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

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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 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

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process, whereas the existence of a co-ethnic network does not consistently lead to a faster integration. It is shown 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. These effects persist over the refugees' life-cycle. Together these results, highlight the importance of taking 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.

Declarations of interest: none

JEL Codes: F22, J24, J61

Keywords: Refugees; Labor market integration; Inequalities

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Abstract

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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 this paper is to examine the economic integration of refugees in Switzerland and, in particular, the role of local contexts in affecting the pattern of integration in the Swiss labor market. We focus on the effects of initial conditions on the employment of refugees and leverage the quasi-random initial allocation of refugees to cantons over the period 1998–2018. Our analysis accounts for three aspects of initial conditions at the canton level: labor market conditions, co-ethnic network effects and natives' attitudes toward refugees and immigrants.

In the paper, we employ a unique dataset based on 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. To measure attitudes toward migration and asylum, we exploit the particular context of the Swiss (semi-)direct democracy and construct a time-varying indicator of attitudes at the canton level, based on cantonal vote outcomes in all federal votes related to migration and asylum during our period of analysis.

When estimating the effects of initial conditions on refugees' employment, we control for a large set of observed and unobserved factors. Regarding the latter, we control in particular for unobserved economic and social conditions in the canton of residence during the current year, which enables us to identify the separate effects of initial conditions (in the assigned canton at the time of arrival). Moreover, we control for unobserved effects at the level of the canton of arrival, which implies that

2. https://data.worldbank.org/indicator/SM.POP.REFG [Data accessed on May 14, 2021].

the effects of the variables capturing initial conditions are identified through their variation over time within cantons.

Our baseline results are consistent across samples and specifications, whether we estimate the influence of the initial conditions separately or simultaneously. 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 also show a negative significant impact of cantonal unemployment rates at the time of arrival on employment rates of refugees in the following years, but the effect of co-national networks is not significantly different from zero in the baseline. In more detailed analysis, we find positive effects of networks for female refugees and negative effects for male refugees.

Finally, we pursue the analysis further by distinguishing effects in the cross-section and over time. This is particularly relevant for our indicator of attitudes toward migrants and refugees since cross-section effects involve comparisons between cantons for a given vote, whereas changes over time in our indicator involve referendums or popular initiatives with different content. Our results reveal that there is indeed a crucial difference: in the cross section, there is a negative correlation between (restrictive) attitudes and refugees' employment rates, whereas the effect is of opposite sign for changes in attitudes over time. A comparison of our indicator with items related to migration in the European Social Survey (ESS) reveals that cross-section effects are correlated with cultural beliefs, whereas the change towards more restrictive attitudes in a given canton is associated with the willingness to limit the number of immigrants from ethnically different groups and with a change toward the belief that immigration can be good for the country as a whole. These results seem to reflect the large differences in attitudes between cantons, on the one hand, and the shift in Swiss migration and asylum policy toward free movement of persons with the EU and activation policies in the labor market for migrants and refugees, on the other hand.

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. Second, we examine the role and relative importance of fundamental 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. The few existing studies present limitations. Here we improve in three 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).[3] In addition to this, we are the first to consider a time-varying measure of attitudes at the local level. 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.

The rest of the paper is organized as follows. Section 2 presents the background of the paper, describing the context 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.

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.[4]

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.[5] 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,[6] and about 38 percent of its permanent residents aged 15 or older have a migrant background.[7]

The multicultural context in Switzerland goes along with a long humanitarian tradition. Table 1

3. 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/

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

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

6. 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%).

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

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. 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 (see Figure A.1 in the appendix). 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 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.[8] The maximum time an individual can spend in the national accommodation centers is regulated by law to a maximum of 140 days.[9] 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.[10]

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. 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[11] 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

8. 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].

9. 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.

10. 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.

11. 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.

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.[12] 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 of refugees in high-income countries, refer to Brell et al. (2020) and for a comprehensive 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

12. "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)].

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[13] 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 by relying on longitudinal data. 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 predict future lower employment rates, lower earnings, and lower human capital investment. Conversely, positive attitudes towards migrants promote economic and social integration.

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.

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 policy adopted by the Swedish government over 1985–1991 which placed refugees to initial hosting municipalities independent of individual characteristics. The authors 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

13. 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. 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.

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 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.

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 focus on refugees who obtained subsidiary protection over 2008–2013. They 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. 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 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 to investigate empirically the role of these determinants on refugees' labor market outcomes and economic integration. The literature finds that refugees integrate in the host labor market at a slower pace compared to migrants in general (Brell et al. 2020). Figure 2 presents for Switzerland the employment gaps between refugees and natives by years since arrival. It shows that 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. It also reminds us that the lower part of the integration 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.

Our empirical analysis will test the following hypotheses. 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.

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). 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 and to what extent the local initial conditions will affect in a different way the pattern of integration for refugee women and men—given that women traditionally have larger employment gaps at arrival and several factors may affect their subsequent participation in the labor market.

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 in Switzerland over 1998-2018. It enables 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. Asylum seekers are registered in the AUPER (Automatisierte Personen Registratursystem) database which is provided by the State Secretariat for Migration (SEM). 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 (temporary admission), that person is registered in ZAR (Zentrales Ausländerregister). This longitudinal dataset is also maintained by the SEM. The ZAR dataset includes all foreigners residing in Switzerland and contains similar information to 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 from 1998 to 2018, identify their status changes and importantly, we know to which canton they were allocated upon arrival. From here, we define refugees as all foreign-born individuals who went through an asylum process.

For refugees' labor market outcomes we are adding Swiss social security data provided by the Federal Compensation Office. This data collects information about every Swiss resident that contributes 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 all individuals, irrespective of the residence permit (from paid work, independent work, voluntary contribution or other kinds). This data is available from 1998-2018 and can be matched to the other data sets using the social security number. Our main outcome variable measuring economic integration is employment. An individual is defined as employed if he or

she contributed to old age provision from salaried or independent work.

To obtain information on an individual's education, we are adding the Swiss Structural Surveys from 2010–2018. 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 use this subsample as a robustness check.

The analytical sample used in our empirical analysis includes all refugees who arrived after 1998 since we only observe the labor market outcomes from 1998. We are further restricting the sample to the working age population (18-64 years old)[14] and we only consider refugees who arrived after the age of 17, excluding those who would have had access to primary or secondary education in Switzerland.

For our main explanatory variables, the initial local conditions at cantonal level, we are adding unemployment rates, co-ethnic networks and attitudes towards refugees and migrants in the canton of arrival at the time of arrival. The unemployment rate 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 foreigners 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 section 4.2.

Finally, we complement the data with time varying control variables at the cantonal level available from the FSO. These variables include the log of population, the real median wage and GDP per capita. GDP per capita is available from the year 2008 onwards and is only used in a robustness check where we restrict the period of analysis to 2009–2018. The real median wage is defined as the median gross wage deflated by the consumer price index. The median gross wage is part of the Swiss Earnings Structure Survey (ESS) maintained by the FSO. This variable is not available at the cantonal level but at the level of 7 greater regions.[15]

The final main sample includes 89,407 refugees and the subsample including the Structural Surveys comprises 13,615 refugees. Table 2 presents the summary statistics of the main variables used in the analysis. Refugees in our sample are on average 36 years old and at the time of arrival an average individual is 29 years old. Refugees stayed on average for 12 years in Switzerland over our period of analysis. 59% of the individuals in our sample are male and more than half of them are married. Regarding the labor market outcomes, we can see that the average employment rate among refugees in

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

15. Lake Geneva Region (VD, VS, GE), Espace Mittelland (BE, FR, SO, NE, JU), Northwestern Switzerland (BS, BL, AG), Zurich (ZH), Eastern Switzerland (GL, SH, AR, AI, SG, GR, TG), Central Switzerland (LU, UR, SZ, OW, NW, ZG) and Ticino (TI).

our main sample is 49% and from the restricted sample we can conclude that only few refugees (15%) have a tertiary degree. Most refugees between 1998 and 2018 in Switzerland 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 (see Figure A.2 in the appendix).

4.2 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 canton-level results in votes at the federal level. 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 at the federal level on issues related to migration and asylum. A complete list of these votes is provided in Table A.1, which follows Zimmermann and Stutzer (2021). 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.

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.[16] 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.[17] 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. 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

16. We choose to standardize the vote outcomes rather than just centering them. Some vote outcomes are less dispersed across cantons because there is a large majority in favor of the project. Standardizing the vote results attenuates these differences between votes.

17. In almost all cases of missing data, we simply take the average of the standardized vote outcome in the preceding and the following year. The only exception are the years 2011 and 2012 for which we have no votes. In this case, we use the simple average of the standardized vote outcomes in 2010 and 2013 to fill in these two missing values.

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.[18]

4.3 Empirical Strategy

To 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 1998–2018. Our baseline specification of the estimating equation aims at capturing the overall impact of initial conditions on a refugee's employment probability:

$$Y_{ik\kappa t\tau c} = \delta_0 + \delta_1 I_{\kappa\tau} + \delta_2 X_{it} + \delta_3 Z_{\kappa\tau} + \phi_\tau + \phi_c + \phi_\kappa + \phi_{kt} + \varepsilon_{it\tau k\kappa c}, \quad (1)$$

where $Y_{ik\kappa t\tau c}$ denotes employment in year t of refugee i living in canton k, who arrived in Switzerland in year τ from origin country c and was assigned by Swiss authorities landito canton κ. Our main focus is on the impact of initial conditions $I_{\kappa\tau}$ 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, $I_{\kappa\tau}$: 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.[19] 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 4.2). 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 (ϕ_τ). The latter also control for economic and social circumstances at the national level at the time of arrival. Second, we account for unobserved effects at the level of the current canton of residence, interacted with current year fixed effects (ϕ_{kt}). These fixed effects control for economic and social conditions in

18. Figure 5 shows the relation between initial attitudes in 1998 and the change over the period 1998–2018. The size of each dot represents the canton's population size (of potential voters).

