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Immigration Quotas and Anti-Immigration Attitudes: An Evaluation of Swiss Migration Policy

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Abstract

Switzerland implemented an immigration quota system to manage the inflow of immigration between 1970 and 2002. This paper adopts a difference-in-difference strategy taking advantage of subnational variations in the implementation of the quota system to evaluate this migration policy. An instrument variable of anti-immigration attitudes is used to address the potential endogeneity issue. The author finds that the immigration quota system slowed down the growth of foreign population in Switzerland, but had no impact on unemployment. Moreover, such immigration restriction lowered the average skill level of the Swiss population which in turn hurt the productivity of the Swiss economy.

JEL Codes: F22, J21, J24, J61, K37

Keywords: Migration; Anti-Immigration Attitudes; Unemployment; Labor Skills

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1 Introduction

Switzerland stands out as a unique case when it comes to immigration. It has one of the largest shares of foreign population among developed countries — as of 2020, 2.21 million (25%) of its 8.67 million permanent residents are of foreign nationalities, and 38% of the total population has immigration background (Swiss Federal Statistical Office 2021).[2] Switzerland also has a long history of accepting refugees from all over the world, which significantly contributes to such high figures. Despite all these, Switzerland does not consider itself as an immigration country. On the contrary, it could indeed be considered a "pioneer" of xenophobia and anti-immigration attitudes in Western Europe since the 1960s (Skenderovic 2015).

In response to the rising negative attitude towards immigrants, the Swiss federal government set up a quota system in 1963 to manage migration inflows into Switzerland. The annual immigration quotas served as the core instrument of the Swiss immigration policy between 1970 and 2002. Until today, it still plays an important role in immigration, though the majority of immigrants into Switzerland are no longer subject to this system after Switzerland concluded the agreement on Free Movement of Persons with the European Union in 2002 (Gross 2006).

The cantonal variation in the immigration quota provides a good opportunity to investigate the effect of an immigration policy aiming at restricting migration inflows. In this paper, I adopt a typical difference-in-difference strategy to empirically estimate such effect. An instrument variable of anti-immigration or xenophobic attitudes measured by referendum votes is utilized to address the potential endogeneity problem of such immigration quota system. I find that the annual immigration quotas implemented by the Swiss federal government did slow down the growth of foreign population in Switzerland, as it intended to. However, it did not lower the unemployment rate to benefit the native workers. On the contrary, it was associated with quite some negative effect on native workers, especially on their skill level. Notably, such plain quantity restriction on immigration favored lower skilled immigrants, and also reduced the incentives of native workers to pursue higher skill levels. Thus, it resulted in lower average skill of the total population, and hurt the productivity of the economy in general.

2. "Permanent" refers to living in Switzerland for a minimum of 12 months, as opposed to temporary.

The rest of the paper is organized as follows. Section 2 provides background information on the Swiss immigration quota system. Section 3 reviews the relevant literature on migration and Swiss political economy. Section 4 states the details of the datasets used in the paper. Section 5 describes the estimation strategy and Section 6 shows the corresponding results. Section 7 concludes.

2 Background

2.1 A Dual labor Market

Switzerland began to implement the immigration quotas back in the 1960s, during which time the booming Swiss economy was attracting hundreds of thousands of workers migrating to the Alpine country every year. Workers needed to obtain relevant residence permits in order to work and live in Switzerland.

At the time, two major types of residence permits were issued to foreign labors—yearly permits *(German: Jahresbewilligungen; French: permis annuels)* and seasonal permits *(German: Saisonbewilligungen; French: permis saisonniers)*. These two types of permits differ in various aspects, especially after the introduction of the quota system in 1963.

The yearly permit (B Permit) allowed the holder to stay in Switzerland for one year and was renewable. Holders of yearly permits were considered "permanent residents" in census and other official demographic statistics. Newly issued yearly permits fell under annual quotas, but renewals were not subject to any quota. Also, family reunion were allowed for the holders of yearly permits, and permits issued for such reasons did not count towards the annual quotas. Moreover, a family reunion permit was usually of the same type as that of the sponsor, granting the adult sponsee the right to seek job and work in Switzerland as well.

The seasonal permit (A Permit) only granted the holder to stay in Switzerland for a maximum of nine months within a year and the holder was obligated to return to home country during the remaining time of the year. Such constituted a "guest worker" labor market which was to a great degree segregated from the mainstream Swiss labor market (Muller 2003). Seasonal permits were issued to specific industries and field as agriculture, construction, and hospitality, where supply of Swiss labor

were inadequate to meet the demand.

Holders of seasonal permits were considered temporary residents and did not count towards any official demographic statistics. In fact, the number of seasonal permit holders residing in Switzerland varied substantially within a year, since the target industries had, as suggested by the name, high degree of seasonality. Holders of seasonal permits could apply for renewal provided that the nine-month maximum had not been reached. However, such renewals counted towards the annual quotas just as newly issued seasonal permits. Family reunions were not granted for holders of seasonal permits. However, holders could convert their seasonal permits to yearly permits after ten consecutive years, and such conversions did not count towards quotas of either seasonal or yearly permits. The minimum length required for conversion was shortened for certain nationalities (Gross 2006).

The nature of this dual labor market with a segregated section targeting seasonal immigration workers implies that fluctuations in the seasonal labor market would have minimal impact on the rest of the labor market in the short to medium term, as suggested by Muller (2003).

Besides these two major types of working permits for immigrants, there exist several others, including permits for temporary-admitted refugees and asylum seekers, non-extendable temporary permits for au pairs and interns, etc. The latter was also under the quota system but the right of work associated with the temporary permits is very limited and thus has very little impact of the general labor market.

