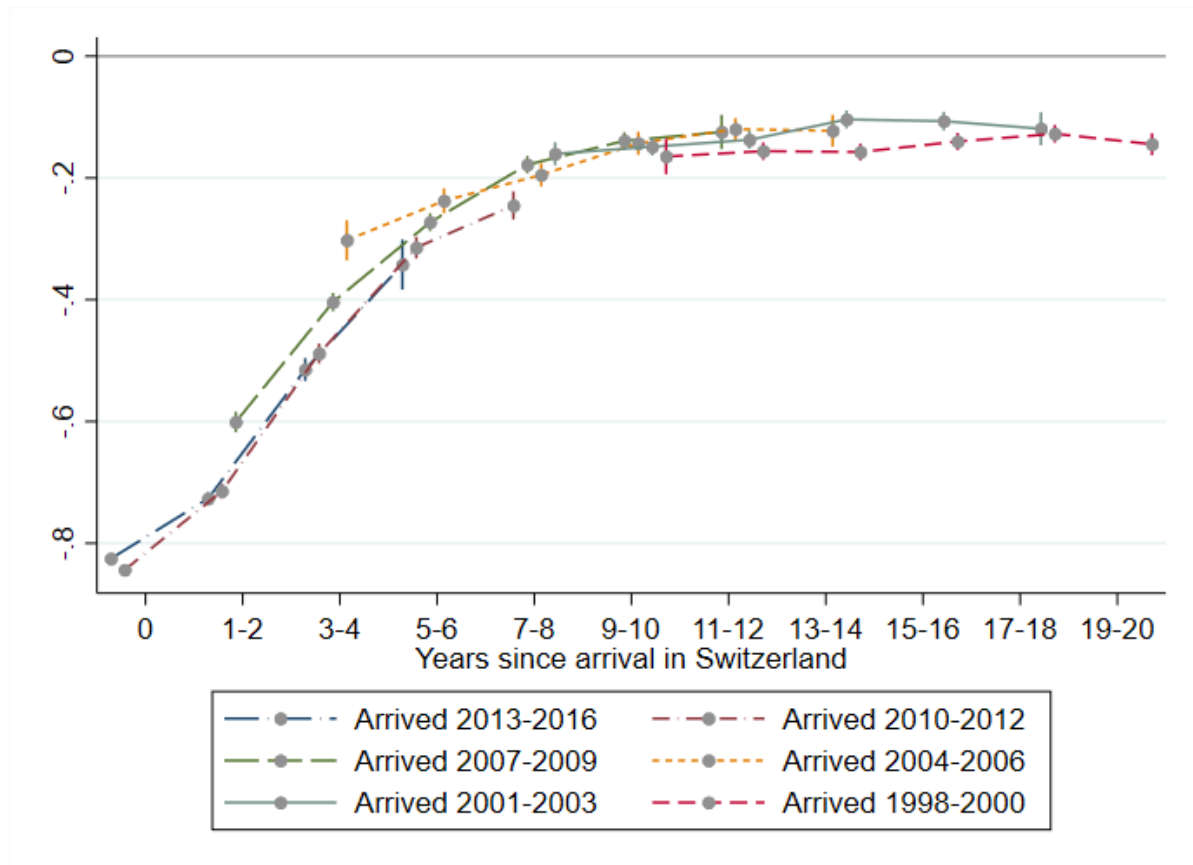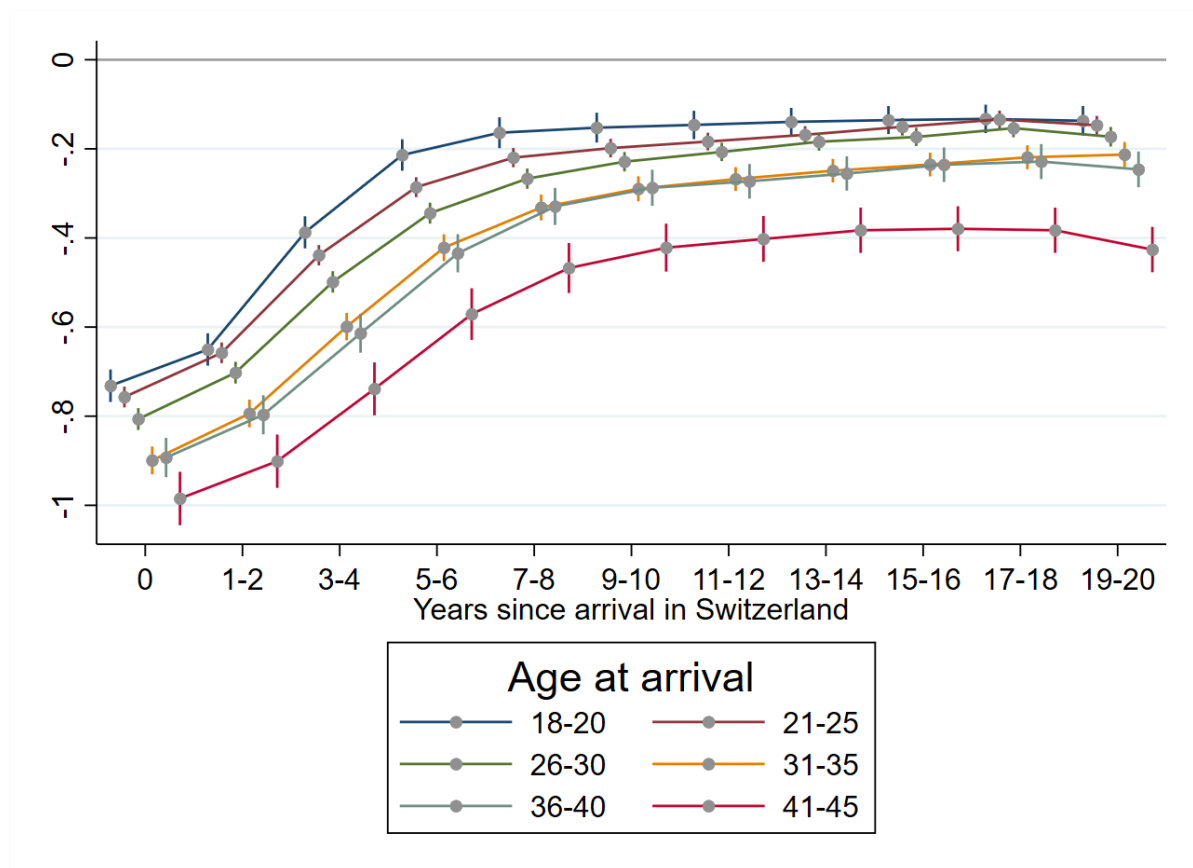
Figure A.2: Employment gaps between refugees and natives by age at arrival and years since arrival (main sample, without education dummies)