19. 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.

the canton 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). Third, we control for unobserved effects at the level of the canton of arrival (ϕ_κ), which implies that the effects of the variables capturing initial conditions are identified through their variation over time within cantons. To avoid that our estimates of the effects of initial conditions capture spurious correlations with other variables, we also include in some of our estimations time-varying control variables, $Z_{\kappa\tau}$, defined at the level of the canton of arrival (log of real median wages, log of population).[20] Fourth, the heterogeneity of the refugees' backgrounds is taken into account by using country of origin fixed effects (ϕ_c).

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

$$Y_{ik\kappa t\tau c} = \gamma_0 + \sum_{j=1}^{5} \gamma_{1j} I_{\kappa\tau}\, YSM_{itj} + \gamma_2 X_{it} + \delta_3 Z_{\kappa\tau} + \phi_{YSM} + \phi_\tau + \phi_c + \phi_\kappa + \phi_{kt} + \varepsilon_{it\tau k\kappa c}, \qquad (2)$$

where YSM_{itj} are dummy variables indicating for how long refugee i has been in Switzerland in year t. We define five categories j of these dummy variables: 1–2 years ($j = 1$), 3–5 years ($j = 2$), 6–10 years ($j = 3$), 11–15 years ($j = 4$) and more than 15 years ($j = 5$). The coefficients γ_{1j} are the main objects of interest and can be interpreted as the effects of initial condition $I_{\kappa\tau}$ on employment probabilities of refugees, at different durations after their arrival in Switzerland.

In section 5.1, we report our baseline results, which are obtained from the estimation of equations (1) and (2). In the following section, we carry out a number of robustness checks, which confirm the validity of our empirical strategy. Finally, in section 5.3 we pursue further the analysis of the effects of natives' attitudes on arrival, by estimating both cross-section and time-varying effects.

4.4 Balancing checks

In our empirical strategy we are relying on the exogenous allocation of refugees to the 26 cantons. If the placement is not random and some refugees characteristics correlate with the labor market outcomes this could be a threat to our identifying assumptions. In theory, the assignment of refugees to the canton should be completely random, however in practice, there are some exceptions. Refugees can request the placement in a specific canton for reasons of family reunion or health related reasons that requires specific treatment. Except for these special circumstances, officers at the SEM are obliged to follow the allocation rule that ensures that asylum seekers are distributed proportional to the population size across cantons.[21] As explained by Hangartner and Schmid (2021), the allocation decisions are based

20. In section 5.3 below, we also estimate a version of equation (1) that does not include canton of arrival fixed effects, in order to distinguish the cross-section and time-varying effects of initial conditions. In this version of the model, the (time-varying) controls for cantons of arrival play a crucial role.

21. Hangartner and Schmid (2021) analyze the most important appeals against assignment decisions by the SEM, which are decided by the Swiss Federal Administrative Court. They find that the decisions by the SEM are rarely overturned,

on information in the Central Migration Information (ZEMIS) system and officers do not interact with asylum seekers directly. To rule out any threat to our empirical design we conduct two balancing tests. We first plot the population size in 1998 against the number of refugees allocated to the cantons over our period of analysis (Figure A.3 in the Appendix). The graphical analysis confirms that as intended by the allocation rule, cantons with larger populations received larger numbers of refugees. To check whether the allocation is independent from refugees' characteristics, we regress refugees' age, gender and marital status in the year of arrival on an indicator for the arrival canton (Figure A.4 in the Appendix). In the regressions we control for country of birth and year of arrival fixed effects. The results suggest that most characteristics are fairly balanced across cantons except for some small cantons that host a low share of refugees. For all the reasons mentioned before, we conclude that we can rely on the exogenous allocation of refugees to identify causal effects in our analysis and that any exceptions only have a marginal effect on our conclusions.

5 Results

When presenting our results, we focus on 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. Our data allows us to consider the simultaneous influence of all three factors on employment rates of refugees over a long period. 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. We are also the first to use an objective measure of attitudes derived from voting behavior (as opposed to self-reported measures of attitudes from surveys). In addition, we report some novel results on the effects of networks.

5.1 Baseline Results

Table 3 shows our baseline results, which are obtained from the estimation of equation (1). We analyze the impact of each factor taken separately (in columns (1) to (6)) and together (columns (7) and (8) of Table 3). All estimates include a wide range of fixed effects; even and odd columns of Table 3 only differ by the inclusion (or not) of time-varying controls at the level of the canton of arrival.[22] 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 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.[23] Note

and exceptions are only granted in very specific circumstances.

22. In our estimates of Table 3 we include the following time-varying controls defined at the level of the canton of arrival: log of real median wages, log of population. Unfortunately, data for GDP per capita at the canton level is only available for the period after 2008. We include this variable in one of our robustness check, where we estimate the model for the subperiod 2009–2018.

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

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. Finally, results change only marginally when time-varying controls for cantons of arrival are introduced (in even columns, especially when comparing the specifications with the full set of initial conditions (columns (7) and (8)).

The effects of unemployment and attitudes are both economically and statistically significant, but not those of co-national networks. If the unemployment rate increases over time from 1.7% (10^{th} percentile of the distribution of unemployment rates) to 4.8% (90^{th} 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, 10^{th} percentile of the attitudes distribution) has an employment probability which is 7 to 8 percentage points lower over the life cycle than the refugee who arrives a few years later when attitudes have become more restrictive (1.1, 90^{th} percentile).

To gather more insights on the effects of initial conditions over the refugees' life cycle, we estimate equation (2), where the initial conditions are interacted with years since migration dummies. The main results are depicted in Figure 3.[24] The results reveal that both initial unemployment and initial attitudes of natives 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 (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. For co-national networks, we do not obtain significant effects.

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.[25] These findings can be explained by the existence of scarring and geographical lock-in effects.

It is less straightforward to compare our main results on the impact of natives' attitudes towards refugees and migrants with those of Aksoy et al. (2020). Our results can be summarized as follows: if, in a given canton, attitudes towards refugees and migrants become more restrictive over time, refugees who arrive in that canton after this shift in attitudes have higher employment probabilities. These results contrast with the findings by Aksoy et al. (2020) who conclude that restrictive attitudes toward

24. Detailed results of the regressions are given in Table A.2 in the appendix. Figure 3 depicts the coefficients and their 95% confidence intervals for specifications (3) and (6) in Table A.2, where the impact on refugees' employment is estimated jointly for all three initial conditions (the "complete" model).

25. 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.

immigration 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).[26] 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. These 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

26. 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.

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). In section 5.3 we pursue this issue further by estimating a version of the model that allows to account both for cross-section and time-varying effects of attitudes.

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 A.3, we report regressions where the initial condition variables are interacted with dummies for the language region. 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, 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.4 and A.5). 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.

5.2 Robustness Checks

Finally, we carry out a number of robustness checks to corroborate our results. First, we address the concern that the lack of data on refugees' education levels in our main sample might influence our results. As mentioned above in Section 4.1, we are able to obtain information on education levels by matching a subset of our main dataset with the Structural Surveys. If we add education fixed effects to equation (1) and estimate this equation using the restricted sample, we find that the results do not change for unemployment and networks, but the coefficients for attitudes decrease in magnitude (by

about one third, see Table A.6). It is important to note that this restricted sample is 4–5 times smaller than our main sample, which raises the question if the difference in results is due to the introduction of education fixed effects or to the fact that the restricted sample may not be an entirely random selection of the universe of refugee (our main sample). To sort out these issues, we estimate the model on the restricted sample with and without education fixed effects, and compare the results to those of the main sample (see Table A.7). It turns out that the difference between the coefficients for attitudes is entirely due to the change of sample. Accounting for education (in the restricted sample) does not change the results. These results, which are probably due to the large set of fixed effects, validate our choice to focus on the main sample.

Second, another concern might be that refugees move away from their initially assigned canton in great numbers. On the one hand, we account for this possibility by controlling for the current economic and social conditions in the refugee's canton of residence using fixed effects ϕ_{kt}. On the other hand, if refugees move quickly out of their assigned canton, they might not be influenced in a persistent manner by the initial conditions in this canton. In any case, few refugees change cantons after their arrival: over our sample period 1998–2018, only 12.2% of individuals move from their initially assigned canton to another canton at some point in time. 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 admission (F permit): they cannot move to a different canton with this permit and they are only allowed to apply for a regular B permit after 5 years. Moreover, refugees who receive social assistance also remain in the initially assigned canton (whether they hold refugee status or are under temporary protection) because in Switzerland social assistance is provided at the canton level. We carry out two robustness checks to address this concern, by estimating equation (1) for (i) a subsample that includes only refugees who stay in the assigned canton over the whole period of analysis, and (ii) the subset of refugees who receive temporary admission and are therefore legally bound to their initially assigned canton.

When we only consider refugees who stay in the assigned canton over the whole period (see Table A.8), we find the same qualitative results as in the baseline but slightly stronger effects of initial unemployment and initial attitudes (coefficients are about one fifth larger in absolute value). This confirms the hypothesis that those who do not move are subjected to a more persistent influence of initial conditions in the canton of arrival. However, when looking at the effects in the subsample of F permit holders (see Table A.9), coefficients for initial unemployment and initial appear slightly smaller (in absolute value) than in the baseline. Moreover, the effect of co-national networks is significantly positive.[27] These results might be explained by the greater difficulty of F permit holders to find a job through formal channels: employers might be reluctant to hire refugees with a precarious legal status, reinforcing thereby the role of informal co-ethnic networks.

27. This result is consistent with the findings of Martén et al. (2019) who restrict their analysis to F permit holders and find positive network effects.

Third, there were some changes in the legal and institutional framework during our period of analysis. From the perspective of refugees' labor market integration, the most important change is related to the revision of the federal laws on foreigners and on asylum, which granted refugees a better access to integration programs and improved their legal status in the labor market. This revision was accepted by popular vote in 2006 and entered into force in 2008. To check if these legal changes changed the influence of initial conditions on refugees' employment probabilities, we reestimate equation (1) for refugees arriving after the year 2008. Results are qualitatively identical to the baseline but stronger in magnitude (see Table A.10), which seems to indicate that employment has indeed become more sensitive to initial conditions.