The permanent residence permits (C Permits) are awarded to B permit holders after five to ten consecutive years, depending on the nationality of the holder.[3] The permit for cross-border workers (G Permit) was gradually put under quota as well. Today, they contribute to a large proportion of the labor supply, especially in two cross-border metropolitan areas—Geneva and Basle. However, the cross-border labor market scaled up only quite recently, and was relatively negligible when the quota system was first introduced (Beerli et al. 2021).

Therefore, among the major labor forces with immigration background in Switzerland, current and former yearly permit holders potentially had the largest impact on

3. Here the word "permanent" is comparable to the common immigration term where the resident holds long-term (though not exactly indefinite in the Swiss case) residency rights, such as the US Green Card and the Canadian Maple Card.

the Swiss labor market and the introduction of annual immigration quotas hit that group hardest.

2.2 From Soft Ceiling to Hard Ceiling

The immigration quota system was first introduced by the Swiss federal government in 1963. Initially, the national annual quotas, set by the federal government, were allocated to industries and firms, prioritizing industries and companies in greater shortage of labor.

During the 1960s, the annual immigration quotas in fact formed only soft ceilings. The quotas were non-binding constraints as the annual increase in foreign population was significantly lower than the annual quota for yearly permits and the number of seasonal permit holders was lower than the annual quota for seasonal permits.

The shift in immigration policy in 1970 brought two major changes in the quota system. Firstly, the quotas were no longer allocated to industries, but to cantons, besides those reserved by the Confederation. The exact quotas for each canton were the results of consultation and negotiation between the Confederation and the cantons, based on the relative population of each canton. Secondly, the quotas experienced a sharp drop from their level in the 1960s. Especially for the yearly permits, the quotas decreased by one magnitude. The soft ceiling thus turned into hard ceiling, as the quotas became binding constraints for most cantons.

Such hard ceiling existed from 1970 until 2002 when the agreement on Free Movement of Persons was signed between Switzerland and the European Union. The immigration quota system was lifted for citizens of the European Union and only applies to third-country nationals. As European Union was the major source of immigration, this agreement marks the end of the hard ceiling era.

2.3 Rise of Anti-Immigration Attitudes

The great shift in the immigration policy in late 1960s was the result of rising anti-immigration attitudes. The xenophobic groups voiced through the Swiss direct democracy. The first popular initiatives calling to limit the number of immigrants into Switzerland emerged in 1968, but was then withdrawn (Swiss Federal Commission on Migra-

Decade	Date	Referendum	Yes	No
1970s	7 Jun 1970	Initiative against Foreign Dominance	46%	54%
1980s	13 Mar 1977	Fourth Initiative against Foreign Dominance	29.5%	70.5%
1990s	4 Dec 1988	Initiative for the Limitation of Immigration	32.7%	67.3%
2000s	24 Sep 2000	Initiative for a Regulation of Immigration	38.2%	63.8%

Source: Swiss Federal Commission on Migration (2020)

Table 1: Four Notable Referendums on Immigration (1970s to 2000s)

tion 2020). Eventually, several initiatives were put into referendum voting throughout the era of hard-ceiling quotas.

Four notable immigration-related referendums reflect the attitudes of the general Swiss population for each of the four decades expanding the hard-ceiling era—1970, 1977, 1988 and 2000 referendums, respectively. Table 1 lists the brief information on these four referendums. All these four immigration-themed referendums positioned the core demand as limiting the number of foreign population in Switzerland. For detailed contents of the four referendums, please refer to Section A.2 in the Appendix.

3 Literature Review

3.1 Immigration and Labor Market

The literature on migration generally finds that immigration on average has only small positive effect or no effect on wages of native worker (Peri 2014). The mechanism proposed by the literature is that immigrants push native workers to pursue occupations associated with higher social status and wages. For example, Peri and Sparber 2009 argue that native and foreign-born workers are imperfect substitutes in production, and less educated native workers pursue occupations that are more language-intensive in response to immigration. Their empirical test uses micro-level decennial US census data from 1960 to 2000 and occupational task-intensity data from US Department of Labor. Two sets of variables are used as instruments for the share of less educated immigrants in a state—the imputed share of Mexican workers based on 1960 census growing at national rates subsequently, and the distance from a state's center of gravity to the Mexican border. The empirical analysis confirms that foreign-born workers specialize in manual-intensive occupations while native workers pursue communication-

intensive jobs.

D'Amuri and Peri (2014) argue that such positive effects are stronger in countries with more flexible institutions in labor market. They divide job tasks according to their complexity and propose initial shares of immigrants across country-skill cells as instrument for subsequent shares. The main data comes from harmonized European Union labor Force Survey (1996–2010), aggregated into cells. The empirical analysis show that immigrants pushed natives to more complex jobs with higher wages, even during the Great Recession. Such reallocation was larger in countries with more flexible labor laws.

As suggested by Cattaneo et al. (2015), there is no evidence supporting that native workers move out in response to immigration. They use an "enclave" instrument variable where labor market cells are levels/tiers of occupations ranked by wage, education and social status. The data used is individual level longitudinal data from European Community Household Panel. They find that increase in immigrants moves native workers to higher tier occupations, raises wages of natives with some lags, but has no effect in unemployment of native workers.

Inversely, reduction on immigration has negative effect on native wages, for instance the immigration quota system introduced in the US in 1920s. Ager and Hansen (2017) study the effect of implementing this quota system using a difference-in-difference strategy, exploiting the variation in immigration quotas across nationalities. Utilizing micro and county level US Census data (1900–1940) and city level US Census of Manufactures (1909–1929), they show that such quota system slowed down the population growth in the US, and consequently lowered wages of native workers.