B Appendix: Tables Available Upon Request

Integration profiles of refugees. To test the robustness of our results on the integration of refugees in the labor market, we re-estimate equation (1) for refugees and natives (Table B.1) and for refugees and non-EU migrants (Table B.2), using individual fixed effects.

- Table B.1 shows the results of the regressions for natives and refugees, using individual fixed effects, for the main and the restricted sample (columns (FE-main) and (FE-restr)) and compares them to the results obtained in Table 3, columns (1), (4), (5) and (6)).

- Table B.2 shows the results of these regressions (for refugees and non-EU migrants) for the main and the restricted sample (columns (FE-main) and (FE-restr)) and compares them to the results obtained in the online appendix (Table A.4, columns (1), (2), (3) and (4)).

On the one hand, individual fixed effects capture differences in unobserved characteristics between refugees and migrants; this should yield better estimates of the integration profiles. On the other hand, the drawback of using individual fixed effects is that the vertical position of the integration profile is not identified (i.e. all coefficients of the integration profile are identified up to an additive constant). Therefore, a reference category has to be defined (*19-20 years since migration* in columns (FE-main) and (FE-restr)) and we can only compare the "speed" of integration (but not the "level") between columns (1), (2), (3) and (4), on the one hand, and columns (FE-main) and (FE-restr), on the other hand.

Initial conditions: comparing the main and the restricted samples. Tables B.3 and B.4 show comparisons between estimates using the main and the restricted samples, with and without education fixed effects.

- In Table B.3, column (7) and (7') show the same regression (without education fixed effects) using data from the main and the restricted samples, whereas the comparison of columns (7') and (8) shows the impact of introducing education fixed effects in the regression on the restricted sample. Columns (7) and (8) are reproduced from Table 4.

- A similar comparison is made in Table B.4 for the regressions including *Years since migration*. Columns (3) and (3') show the same regression (without education fixed effects) using data from the main and the restricted samples, whereas the comparison of columns (3') and (6) shows the impact of introducing education fixed effects in the regression on the restricted sample. Columns (3) and (6) are reproduced from Table 5.