Finally, we reexamine the role of networks and consider the argument that co-nationals who are employed might matter more for refugees' employment probabilities. Therefore we reestimate the baseline model using a new definition of networks, which only takes the number of employed co-nationals into account. The results of this estimation confirm this intuition (see Table A.11): with the alternative definition of networks, their effect is positive and significant, suggesting a beneficial effect of networks in the assigned canton at the time of arrival on the employment probability in the following years. This result is consistent with the positive effects of networks that are found in most of the literature.

5.3 Additional Results on Attitudes

In our estimates above, we identify the impact of initial conditions on refugees' employment outcomes through changes over time in these local conditions. In this section we focus on our indicator of attitudes towards immigrants and refugees, which is based on the outcomes of popular votes on these issues in the different cantons. Each vote is coded along a single dimension (whether it represents a more restrictive policy or not) but it is important to acknowledge that the referendums and popular initiatives up for vote differ in content along other dimensions. When identifying the impact of natives' attitudes on the employment rate of refugees, it is therefore crucial to distinguish cross-section effects (which involve comparisons between cantons for a given referendum or popular initiative) from effects identified by changes over time (which involve referendums or popular initiatives with different contents). In our estimations of equation (1), the cross-section effects of attitudes are entirely absorbed by canton-of-arrival fixed effects to the extent that they differ from the effects of changes in attitudes over time. The estimates of the last section only inform us about the latter effects; here we aim at estimating also the former.

To estimate both cross-section effects of attitudes and effects of changes over time, we decompose the indicator of attitudes towards refugees and migrants into its mean (over time for each canton) and deviations from the mean. For the sake of completeness, we do the same for the two other variables of initial conditions, unemployment and co-ethnic networks. We drop the canton-of-arrival fixed effects (which would absorb the means of initial conditions) and report the results of our estimations in

columns (2) and (3) of Table 4. To avoid omitted variable bias, we include all three initial conditions in our estimations and add other (time-constant) controls at the level of the canton of arrival.[28] For comparison purposes, column (1) shows the results of our estimate of equation (1), which are reproduced from column (8) of Table 3. The difference between columns (2) and (3) lies in the way we control for current economic conditions (at time t): in column (2) we use interactions between dummies for seven regions of Switzerland and dummies for the current year, whereas in column (3) we use interactions between dummies for the current canton of residence and dummies for the current year. These two cases represent different geographic levels of aggregation: the seven regions correspond to NUTS-2 in the European classification of territorial units and the 26 cantons to NUTS-3.

When looking at the estimation results in Table 4, it is striking that the estimates of the effects of changes over time in initial conditions are very close in all three specifications. This is reminiscent of the Mundlak estimator: replacing the canton-of-arrival fixed effects with means of all canton-level variables yields close estimates for these coefficients. In this sense, our decomposition of indicators into a time-varying and a time-constant component is consistent with our initial estimates of the former. If we consider the two initial conditions that turned out to be significant determinants of refugees' employment rates in our analysis above (unemployment and attitudes), it appears that the cross-section effect of the cantonal unemployment rate does not differ significantly from its effect over time. For attitudes towards refugees and migrants we find a very different result: the cross-section effect is of opposite sign and significantly different from the effect of changes in attitudes over time.[29] This result is robust across different specifications and seems to indicate that the evolution over time of our indicator of attitudes should be interpreted differently from differences in the cross-section.

Before we pursue this issue further, it is worth exploring briefly the implications of our empirical result. Figure 6 depicts the effects of attitudes towards migration and asylum on predicted employment rates for five different cantons during two periods (the two halves of our sample period: 1998–2007 and 2008–2017). The predicted employment rates in Figure 6 rely on the estimates of the cross-section effects and time-varying effects of attitudes in specification (3) in Table 4. According to these estimates, a refugee arriving during the period 1998–2007 in the canton of Geneva could expect to experience a higher employment rate by almost two percentage points than if he arrived in the canton of Zürich. This is the cross-section effect, which is negatively related to restrictive attitudes: attitudes were more restrictive Zürich than in Geneva. Now consider another refugee who would arrive during the period 2008–2017: for her this initial gap in employment rates increases by almost two percentage points. This

28. These controls include the means (over time for each canton) of all three initial conditions, the mean of the log of population and the mean of the log real median wage, as well as dummy variables for the seven "Great Regions" of Switzerland.

29. Co-national networks were not found to be a significant determinant of refugees' employment rates in our basic regressions in Table 3. Results in Table 4 confirm that the effect of changes in networks over time are not significant. However, when controlling for current economic conditions by using current canton dummies interacted with current year dummies in specification (3), the cross-section effect of co-national networks appears to be significantly positive. Although this result should be taken with a grain of salt for the reasons indicated in the text, it can be explained by the positive effect of co-national networks on female migrants. More precisely, if specification (3) is run separately for female and male migrants, the time-varying effect is significantly negative for men (and not significantly different from the cross-section effect) and both the time-varying and cross-section effects are positive for women (the latter being larger than the former).

is the time-varying effect: attitudes became more restrictive over time in Geneva (and more open in Zürich), a change which is positively related to refugees' employment rates in Geneva (and negatively in Zürich). The comparison between Geneva and Basel-City is even more striking: refugees arriving during the first half of the sample period can expect the same employment rates as in Geneva but over time the convergence of attitudes leads to a significant difference in predicted employment rates. To avoid clutter, we do not depict all 26 cantons on this graph but we give two more examples that illustrate the differences in attitudes and employment rates: the cantons of Ticino and Schwyz, which saw their initially restrictive attitudes towards migration and asylum become even more restrictive over time.

We now return to the question how to interpret the two dimensions of our indicator of attitudes (votes). To do this, we analyze the correlation between our indicator based on cantonal results of popular votes and items in the European Social Survey (ESS). There are six items on attitudes towards immigrants in the ESS that have been included in the questionnaire in all nine rounds of the ESS (2002-2018). The first three items deal with the desirable number of (different types of) immigrants in Switzerland:

Q_1: To what extent do you think Switzerland should allow people of the same race or ethnic group as most Swiss people to come and live here?

Q_2: How about people of a different race or ethnic group from most Swiss people?

Q_3: How about people from the poorer countries outside Europe?

There are four possible answers, coded as follows: "many"=1, "some"=2, "few"=3, "none"=4. The three other items in the ESS that were asked throughout the entire period concern the impact of immigration on the receiving country:

Q_4: Would you say it is generally bad or good for Switzerland's economy that people come to live here from other countries?

Q_5: Would you say that Switzerland's cultural life is generally undermined or enriched by people coming to live here from other countries?

Q_6: Is Switzerland made a worse or a better place to live by people coming to live here from other countries?

Answers are coded on a scale ranging from 0 (e.g., "Good" for Q_4) to 10 (e.g., "Bad" for Q_4). To facilitate interpretation, we code all ESS items such that higher values indicate more restrictive attitudes.[30] Moreover, we standardize the scores of each item in order to make regression coefficients comparable. To relate the ESS scores and our indicator of attitudes, we attribute to each respondent in the ESS

30. This corresponds to the original coding of items Q_1 to Q_3 in the ESS. In contrast, the original scales of answers to items Q_4 to Q_6 were inverted to facilitate the interpretation of our results.

the value of our indicator in her canton of residence during the year of the ESS round. We consider cross-section correlations (by regressing our vote indicator on an ESS item and year fixed effects) and correlations in terms of changes over time (by regressing our vote indicator on an ESS item, as well as year and canton fixed effects).

We begin by looking at cross-section correlations between our indicator of attitudes (votes) and attitudes towards immigration as measured by the six items in the ESS. If we consider correlations between our indicator and one ESS indicator at the time, the correlations are all positive and highly significant.[31] This suggests that, in the cross-section, there is a common component to all these indicators, which indicates whether an individual (or the population of a canton) have a positive or negative general attitude towards migrants and refugees. The ESS item that exhibits the strongest association with our indicator of attitudes is Q_5, which suggests that the difference in vote outcomes between cantons, at a given moment in time, is mainly related to differences in perceptions of migrants and refugees as representing a cultural threat or opportunity. This result is confirmed when we consider partial correlations between our indicator of attitudes and the six items in the ESS: including all six items in a same regression with year fixed effects confirms the strong cross-section association between our indicator of attitudes and the "cultural threat" item Q_5 in the ESS (see columns (1) and (3) in Table 5). The other item which is significantly correlated with our indicator of attitudes is Q_2: the willingness to restrict immigration of people who are racially or ethnically different from the majority. In Switzerland, respondents might associate this category of migrants with asylum seekers since the large majority of other migrants originate from EU countries.

If we turn our attention now to the correlation in terms of changes over time (by including canton fixed effects in the regression, see columns (2) and (4) of Table 5), the picture is very different. By contrast to the cross-section results, the "cultural threat" item Q_5 is not a significant determinant of changes over time in attitudes. It seems that cantonal differences in cultural beliefs related to migration are stable over time (their effect is absorbed by the canton fixed effects). However, item Q_2 remains significant: changes over time in our indicator of attitudes are correlated with changes in the willingness to allow only few immigrants from a different race or ethnic group. It is worth noting in this context that during our sample period, the progressive introduction of the free movement of persons with the EU after 2002 was accompanied by more restrictive admission of immigrants from other origins. Moreover, the partial correlation between item Q_6 and our indicator in attitudes becomes significant in the regressions that include canton fixed effects, and this correlation is negative.[32] This means that changes in our indicator towards more restrictive attitudes in a canton are associated with a growing

31. This holds whether we take individual characteristics of respondents in the ESS into account or not. Results of these regressions can be found in the Appendix, Table A.12. These regressions are run with individual ESS data, with or without individual controls (which include age, gender and dummies for eight education categories). Standard errors are clustered at the level canton $\times$ year.