Similarly, emigrants have negative wage effects on native unskilled workers. Docquier et al. (2014) use an aggregate production function model to simulate the labor market effects of both immigrants and emigrants. They use a database combining census data to construct bilateral migration flows by education level in OECD countries in the 1990s. Using this global data set, the simulation shows that immigration had a small positive or no effect on wages of natives, and higher beneficial effects on wages of non-college educated natives; while emigration of the high skilled had a negative impact on wages of less educated natives.

There are differing views in literature regarding whether immigration lowers wages

of unskilled native workers. Borjas 2003 argues that similarly educated workers with different experience are imperfect substitutes in the labor market, and thus proposes to define skill groups by education interacted with experience. The author uses panel data from US decennial Censuses from 1960 to 1990 aggregated by skill groups to estimate the effect of immigration on labor market in reduced form. The author demonstrates that immigration substantially lowers the wage of native workers in the same skill group.

While Foged and Peri (2016) provide evidence supporting the opposite. They investigate a refugee dispersal policy implemented by Denmark between 1986 and 1998 to distribute immigrants across municipalities. They argue that this dispersal policy creates self-supporting enclaves when later immigrants joined these earlier settled refugees for family reunification. The authors adopt two empirical approaches. The first one uses the dispersal policy as instrument for refugee-country immigrants. While the second approach adopts a difference-in-difference strategy, using the variations in exposure to immigrants across municipalities. Their find that an increase in refugees pushed less-educated native workers into non-manual occupations, and thus created positive effects on wages and employment of unskilled native workers.

Further research on immigrants finds that later generations of immigrants may have negative impact on wages of earlier immigrants. D'Amuri et al. (2010) exploit the quasi-natural experiment of German reunification and treat the inflows of East German labors as an instrument for all new immigrants. They use German administrative data from 1987 to 2001 for empirical analysis. The conclude that immigration of the 1990s had little adverse effects on native wages and employment, but a substantial adverse employment effect and a small adverse wage effect on previous immigrants.

Besides wages, immigration generates positive effect on productivity and innovation. Peri 2016 uses national accounting data combined with Census between 1960 and 2006 to analyze the long-run impact of immigration on productivity across U.S. states. To address the endogeneity issue, the author uses immigrant communities before 1960 and their distance to Mexican border as instrument for inflows of immigrants. The empirical analysis shows that immigration was positively associated with total factor productivity and negatively with the high skill bias of production technologies.

3.2 Political Economy of Switzerland

In general, similar effect of immigration on wages and productivity is found in the Swiss case.

Basten and Siegenthaler (2019) examine the effect of the immigration inflows resulting from the free movement of labor between Switzerland and the European Union since 2002. Their approach involves a shift-share instrument variable, where the labor market cells are defined by occupational categories and experience. Using administrative data from Swiss central migration information (ZEMIS), Swiss unemployment register and Social Protection, and labor Market Survey (SESAM), they find that immigrants from the European Union reduced unemployment of Swiss residents and the effect on wages is insignificant.

Starting in 1999, Switzerland gradually abolished the restriction on European cross-border workers. Beerli et al. (2021) evaluate the effect of such reform by a Difference-in-Difference strategy, comparing labor markets close to the border and those further away. Their analysis bases on data from employer survey (1994–2010), Business Censuses (1991–2011), and innovation surveys (1996–2013). The results show that in municipalities close to the border, the supply of both foreign labors and permanent resident labors increased, and wages of highly educated native workers rose. Furthermore, R & D employment, patent application, and innovations expanded, as well.

The Swiss labor market and immigration policy has some unique features. Namely, it consists of a "guest worker" system as described in Section 2, in contrary to the "melting pot" system adopted by most countries. Muller 2003 constructs an efficiency-wage model of a dual labor market to analysis the welfare effect of a "guest-worker" migration policy. Higher probabilities of return migration and hiring restrictions under such migration policy create sectoral segregation between immigrants and natives. The model predicts higher welfare gains for natives under the "guest-worker" system than a "melting-pot" migration policy. However, as a result, the share of secondary sector in total employment rises and thus the overall efficiency decreases.

Cultural heterogeneity within Switzerland is also relatively rare in the world. Eugster et al. (2017) find that attitudes towards work have effect on unemployment across different language regions in Switzerland. They identify such effect with a regression discontinuity on the Swiss language border, with a 50 km band. They use official data

from Swiss unemployment register (1998–2003) for men aged 25–59, and conclude that Romance language speakers spend seven weeks longer than their German speaking neighbors searching for jobs.

The Swiss direct democracy acts as an excellent instrument to study the attitudes of the general public towards migrants. Hainmueller and Hangartner (2013) uses micro-level data to study the discrimination against immigrants in the context that some Swiss municipalities used referendums to decide on the naturalization applications until recently. They find that country of origin is the most determining characteristics for naturalization success, and such discrimination is stronger in more xenophobic municipalities.

Between 2003 and 2005, the Swiss Federal Court forced most municipalities to change the process to decide on the naturalization applications—from direct democracy (referendum) to representative democracy (voting by legislators). Hainmueller and Hangartner (2019) use municipal level panel data between 1991 and 2009 to examine such transition. They find that the naturalization rates surged by 60% after the transition, and the increase is higher for more marginalized immigrant groups and in more xenophobic regions.

Another important example is the 2009 referendum which bans the further construction of minarets in Switzerland. The degree of the support for this referendum reflects anti-immigration attitudes. Slotwinski and Stutzer (2019) find that foreigners were 40% likely to move to municipalities with stronger reservations, and housing prices in these places also dropped.