Table B.1: Natives and Refugees: Employment Gaps

	Main sample			Restricted sample		
	(1)	(4)	(FE-main)	(5)	(6)	(FE-restr)
Years since migration						
Refugee X 0 years	-0.897***	-0.810***	-0.645***	-0.816***	-0.774***	-0.698***
	(0.000733)	(0.00939)	(0.00632)	(0.0211)	(0.0212)	(0.0133)
Refugee X 1-2 years	-0.792***	-0.715***	-0.549***	-0.694***	-0.651***	-0.561***
	(0.00125)	(0.00935)	(0.00623)	(0.0208)	(0.0208)	(0.0126)
Refugee X 3-4 years	-0.554***	-0.510***	-0.334***	-0.476***	-0.432***	-0.323***
	(0.00201)	(0.00926)	(0.00605)	(0.0204)	(0.0205)	(0.0119)
Refugee X 5-6 years	-0.366***	-0.350***	-0.161***	-0.328***	-0.283***	-0.156***
	(0.00260)	(0.00910)	(0.00578)	(0.0200)	(0.0201)	(0.0112)
Refugee X 7-8 years	-0.271***	-0.274***	-0.0720***	-0.256***	-0.211***	-0.0696***
	(0.00270)	(0.00890)	(0.00546)	(0.0196)	(0.0197)	(0.0105)
Refugee X 9-10 years	-0.216***	-0.243***	-0.0331***	-0.225***	-0.180***	-0.0288***
	(0.00266)	(0.00870)	(0.00506)	(0.0192)	(0.0193)	(0.00964)
Refugee X 11-12 years	-0.206***	-0.226***	-0.0123***	-0.210***	-0.166***	-0.00619
	(0.00280)	(0.00841)	(0.00467)	(0.0188)	(0.0189)	(0.00893)
Refugee X 13-14 years	-0.201***	-0.208***	0.00702	-0.197***	-0.153***	0.0133
	(0.00308)	(0.00831)	(0.00450)	(0.0186)	(0.0187)	(0.00854)
Refugee X 15-16 years	-0.193***	-0.195***	0.0151***	-0.192***	-0.150***	0.0175**
	(0.00339)	(0.00835)	(0.00422)	(0.0187)	(0.0187)	(0.00808)
Refugee X 17-18 years	-0.195***	-0.182***	0.0206***	-0.184***	-0.142***	0.0228***
	(0.00420)	(0.00845)	(0.00357)	(0.0188)	(0.0189)	(0.00676)
Refugee X 19-20 years	-0.179***	-0.190***	*Reference*	-0.196***	-0.157***	*Reference*
	(0.00571)	(0.00872)		(0.0192)	(0.0192)	
Current year FE	No	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	No	Yes	.	Yes	Yes	.
Age at arrival FE	No	Yes	.	Yes	Yes	.
Education FE	No	No	.	No	Yes	.
Individual FE	No	No	Yes	No	No	Yes
Observations	2402051	2402051	2369553	652793	652793	651012

Regressions (1), (4), (5), (6) also include age, age squared, gender, marital status.

Reference categories: Current year FE (2010), Year of arrival FE (1998), Age at arrival FE (27 years),

Education FE (Secondary I).

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.2: Migrants and Refugees: Employment

	Main sample			Restricted sample		
	(1)	(2)	(FE-main)	(3)	(4)	(FE-restr)
Years since migration						
Refugee X 0 years	-0.519***	-0.412***	-0.326***	-0.431***	-0.421***	-0.330***
	(0.00101)	(0.00177)	(0.00665)	(0.00629)	(0.00631)	(0.0140)
Refugee X 1-2 years	-0.588***	-0.471***	-0.398***	-0.482***	-0.473***	-0.394***
	(0.00141)	(0.00221)	(0.00657)	(0.00662)	(0.00663)	(0.0133)
Refugee X 3-4 years	-0.425***	-0.303***	-0.236***	-0.303***	-0.295***	-0.225***
	(0.00207)	(0.00266)	(0.00644)	(0.00698)	(0.00698)	(0.0127)
Refugee X 5-6 years	-0.259***	-0.150***	-0.0953***	-0.159***	-0.151***	-0.0883***
	(0.00261)	(0.00302)	(0.00621)	(0.00685)	(0.00686)	(0.0120)
Refugee X 7-8 years	-0.171***	-0.0793***	-0.0323***	-0.0870***	-0.0802***	-0.0279**
	(0.00273)	(0.00307)	(0.00592)	(0.00648)	(0.00648)	(0.0113)
Refugee X 9-10 years	-0.127***	-0.0480***	-0.00415	-0.0486***	-0.0424***	0.00104
	(0.00274)	(0.00303)	(0.00557)	(0.00613)	(0.00612)	(0.0106)
Refugee X 11-12 years	-0.106***	-0.0514***	0.000161	-0.0468***	-0.0421***	0.00641
	(0.00293)	(0.00314)	(0.00522)	(0.00609)	(0.00608)	(0.00992)
Refugee X 13-14 years	-0.0934***	-0.0501***	0.00551	-0.0429***	-0.0387***	0.0119
	(0.00328)	(0.00344)	(0.00505)	(0.00654)	(0.00653)	(0.00955)
Refugee X 15-16 years	-0.0839***	-0.0457***	0.00437	-0.0467***	-0.0428***	0.00576
	(0.00368)	(0.00380)	(0.00478)	(0.00716)	(0.00715)	(0.00909)
Refugee X 17-18 years	-0.0753***	-0.0414***	0.00623	-0.0460***	-0.0428***	0.00675
	(0.00468)	(0.00474)	(0.00412)	(0.00892)	(0.00891)	(0.00776)
Refugee X 19-20 years	-0.0685***	-0.0377***	*Reference*	-0.0469***	-0.0449***	*Reference*
	(0.00661)	(0.00661)		(0.0123)	(0.0123)	
Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Year of arrival FE	Yes	Yes		Yes	Yes	
Origin country FE	No	Yes		No	Yes	
Education FE	No	No		Yes	Yes	
Individual FE	No	No	Yes	No	No	Yes
Observations	3917904	3917900	3741352	793496	793496	792763