32. Interestingly, the partial correlation between item Q_6 and our indicator of attitudes is negative even in the cross-section regressions (columns (1) and (3) Table 5). It appears that the presence of the "cultural threat" item Q_5 (which is highly correlated with our indicator in the cross-section) in the regression has a similar effect as the inclusion of canton fixed effects.

belief that immigrants make Switzerland a better place to live. Put together, these two significant coefficients highlight the fact that there has been a change in the content of referendums and popular initiatives up for vote, where a shift towards more restrictive attitudes reflects a willingness to limit in particular the arrival of ethnically different migrants, while designing migration policy in a way that makes immigration beneficial for the country.

The findings in this section can be summed up as follows. Cultural beliefs are relatively stable over time and are associated with voting behavior on all objects up for vote that are related to migration and asylum. Cross-section differences in these cultural beliefs reflect the large differences in attitudes toward migrants and refugees between cantons. On the other hand, in a given canton the change towards more restrictive attitudes is associated with the willingness to limit the number of immigrants from ethnically different groups and with a change towards the belief that immigration can be good for the economy or the country as a whole. This seems consistent with a move in Swiss migration and asylum policy towards activation policies in the labor market and greater conditionality. For example, access to the labor market has been facilitated for asylum seekers but the level of social assistance has been decreased in many cantons for those asylum seekers who do not obtain the refugee status. For naturalization, the residence requirement has been shortened from twelve to ten years but "integration requirements" have been tightened, with the generalized introduction of language tests and the requirement that a candidate does not depend on social assistance.

6 Concluding Remarks

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.

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. We also find that a change toward more restrictive attitudes over time in a canton (relative to attitudes in other cantons) leads to a faster labor market integration of the subsequent refugee cohorts. On the other hand, the existence of a co-ethnic network does not consistently lead to a faster integration.[33] Both 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

33. 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.

years after arrival, and then decreases over time. Our baseline findings on the role of attitudes 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.

At first sight, these results on the effects of attitudes seem to contradict Aksoy et al. (2020). However, some further analysis reveals that the cross-section effects and the effects of changes over time are of opposite sign. We find that cross-section differences in attitudes between cantons are mostly correlated with cultural beliefs about migration. In cantons where migrants and refugees are perceived as a cultural threat, it is likely that there are fewer private and professional contacts between natives and refugees, reducing the latter's chances to find a job. This is consistent with our empirical finding that a refugee who is assigned to a canton with restrictive attitudes faces lower employment probabilities. By contrast, changes toward more restrictive attitudes over time within a canton (which increase refugees' employment probabilities according to our empirical results) have a different interpretation: they are correlated with the willingness to limit the number of immigrants from ethnically different groups and with a change toward the belief that immigration can be good for the country. This seems to reflect the recent shift in Swiss migration and asylum policy toward free movement of persons with the EU and activation policies in the labor market for migrants from other countries and refugees.

Based on our findings, 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.

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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 Surveys)	
	Mean	Std.Dev.	Mean	Std.Dev.
Cohort size	89407		13615	
Observations in sample	606152		134785	
2009-2018	212264		27696	
Characteristics				
Female	0.41		0.43	
Age	36	9.56	38	8.99
Age at arrival	29	8.15	29	7.64
Married	0.53		0.60	
Length of stay	12	5.78	14	4.89
Labour market outcomes				
Employment rate	0.49		0.59	
Earnings	26320.14	23774.18	29113.40	24945.91
Education				
Secondary I			0.62	0.48
Secondary II			0.23	0.42
Tertiary			0.15	0.36

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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0252***	-0.0271***					-0.0216***	-0.0225***
	(0.00657)	(0.00648)					(0.00669)	(0.00663)
Network			-0.000518	-0.000577			-0.0000989	-0.000140
			(0.00244)	(0.00243)			(0.00243)	(0.00242)
Attitudes					0.0292***	0.0289***	0.0275***	0.0264***
					(0.00623)	(0.00605)	(0.00598)	(0.00572)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	606152	606152	606152	606152	606152	606152	606152	606152

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. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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

	(1)	(2)	(3)
Unemployment – Mean(Unemployment)	-0.0225***	-0.0252***	-0.0224***
	(0.00663)	(0.00692)	(0.00664)
Mean(Unemployment)		-0.0221***	-0.0120**
		(0.00510)	(0.00556)
Network – Mean(Network)	-0.000150	0.00132	0.00000349
	(0.00242)	(0.00236)	(0.00243)
Mean(Network)		0.000617	0.0377**
		(0.0119)	(0.0173)
Attitudes – Mean(Attitudes)	0.0264***	0.0232***	0.0262***
	(0.00572)	(0.00550)	(0.00578)
Mean(Attitudes)		-0.0120**	-0.0141**
		(0.00556)	(0.00699)
Country of birth FE	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes
Canton of arrival FE	Yes	No	No
Canton of arrival controls	Yes	Yes	Yes
Current region X Current year FE	No	Yes	No
Current canton X Current year FE	Yes	No	Yes
Observations	606152	606152	606152

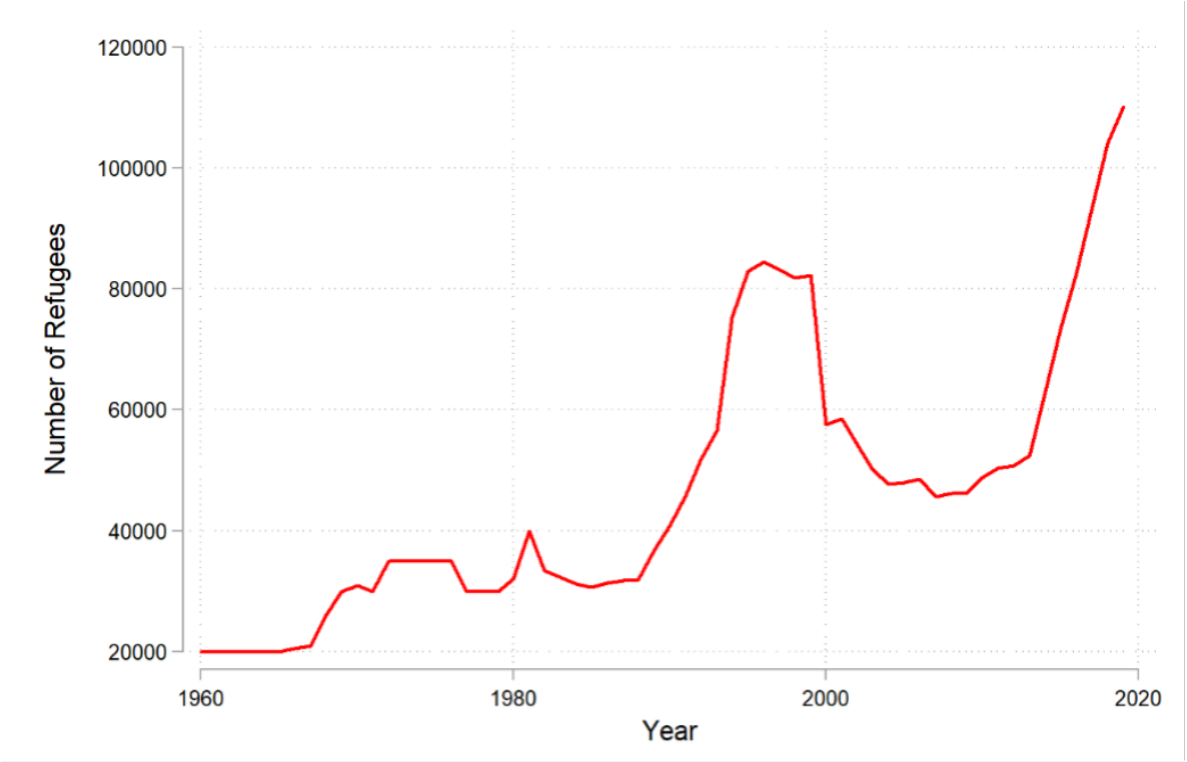
Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1). Mean(*Variable*) denotes the mean over time by canton of *Variable*. All regressions also include age, age squared, gender, marital status. Time-varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Regressions (2) and (3) also include as controls the means (over time by canton) of log of population and log of real median wage. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Conditional correlation between our indicator of attitudes (votes) and attitudes towards migration in ESS

	(1)	(2)	(3)	(4)
Allow many/few immigrants of same race/ethnic group as majority	-0.0219	-0.00288	-0.0261	-0.00320
	(0.0194)	(0.00686)	(0.0190)	(0.00677)
Allow many/few immigrants of different race/ethnic group from majority	0.0475**	0.0120**	0.0423**	0.0123**
	(0.0197)	(0.00571)	(0.0198)	(0.00580)
Allow many/few immigrants from poorer countries outside Europe	0.00959	-0.00246	0.0111	-0.00222
	(0.0179)	(0.00553)	(0.0175)	(0.00554)
Immigration good/bad for country's economy	-0.0197	0.00621	-0.0281**	0.00526
	(0.0134)	(0.00510)	(0.0139)	(0.00509)
Country's cultural life enriched/undermined by immigrants	0.197***	0.00203	0.188***	0.00237
	(0.0324)	(0.00522)	(0.0316)	(0.00502)
Immigrants make country better/worse place to live	-0.0204	-0.0123**	-0.0221*	-0.0122**
	(0.0126)	(0.00543)	(0.0126)	(0.00532)
Year FE	Yes	Yes	Yes	Yes
Canton FE	No	Yes	No	Yes
Individual Controls	No	No	Yes	Yes
Observations	14123	14123	14085	14085

Dependent variable: indicator of attitudes (votes) at cantonal level. Individual controls include eight education dummies, age and gender. Standard errors are clustered at the level Canton × Year. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Total Number of Refugees[34] 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.