Krishnakumar and Müller (2012) examine the political economy of Swiss immigration policy. They conclude that despite higher stock of immigrants, opinion polls of Swiss show more favorable to immigrants than those of European Union countries. In the context of Swiss direct democracy, such polls tend to be overly pessimistic than the real votes in referendums.

4 Data

Each year since 1970, the Swiss federal government openly publishes annual immigration quotas on first of November for the next 12 months, with few exceptions. These

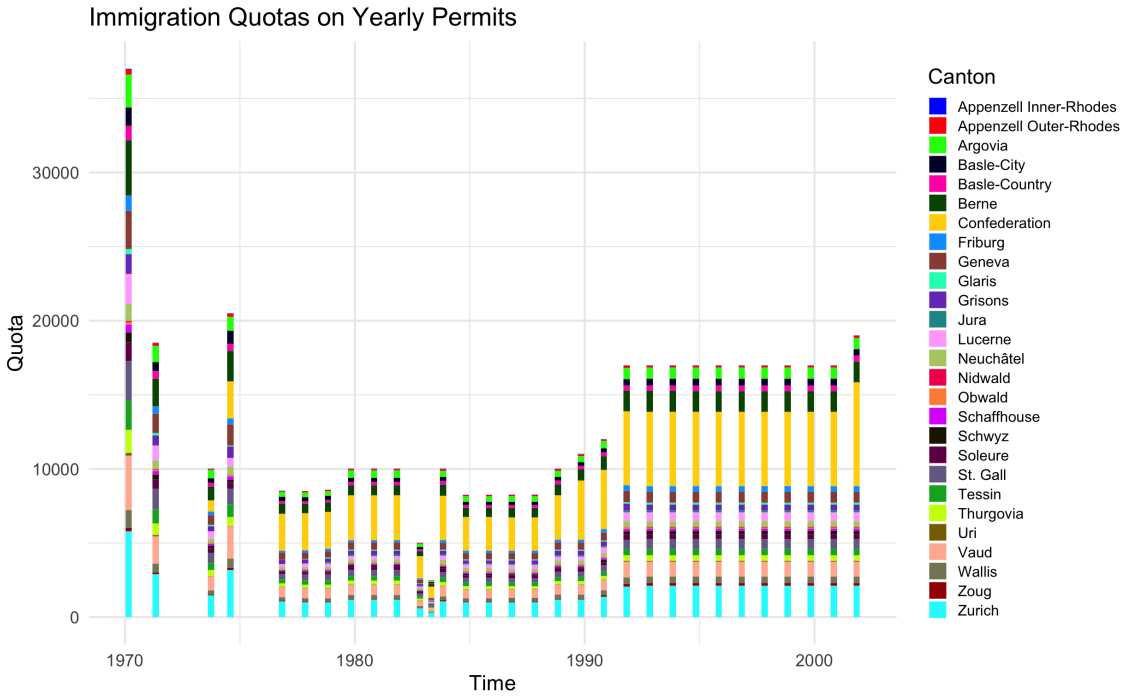

Figure 1: Annual Immigration Quotas on Yearly Permits (1970–2002)

figures are administrative orders forming or amending the annex of relevant Swiss federal laws.[4] The exact numbers of immigration quotas allocated to each canton between March 1970 and November 2001 are obtained directly from these administrative orders.

There was no quota allocation for the year 1973 when the Swiss economy was hit hard by the oil crisis. Also, in 1983, there was an extra interim quota allocation, accompanying the alteration in immigration law. These do not affect the analysis since I aggregate the data over each decade.

Figure 1 and Figure 2 show the annual immigration quotas on yearly permits and seasonal permits, respectively. Quotas allocated to cantons and those reserved by the confederation are labeled in distinct colors.

The immigration quotas at confederation level during the soft ceiling era of 1960s are obtained from the Annual Statistics of Switzerland (1960–1969). The quota "allocation" to the cantons in 1960s is approximated by the cantonal share of permit holders, which is also obtained from the Annual Statistics of Switzerland. The underlying assumption is that, under soft ceiling, the quotas consumed by each canton should be

4. The series of Swiss federal laws overseeing and regulating the annual immigration quotas between 1968 and 2008 are numbered 823.21 in the Systematic Compilation of Federal Legislation compiled by the Swiss Federal Chancellery.