Regressions (1), (2), (3) and (4) also include age, age squared, gender, marital status.

Standard errors are clustered at the individual level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.3: The Impact of Initial Conditions on Employment of Refugees: Baseline Estimates

	(7)	(7')	(8)
Unemployment rate	-0.0205***	-0.0232**	-0.0224**
	(0.00685)	(0.0106)	(0.0104)
Network	0.00164	0.000620	0.000782
	(0.00265)	(0.00512)	(0.00509)
Attitudes	0.0278***	0.0216***	0.0213***
	(0.00623)	(0.00814)	(0.00811)
Current year FE	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes
Education FE	No	No	Yes
Sample	Main	Restricted	Restricted
Observations	696135	127737	127737

Dependent variable is Employment dummy.

All regressions also include age, age squared, gender, marital status.

Standard errors are clustered at the level of Canton of arrival $\times$ Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table B.4: The Impact of Initial Conditions on Employment of Refugees by Years Since Migration

	(3)	(3')	(6)
Variable × Years since migration			
Attitudes X 0-2 years	0.0117**	0.0126	0.0122
	(0.00533)	(0.00951)	(0.00948)
Attitudes X 3-5 years	0.0347***	0.0363***	0.0360***
	(0.00531)	(0.00928)	(0.00924)
Attitudes X 6-10 years	0.0306***	0.0162*	0.0159*
	(0.00516)	(0.00841)	(0.00840)
Attitudes X 11-15 years	0.0218***	0.0148*	0.0145*
	(0.00548)	(0.00855)	(0.00850)
Attitudes X 15+ years	0.0175***	0.00493	0.00438
	(0.00603)	(0.0104)	(0.0104)
Unemployment X 0-2 years	-0.0134**	-0.0119	-0.0113
	(0.00642)	(0.0107)	(0.0105)
Unemployment X 3-5 years	-0.0268***	-0.0212*	-0.0205*
	(0.00609)	(0.0109)	(0.0108)
Unemployment X 6-10 years	-0.0287***	-0.0298***	-0.0288***
	(0.00588)	(0.0104)	(0.0102)
Unemployment X 11-15 years	-0.0279***	-0.0294**	-0.0280**
	(0.00594)	(0.0115)	(0.0113)
Unemployment X 15+ years	-0.0362***	-0.0324**	-0.0309**
	(0.00664)	(0.0129)	(0.0127)
Network X 0-2 years	-0.00211	-0.00719	-0.00727
	(0.00265)	(0.00573)	(0.00572)
Network X 3-5 years	-0.00781**	-0.00706	-0.00704
	(0.00312)	(0.00572)	(0.00571)
Network X 6-10 years	0.00546**	0.00354	0.00350
	(0.00271)	(0.00518)	(0.00515)
Network X 11-15 years	0.00457	0.00677	0.00709
	(0.00279)	(0.00540)	(0.00532)
Network X 15+ years	0.00368	0.00267	0.00365
	(0.00348)	(0.00620)	(0.00617)
Current year FE	Yes	Yes	Yes
Country of birth FE	Yes	Yes	Yes
Years since migration FE	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes
Canton of arrival X Current year FE	Yes	Yes	Yes
Education FE	No	No	Yes
Sample	Main	Restricted	Restricted
Observations	696135	127737	127737

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1).

All regressions also include age, age squared, gender, marital status.

Standard errors are clustered at the level Canton of arrival × Year of arrival.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$