34. 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: Trajectory of Employment Probability

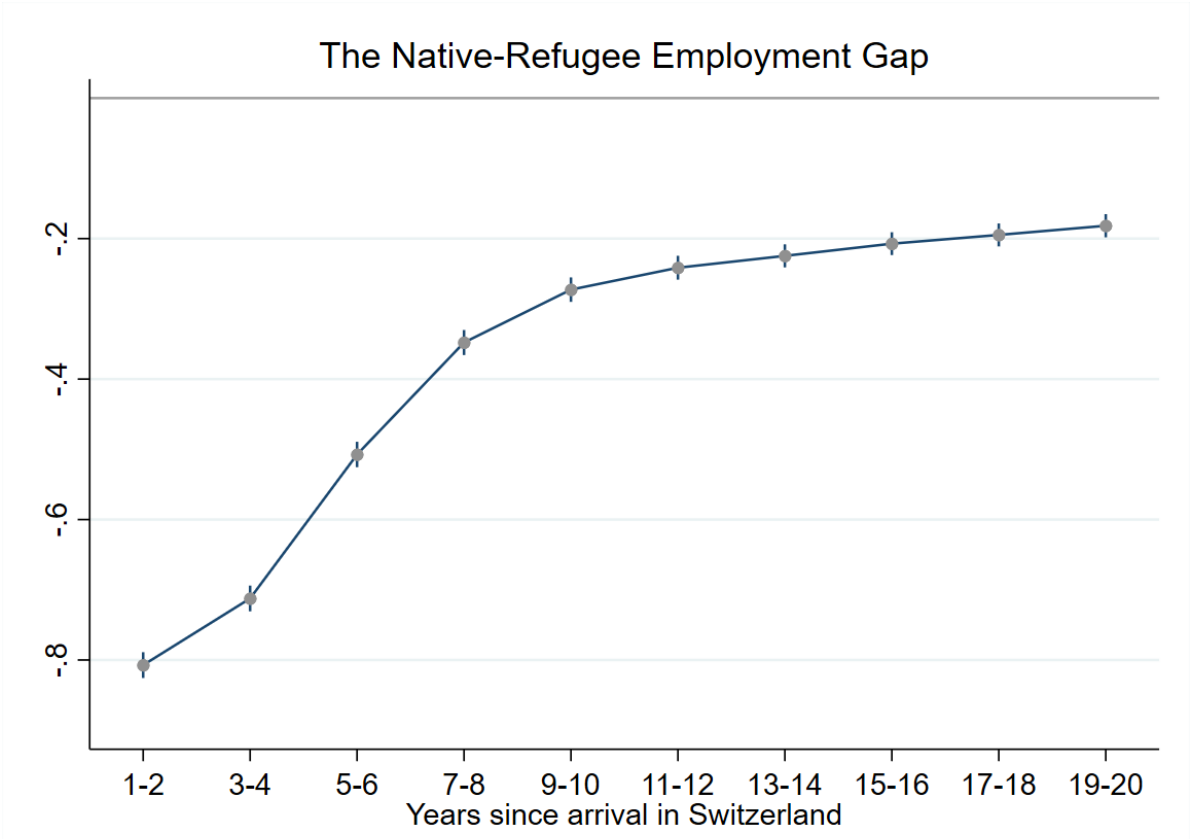


Figure 3: The Impact of Initial Local Conditions on Probability of Employment

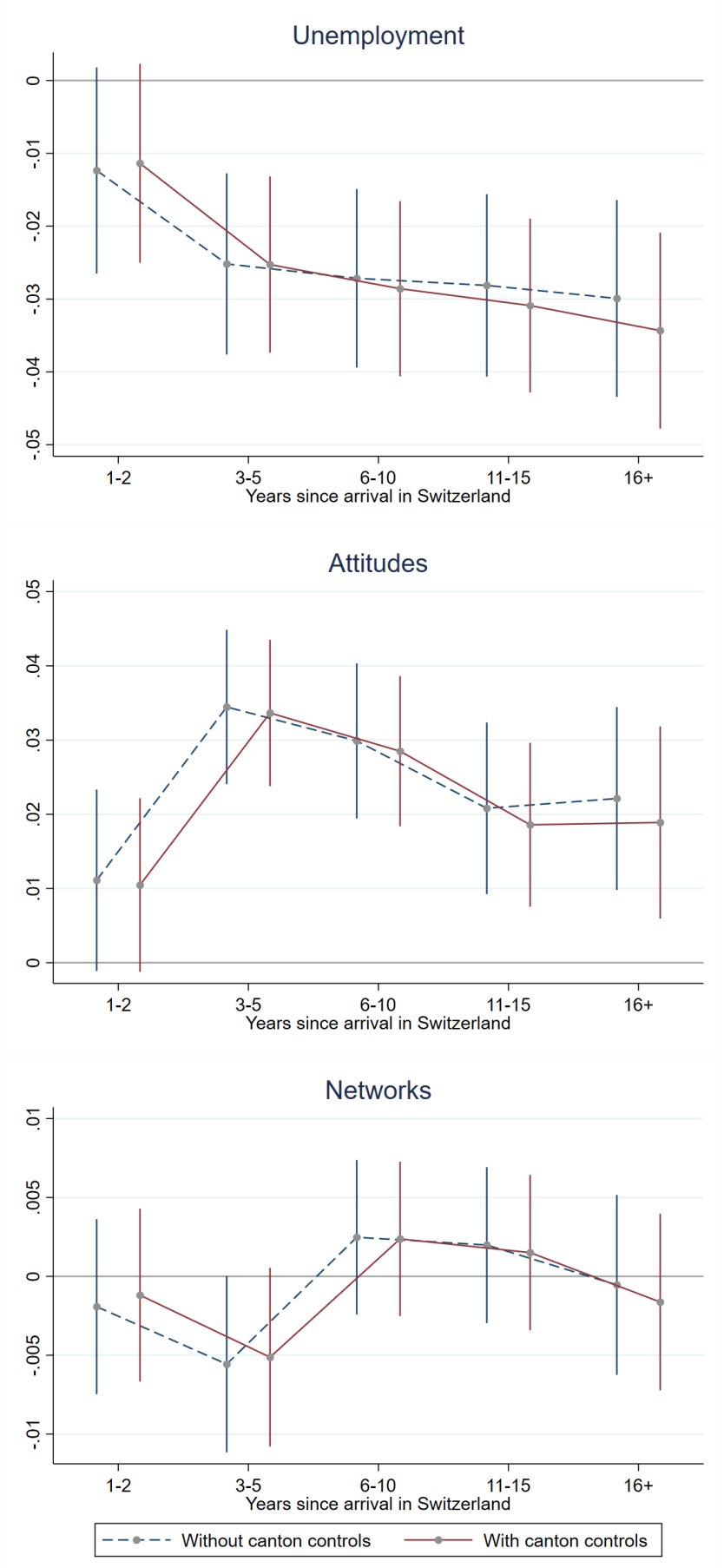


Figure 4: Attitudes toward restricting migration and asylum: standardized vote outcomes (black) and filled-in data (red), by canton 1998-2018

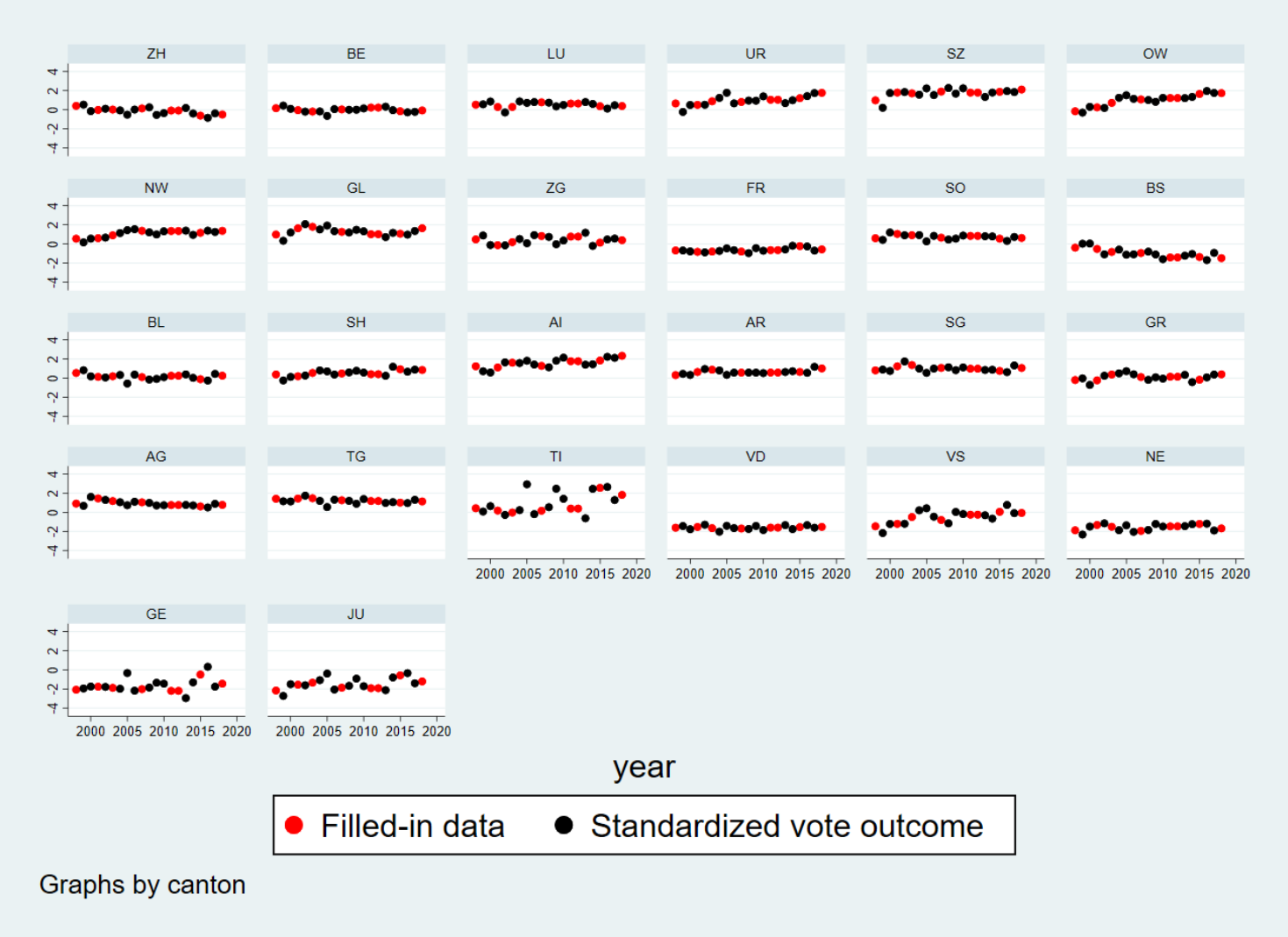


Figure 5: Attitudes toward migration and asylum: initial attitudes vs. change over time (by canton)