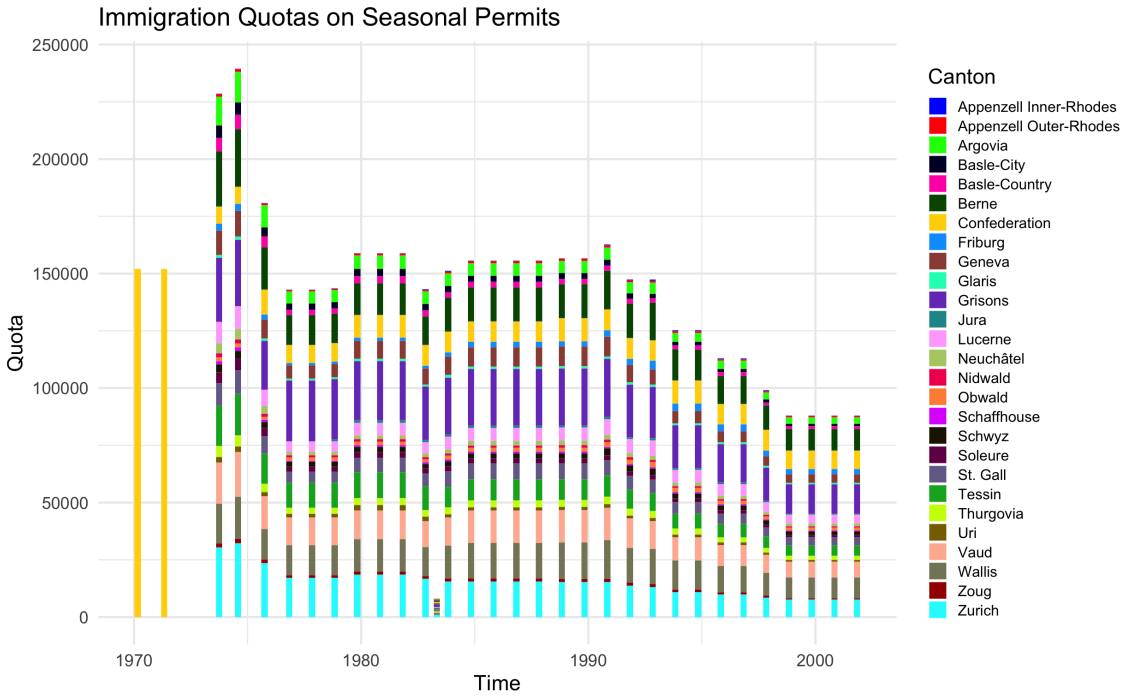

Figure 2: Annual Immigration Quotas on Seasonal Permits (1970–2002)

proportional to the quotas allocated to it.

The voting results of the aforementioned four referendums on immigration is retrieved from the official record of Popular Initiatives by Swiss Federal Chancellery. The results are broken down at cantonal level. The anti-immigration or xenophobic attitude is measured by the proportion of "Yes" votes in an anti-immigration referendum. Figure 3 plots the anti-immigration and xenophobic attitude shown in these four referendums. In the literature, referendum results are often adopted as proxy for social attitudes on the corresponding issues. For instance, Zimmermann and Stutzer (2021) use Swiss referendums on immigration between 1987 and 2017 as preferences of citizens on migratory issues.

The demographic data at municipal level is obtained from the aggregated version of Federal Population Census of Switzerland (1850–2010).[5] To account for the changing border of municipalities and even cantons, a method analogical to the least common multiple is used to construct harmonized municipalities. Specifically, a harmonized municipality is the smallest combination of municipalities that form consistent borders at any time point during the investigated period of time (1950 to 2010).

5. Municipality, also translated as "commune" or "community", is the lowest level of administrative division in Switzerland. The official name is "Gemeinde" in German, "commune" in French, "comune" in Italian, and "vischnanca" in Romansh.

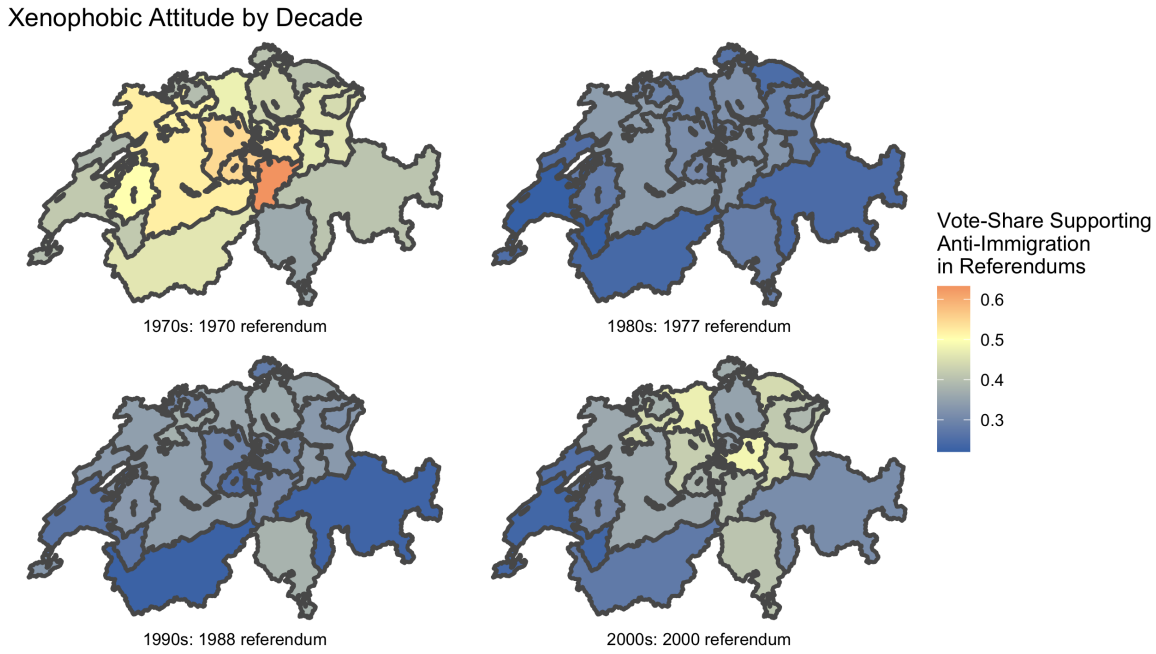

Figure 3: Anti-Immigration and Xenophobic Attitude by Decade (1970–2000)

Consider the following example. In the beginning, there were municipalities A, B, C and D. Then, municipality A was divided into municipalities A1 and A2; municipalities C and D redrew their borders to form new municipalities C′ and D′. Later, municipality A1 was merged with municipality B into new municipality B′. In the end, there remained municipalities A2, B′, C′, and D′. The harmonized municipalities consist of only two municipalities—A+B and C+D. Such historical merger, division, border adjustment, name alteration and other forms of changes are retrieved from Historical List of Swiss Municipalities *(German: Historisiertes Gemeindeverzeichnis der Schweiz; French: Liste historisée des communes)* from Federal Statistical Office of Switzerland. In total, 324 harmonized municipalities are created from 766 authentic municipalities.

The same is applicable at the cantonal level, where the only change is the 1979 split of Canton Jura (JU) from Canton Berne (BE). Thus, throughout the sample, these two cantons form a harmonized Canton "Berne incl. Jura" (BEJU). Another case rises from the size of Canton Appenzell Inner-Rhodes. Per IPUMS, the canton is too small to ensure a 5% sampling to be anonymous. Thus, Canton Appenzell Inner-Rhodes (AI) and Canton Appenzell Outer-Rhodes (AR) are merged into one single canton in all IPUMS samples. For consistency reasons, though municipal level data perfectly distinguishes Canton Appenzell Inner-Rhodes from Canton Appenzell Outer-Rhodes,

the two cantons are merged into Canton Appenzell (ARAI) in all analysis.[6] For a complete list of harmonized cantons, please refer to Table A1 in the Appendix.

Furthermore, there were few cases where municipalities changed the cantonal membership during the investigated time period from 1950 to 2010. The vast majority were associated with the creation of Canton Jura, and their cantonal memberships, after harmonized, indeed remain "Berne incl. Jura". However, also as a consequence of the creation of Canton Jura, District Laufen of Canton Berne (BE) switched to Canton Basle-Country (BL) in 1994. Such switch affects all thirteen municipalities within this district.[7] I exclude all these thirteen municipalities from the analytical sample. Lastly, One municipality with its 1980 Census data missing is also excluded.

Other data at the municipality level include *urbanism* and *border region*. *Urbanism* is the official categorization of municipalities into urban and rural. For an urban municipality, its membership of agglomeration, or metropolitan area, is also defined. For instance, Geneva is an urban municipality and belongs to Geneva metropolitan area; Davos is an urban municipality and does not belong to any metropolitan area. Urbanism categorization is obtained from Spatial Division *(German: Raumgliederungen; French: Niveaux géographiques)* from the Federal Statistical Office of Switzerland.

Border region categorizes if cross-border workers are allowed in the municipality. The official categorization is rather difficult to obtain as it changes over time, and also relatively unrealistic—for example, a municipality in the Rhône Valley is considered border region by the confederation and cross-border workers are allowed; however, the thousand-meter high Alps form natural shields preventing any cross-border workers. An approximation is therefore constructed from the official statistics of cross-border commuters between the first quarter of 1996 (1996Q1) and the third quarter of 1999 (1999Q3). 1996Q1 is the earliest time point for the statistics and 1999Q3 is the latest quarter before the gradual adoption of the Free Movement of Persons which lifted most restrictions on cross-border labor between Switzerland and the European Union. A municipality is considered border region if there were any cross-border commuters

6. Note that coincidentally, Canton Appenzell Inner-Rhodes and Canton Appenzell Outer-Rhodes are both half-cantons and indeed form one full canton in the Swiss Federalism. However, this is not the reason to merge the two half-cantons, and none of such harmonization is performed on the other two pairs of half-cantons—Basle-City (BS) & Basle-Country (BL), and Obwald (OW) & Nidwald (NW).

7. Municipalities in District Laufen (*German: Bezirk Laufen; French: District de Laufon*): Blauen, Brislach, Burg im Leimental, Dittingen, Duggingen, Grellingen, Laufen, Liesberg, Nenzlingen, Roggenburg, Röschenz, Wahlen, and Zwingen.

working in the municipality during that time period.

Table A2 shows the descriptive statistics of these municipal level data. One can easily spot the clear and steady trend in the growth in the foreign share of the population in Switzerland over the second half of the twentieth century—from 6% in 1950 to over 22% in 2010. Meanwhile, the Swiss demography aged quickly. The share of elderly population (aged 65 or plus) rose from 9.6% to 16.9%, while the share of children (aged 14 or less) in the population dropped from 23.5% to 15.1% over the same course. Mass urbanization is another notable phenomenon, with around 75% of the population living in urban area in 2010, compared with only 45% back in 1950. The majority increase was spotted in outer-rim and suburbans of large agglomerations, rather than the urban core of those metropolitan areas. Other aspects of the Swiss demographics were relatively steady.

The individual level data is retrieved from the Integrated Public Use Microdata Series (IPUMS) 5% sample of four waves of the Swiss Federal Population Census (1970–2000). However, these are repeated cross-sectional data without the possibility to follow individuals over time. Table A3 shows the descriptive statistics of these individual level data.

Apart from the demographic trends already shown in the municipal-level data, these micro census data also reveal some other information. Firstly, the average and typical educational attainment of the Swiss population advanced from mandatory schooling to vocational education. Regarding employment, the rate of unemployment, the share of inactive labor force, and the share of part-time workers among employment all witnessed relatively large increase, while retired population were increasing quickly but took a sharp turn after the Great Depression. As for the occupational skills, more and more are now possessing high skills as categorized by the ILO. On the demand side of the labor market, agriculture, mining, construction and manufacturing have all been downsizing, while both skilled service and other service sectors have been expanding.