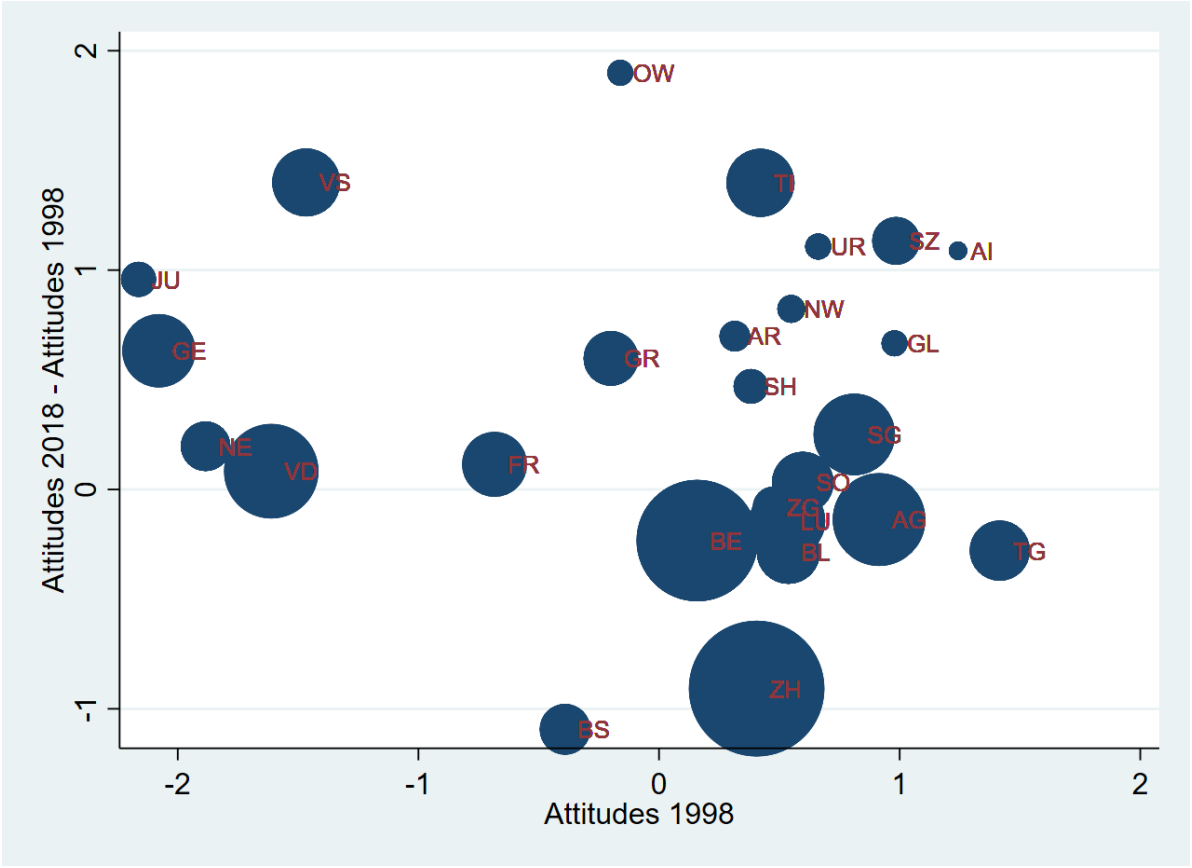
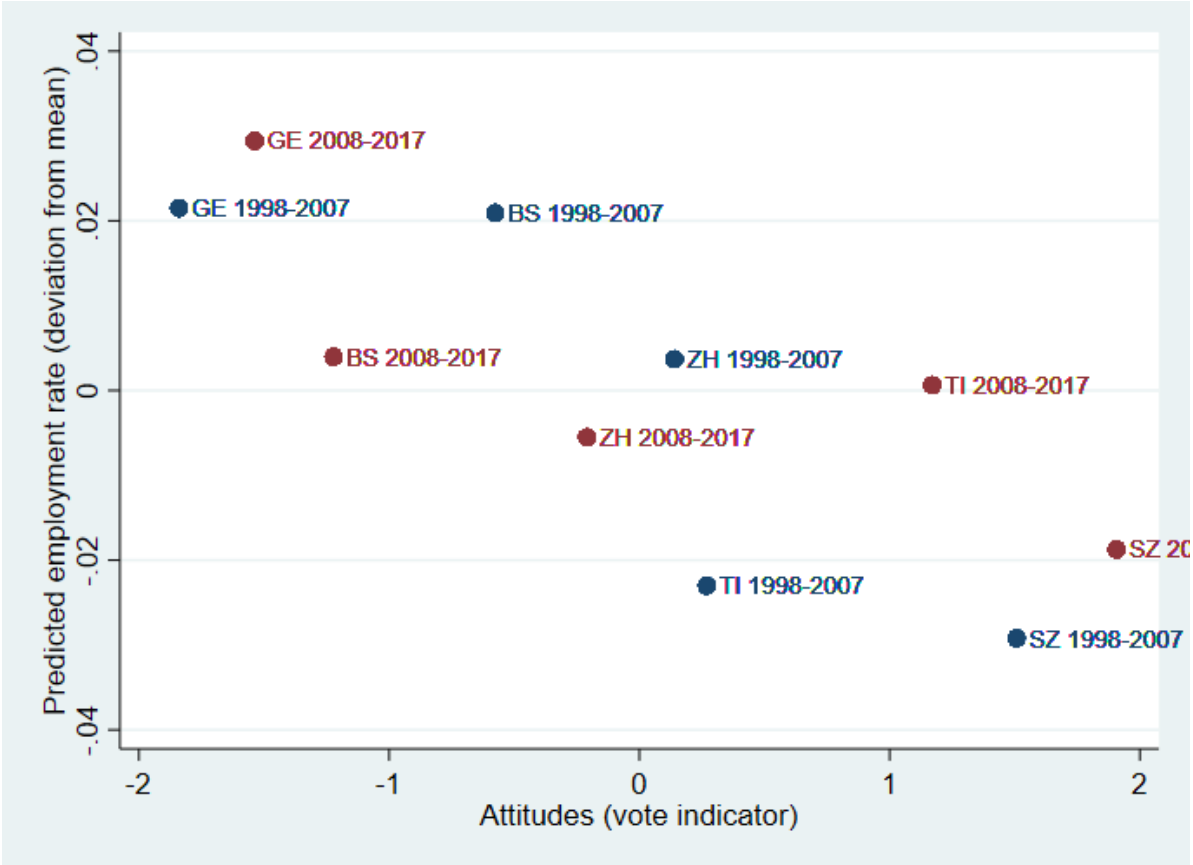


Figure 6: Predicted employment rates of refugees and attitudes toward migration and asylum in five cantons and two periods



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

	(1)	(2)	(3)	(4)	(5)	(6)
Variable × Years since migration						
Attitudes X 1-2 years	0.00503	0.0125**	0.0111*	0.00326	0.0113*	0.0105*
	(0.00620)	(0.00629)	(0.00622)	(0.00605)	(0.00594)	(0.00595)
Attitudes X 3-5 years	0.0391***	0.0360***	0.0345***	0.0379***	0.0347***	0.0337***
	(0.00557)	(0.00543)	(0.00529)	(0.00536)	(0.00509)	(0.00502)
Attitudes X 6-10 years	0.0348***	0.0303***	0.0299***	0.0342***	0.0284***	0.0285***
	(0.00532)	(0.00538)	(0.00532)	(0.00521)	(0.00516)	(0.00515)
Attitudes X 11-15 years	0.0268***	0.0214***	0.0208***	0.0265***	0.0185***	0.0186***
	(0.00577)	(0.00605)	(0.00589)	(0.00567)	(0.00566)	(0.00562)
Attitudes X 15+ years	0.0299***	0.0232***	0.0221***	0.0299***	0.0191***	0.0189***
	(0.00624)	(0.00639)	(0.00627)	(0.00641)	(0.00663)	(0.00659)
Unemployment X 1-2 years		-0.0115	-0.0123*		-0.0106	-0.0114
		(0.00728)	(0.00720)		(0.00699)	(0.00695)
Unemployment X 3-5 years		-0.0249***	-0.0252***		-0.0252***	-0.0253***
		(0.00643)	(0.00633)		(0.00622)	(0.00616)
Unemployment X 6-10 years		-0.0266***	-0.0272***		-0.0283***	-0.0286***
		(0.00634)	(0.00624)		(0.00618)	(0.00612)
Unemployment X 11-15 years		-0.0277***	-0.0281***		-0.0309***	-0.0309***
		(0.00646)	(0.00637)		(0.00610)	(0.00608)
Unemployment X 15+ years		-0.0289***	-0.0299***		-0.0337***	-0.0343***
		(0.00693)	(0.00688)		(0.00685)	(0.00685)
Network X 1-2 years			-0.00192			-0.00119
			(0.00282)			(0.00279)
Network X 3-5 years			-0.00556*			-0.00513*
			(0.00285)			(0.00288)
Network X 6-10 years			0.00248			0.00238
			(0.00249)			(0.00249)
Network X 11-15 years			0.00199			0.00151
			(0.00252)			(0.00251)
Network X 15+ years			-0.000540			-0.00163
			(0.00290)			(0.00285)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	No	No	Yes	Yes	Yes
Observations	606152	606152	606152	606152	606152	606152

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. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.3: The Impact of Initial Conditions on Employment of Refugees: Language Regions