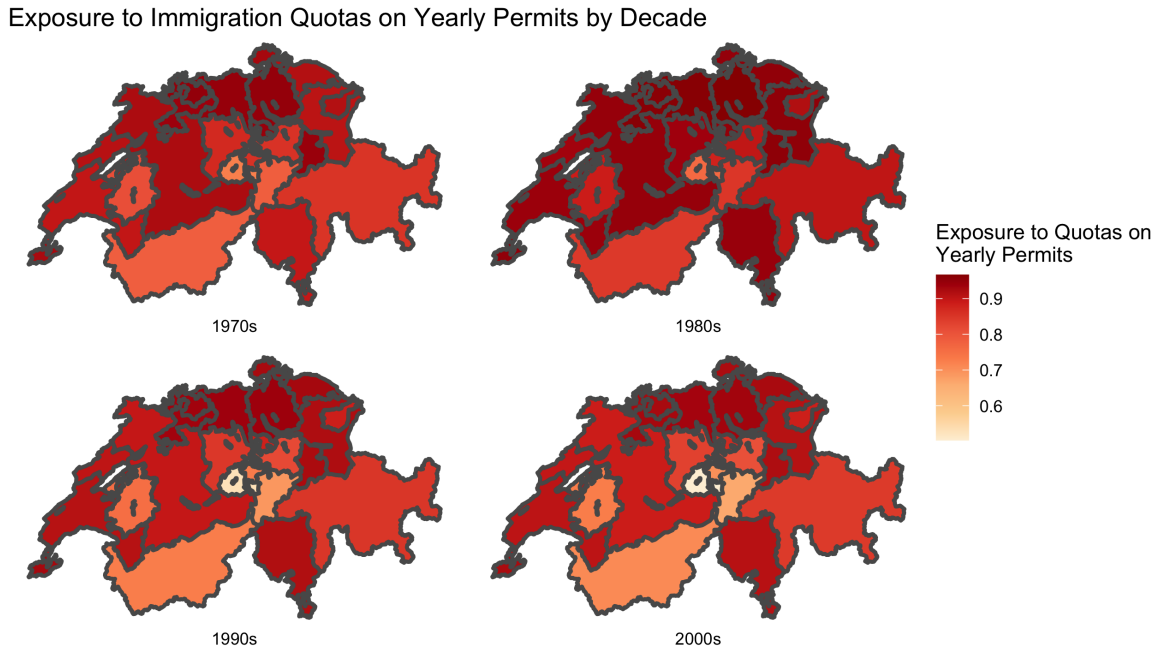

Figure 4: Exposure to Immigration Quotas on Yearly Permits by Decade

5 Methods

To evaluate the effect of the immigration quota system, an exposure variable is needed to capture the proportional decrease in the immigration quota from its unbinding level in 1960s. Formally, for canton c, define the standardized quota over decade d as the absolute quota over decade d divided by the quota in 1960s:

$$\text{standardized quota}_{c,d} := \frac{\text{quota}_{c,d}}{\text{quota}_{c,1960}}$$

Thus for canton c, its exposure to the immigration quota system over the decade d is

$$\text{exposure}_{c,d} = 1 - \text{standardized quota}_{c,d} = \frac{\text{quota}_{c,1960} - \text{quota}_{c,d}}{\text{quota}_{c,1960}}$$

For yearly permits, the decennial quota is the sum of quotas over the past decade. For seasonal permits, the decennial quota is the average annual quota over the past decade. By definition, no exposure exists prior to 1960s. Namely, for $d \leq 1960$, $\text{exposure}_{c,d} = 0$, $\forall c$. Figure 4 and Figure 5 show the exposure to immigration quotas on yearly and seasonal permits respectively.

To empirically estimate the effects of the immigration quotas, I employ a difference-

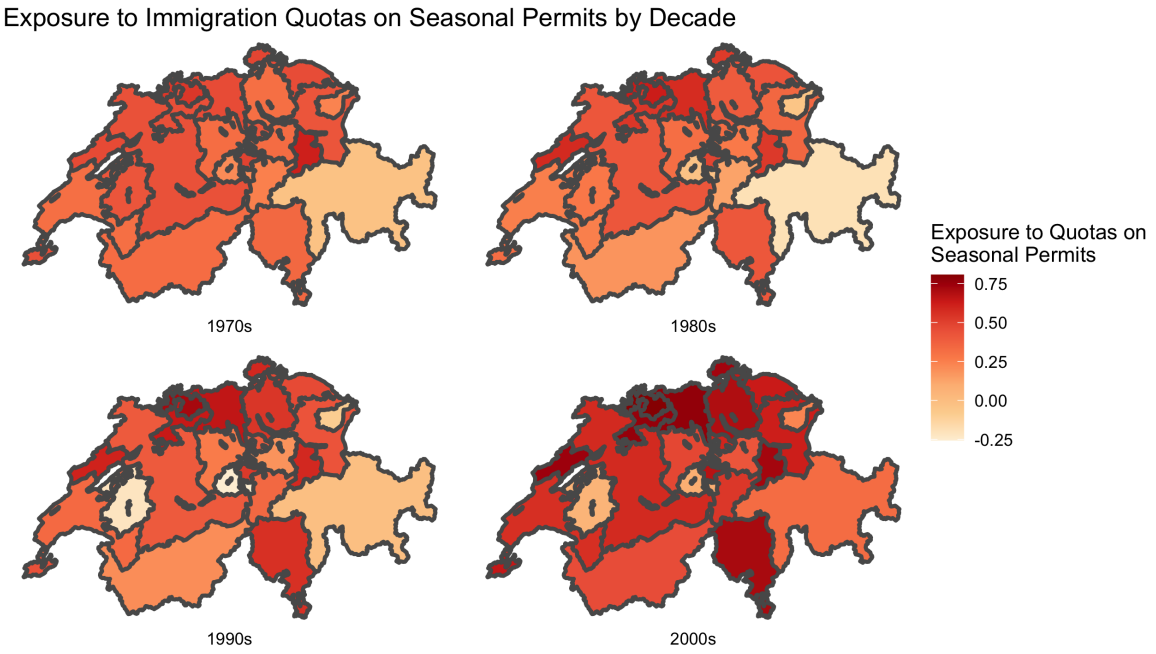

Figure 5: Exposure to Immigration Quotas on Seasonal Permits by Decade

in-difference strategy. At municipal level, I focus on two outcomes — the share of foreign residents in total population (*foreign share*) and the decennial growth rate of total population (*log population* or $\ln$ *pop*).