	(1)	(2)	(3)	(4)	(5)	(6)
Attitudes X German	0.0222***	0.0202***	0.0202***	0.0205***	0.0167**	0.0164**
	(0.00759)	(0.00767)	(0.00763)	(0.00722)	(0.00717)	(0.00715)
Attitudes X French	0.0342***	0.0350***	0.0352***	0.0348***	0.0353***	0.0355***
	(0.0111)	(0.00976)	(0.0101)	(0.0111)	(0.00974)	(0.00998)
Attitudes X Italian	0.0407***	0.0368***	0.0334***	0.0408***	0.0367***	0.0331***
	(0.0114)	(0.0111)	(0.0118)	(0.0114)	(0.0112)	(0.0119)
Unemployment X German		-0.0202***	-0.0200***		-0.0220***	-0.0220***
		(0.00668)	(0.00675)		(0.00652)	(0.00659)
Unemployment X French		-0.0227***	-0.0225***		-0.0238***	-0.0238***
		(0.00671)	(0.00668)		(0.00660)	(0.00659)
Unemployment X Italian		-0.0205***	-0.0172**		-0.0227***	-0.0194**
		(0.00754)	(0.00870)		(0.00746)	(0.00857)
Network X German			-0.000721			-0.000812
			(0.00247)			(0.00246)
Network X French			-0.00104			-0.00117
			(0.00320)			(0.00333)
Network X Italian			0.00858			0.00913
			(0.00726)			(0.00734)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	No	No	Yes	Yes	Yes
Observations	606152	606152	606152	606152	606152	606152

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. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0263***	-0.0316***					-0.0242***	-0.0292***
	(0.00892)	(0.00854)					(0.00872)	(0.00837)
Network			0.0116***	0.0115***			0.0119***	0.0118***
			(0.00326)	(0.00324)			(0.00330)	(0.00328)
Attitudes					0.0265***	0.0217***	0.0249***	0.0189***
					(0.00600)	(0.00589)	(0.00582)	(0.00555)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	249742	249742	249742	249742	249742	249742	249742	249742

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. Time varying canton controls include the log of population and the log of log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.5: The Impact of Initial Conditions on Employment of Male Refugees: Baseline Estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0235***	-0.0231***					-0.0195**	-0.0178**
	(0.00772)	(0.00768)					(0.00809)	(0.00810)
Network			-0.00903***	-0.00903***			-0.00849***	-0.00843***
			(0.00301)	(0.00300)			(0.00298)	(0.00297)
Attitudes					0.0279***	0.0302***	0.0257***	0.0276***
					(0.00816)	(0.00783)	(0.00801)	(0.00771)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	356399	356399	356399	356399	356399	356399	356399	356399

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. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.6: The Impact of Initial Conditions on Employment of Refugees: Subsample from structural surveys

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0252**	-0.0264**					-0.0241**	-0.0247**
	(0.0100)	(0.0103)					(0.0101)	(0.0104)
Network			0.000622	0.000639			0.00111	0.00112
			(0.00435)	(0.00435)			(0.00434)	(0.00435)
Attitudes					0.0185**	0.0184**	0.0173**	0.0165**
					(0.00799)	(0.00801)	(0.00766)	(0.00768)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Education FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	134785	134785	134785	134785	134785	134785	134785	134785

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. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.7: The Impact of Initial Conditions on Employment of Refugees: Influence of Education FE

	(1)	(2)	(3)
Unemployment rate	-0.0225***	-0.0259**	-0.0247**
	(0.00663)	(0.0106)	(0.0104)
Network	-0.000140	0.000697	0.00112
	(0.00242)	(0.00436)	(0.00435)
Attitudes	0.0264***	0.0166**	0.0165**
	(0.00572)	(0.00772)	(0.00768)
Country of birth FE	Yes	Yes	Yes
Arrival year FE	Yes	Yes	Yes
Canton of arrival FE	Yes	Yes	Yes
Current canton X Current year FE	Yes	Yes	Yes
Education FE	No	No	Yes
Time varying canton controls	Yes	Yes	Yes
Sample	Main	Restricted	Restricted
Observations	606152	134785	134785

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1).
Time varying canton controls include log of population and log of real median wage.
All regressions also include age, age squared, gender, marital status.
Standard errors are clustered at the level Canton of arrival × Year of arrival.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.8: The Impact of Initial Conditions on Employment of Refugees: Never movers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0298***	-0.0325***					-0.0258***	-0.0273***
	(0.00765)	(0.00763)					(0.00777)	(0.00773)
Network			-0.00121	-0.00133			-0.000694	-0.000784
			(0.00286)	(0.00283)			(0.00285)	(0.00284)
Attitudes					0.0357***	0.0350***	0.0338***	0.0322***
					(0.00744)	(0.00714)	(0.00701)	(0.00661)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	507785	507785	507785	507785	507785	507785	507785	507785

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. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.9: The Impact of Initial Conditions on Employment of Refugees: Only F permit

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0191**	-0.0203**					-0.0161*	-0.0170**
	(0.00840)	(0.00830)					(0.00857)	(0.00847)
Network			0.00801**	0.00838**			0.00863**	0.00895**
			(0.00392)	(0.00397)			(0.00390)	(0.00395)
Attitudes					0.0215***	0.0211***	0.0208***	0.0200***
					(0.00720)	(0.00715)	(0.00702)	(0.00690)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	241892	241892	241892	241892	241892	241892	241892	241892

Dependent variable is Employment dummy. Network is defined as log (nb of co-nationals+1). Time varying canton controls include the log of population and the log of log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level Canton of arrival × Year of arrival. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.10: The Impact of Initial Conditions on Employment of Refugees: Period 2009-2018

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0396**	-0.0457***					-0.0280*	-0.0345**
	(0.0156)	(0.0161)					(0.0155)	(0.0161)
Network			-0.00378	-0.00274			-0.00259	-0.00120
			(0.00464)	(0.00456)			(0.00451)	(0.00444)
Attitudes					0.0362***	0.0364***	0.0337***	0.0334***
					(0.00767)	(0.00797)	(0.00755)	(0.00765)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	212260	212260	212260	212260	212260	212260	212260	212260

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. Time varying canton controls include the log of population, log GDP per capita (only available from 2008) and the log of real median wage measured at the level of 7 greater regions. Standard errors are clustered at the level 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 Refugees: Network of working co-nationals

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Unemployment rate	-0.0252***	-0.0271***					-0.0213***	-0.0223***
	(0.00657)	(0.00648)					(0.00674)	(0.00667)
Network			0.00462*	0.00478*			0.00529**	0.00534**
			(0.00255)	(0.00255)			(0.00246)	(0.00246)
Attitudes					0.0292***	0.0289***	0.0281***	0.0270***
					(0.00623)	(0.00605)	(0.00600)	(0.00576)
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
Current canton X Current year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time varying canton controls	No	Yes	No	Yes	No	Yes	No	Yes
Observations	606152	606152	606152	606152	606152	606152	606152	606152

Dependent variable is Employment dummy. Network is defined as log (nb of working co-nationals+1). All regressions also include age, age squared, gender, marital status. Time varying canton controls include the log of population and the log of real median wage measured at the level of 7 greater regions. 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: Conditional correlation between our indicator of attitudes (votes) and attitudes towards migration in ESS: 2002 to 2018

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Regressions with year fixed-effects						
Allow many/few immigrants of same race/ethnic group as majority	0.0757***					
	(0.0134)					
Allow many/few immigrants of different race/ethnic group from majority		0.120***				
		(0.0176)				
Allow many/few immigrants from poorer countries outside Europe			0.106***			
			(0.0174)			
Immigration good/bad for country's economy				0.0936***		
				(0.0152)		
Country's cultural life enriched/undermined by immigrants					0.193***	
					(0.0265)	
Immigrants make country better/worse place to live						0.0986***
						(0.0155)
Panel B: Regressions with year and canton fixed-effects						
Allow many/few immigrants of same race/ethnic group as majority	0.00244					
	(0.00457)					
Allow many/few immigrants of different race/ethnic group from majority		0.00673*				
		(0.00395)				
Allow many/few immigrants from poorer countries outside Europe			0.00350			
			(0.00428)			
Immigration good/bad for country's economy				0.00319		
				(0.00392)		
Country's cultural life enriched/undermined by immigrants					0.00183	
					(0.00403)	
Immigrants make country better/worse place to live						-0.00472
						(0.00381)

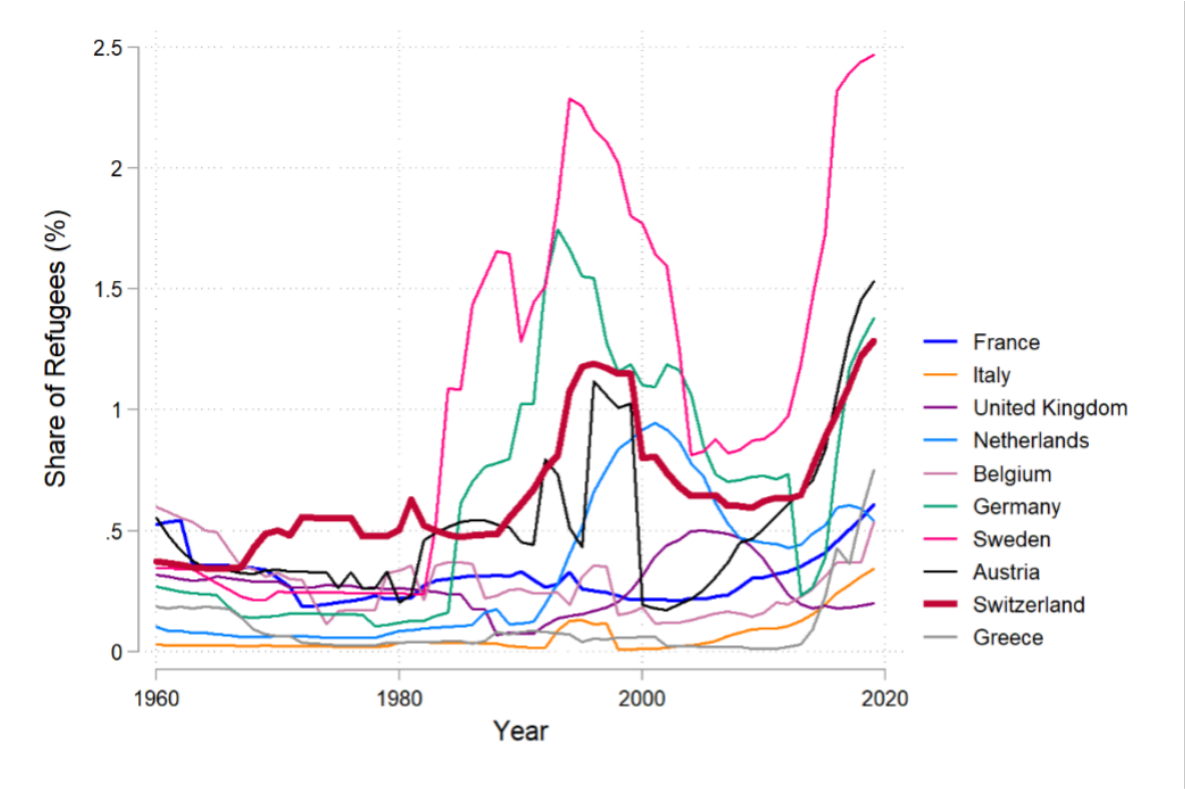
(Table continued on next page).

Table A.12: Conditional correlation between our indicator of attitudes (votes) and attitudes towards migration in ESS: 2002 to 2018 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)
Panel C: Regressions with year fixed-effects and individual controls						
Allow many/few immigrants of same race/ethnic group as majority	0.0522***					
	(0.0128)					
Allow many/few immigrants of different race/ethnic group from majority		0.0982***				
		(0.0168)				
Allow many/few immigrants from poorer countries outside Europe			0.0865***			
			(0.0166)			
Immigration good/bad for country's economy				0.0692***		
				(0.0143)		
Country's cultural life enriched/undermined by immigrants					0.175***	
					(0.0255)	
Immigrants make country better/worse place to live						0.0772***
						(0.0143)
Panel D: Regressions with year and canton fixed-effects and individual controls						
Allow many/few immigrants of same race/ethnic group as majority	0.00193					
	(0.00475)					
Allow many/few immigrants of different race/ethnic group from majority		0.00686				
		(0.00422)				
Allow many/few immigrants from poorer countries outside Europe			0.00338			
			(0.00455)			
Immigration good/bad for country's economy				0.00239		
				(0.00401)		
Country's cultural life enriched/undermined by immigrants					0.00148	
					(0.00402)	
Immigrants make country better/worse place to live						-0.00548
						(0.00409)

Dependent variable: indicator of attitudes (votes) at cantonal level. For the dependent variable and ESS items, higher values indicate more restrictive attitudes.
Scores for all ESS items are standardized. The precise wording of the items is given in the text. Individual controls include age, gender and dummies for eight education categories.
Standard errors are clustered at the level Canton × Year. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Figure A.1: Share of Refugees in Total Population for the Top 10 Receiving Countries in Europe, 1960–2019



Note: World Bank data on the year number of refugees and year population: 1960 – 2019. Data refer to the total stock of refugees on the territory in each year. Calculations done by the author.

Figure A.2: Number of refugees arriving from 10 most frequent origin countries

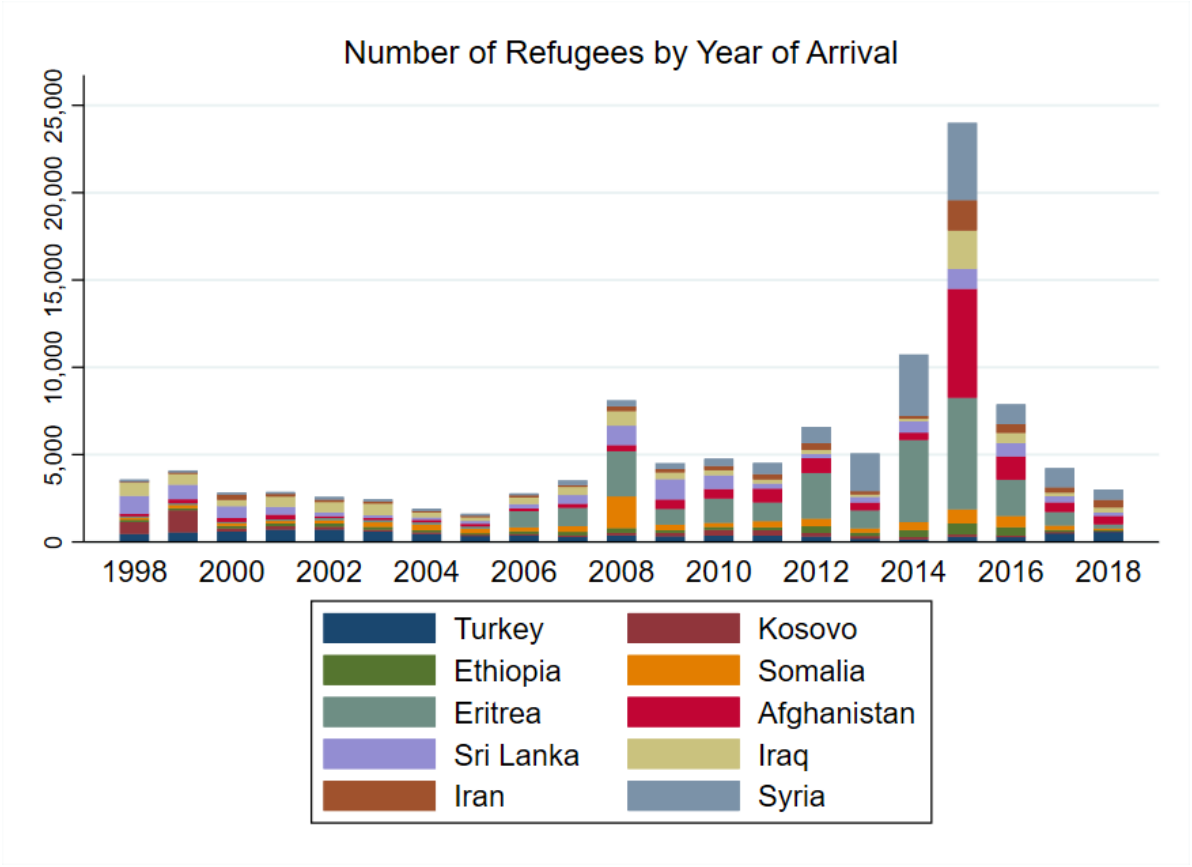


Figure A.3: Balancing check: Cantonal population against number of allocated refugees

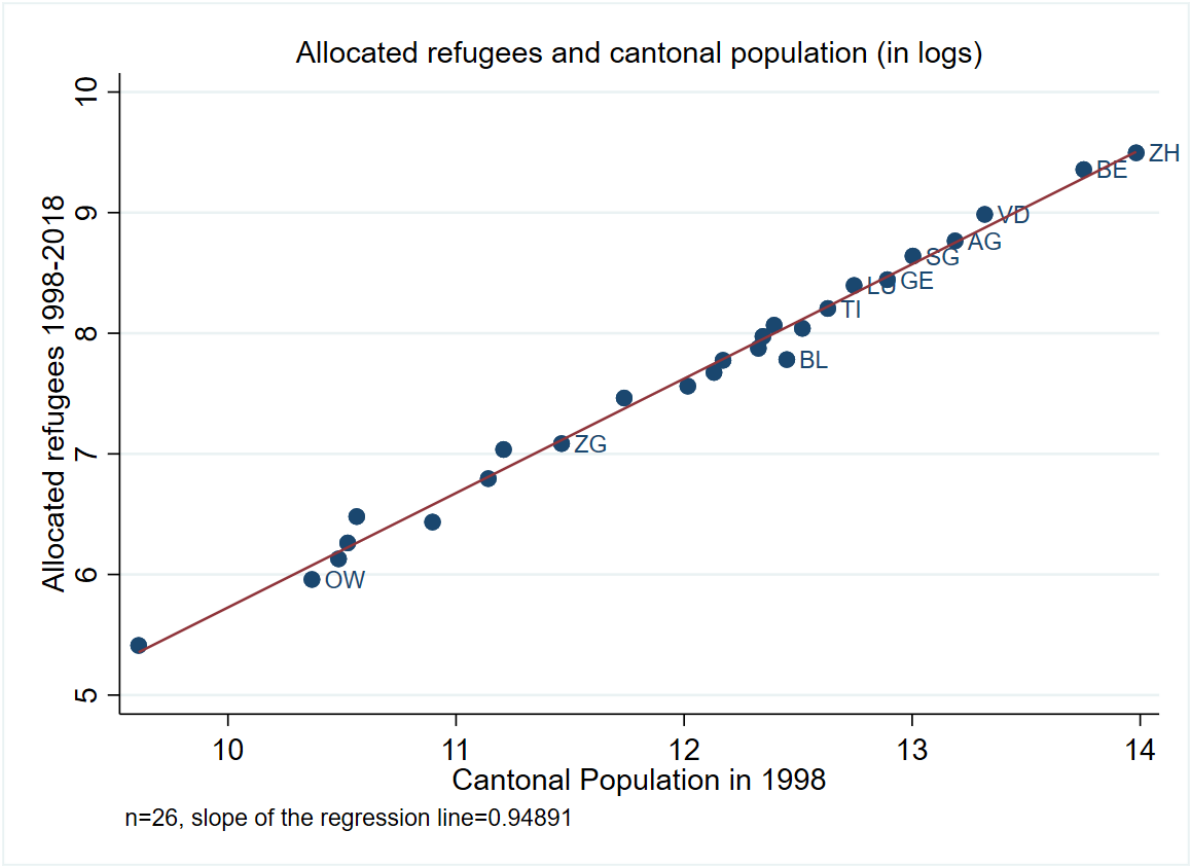


Figure A.4: Balancing check: Regression of refugee characteristics on assigned cantons