For foreign share, I estimate the following two-way fixed effect model:

$$\text{foreign share}_{m,c,d+10} = \delta \cdot \text{exposure}_{c,d} + X_{m,c,d}\beta + \alpha_m + \eta_d + \nu_{m,c,d} \tag{1}$$

where $\text{foreign share}_{m,d+10}$ is the share of foreign residents in total population for municipality m in canton c at the end of decade d (i.e. year $d+10$); $\text{exposure}_{c,d}$ is the exposure to immigration quota for canton c over decade d (i.e. from year d to year $d+10$); $X_{m,c,d}$ are characteristics of municipality m in canton c at the beginning of decade d (i.e. year d), including the share of protestant residents, the share of female residents, the share of children (aged 0–14), and the share of elderly residents (aged 65 and above); α_m are the municipality fixed effects; η_d are the decade fixed effects.

For population growth, a model similar to (1) is estimated:

$$\ln \text{pop}_{m,c,d+10} = \delta \cdot \text{exposure}_{c,d} + X_{m,c,d}\beta + \alpha_m + \eta_d + \nu_{m,c,d} \tag{2}$$

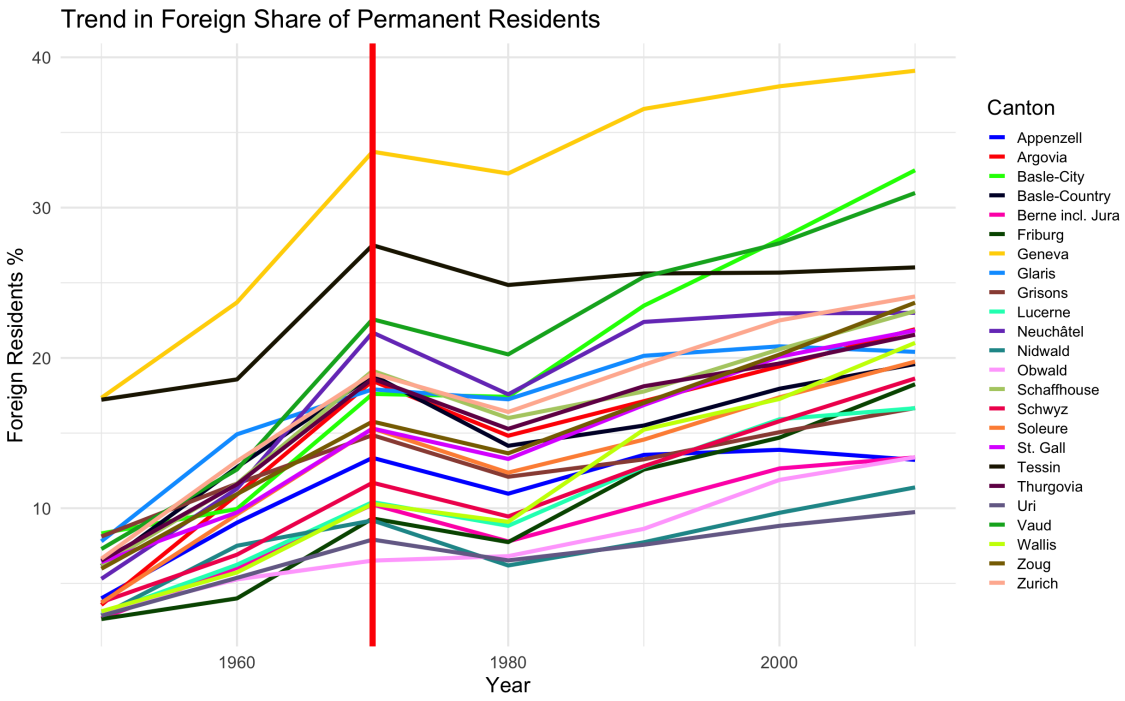

Figure 6: Trend in Foreign Share of Permanent Residents at Cantonal Level

where $\ln \text{pop}_{m,c,d+10}$ is the log-population of municipality m in canton c at the end of decade d (i.e. year $d + 10$).

Since seasonal permit holders can transfer to yearly permits after 10 consecutive years in general, for both models, I also estimate specifications where the lagged cantonal exposure to quotas on seasonal permits is included.

Figure 6 plots the trend in the foreign share of permanent residents aggregated at cantonal level. The plot shows a clear trend of increase in foreign share of population prior to 1970 across cantons, motivating the validity of common trend assumption in the difference-in-difference estimation. Similarly, Figure 7 plots the trend in log population, also aggregated at cantonal level. Log population across cantons grow parallelly prior to 1970, with the exception of three outliers—Appenzell, Glaris, and Nidwald.

At individual level, only repeated cross-section data is available. The absence of panel structure alters the individual level model as follows

$$y_{i,c,d+10} = g(\delta \cdot \text{exposure}_{c,d} + W_i\gamma + \theta_c + \eta_d + \mu_{i,c,d}) \tag{3}$$

where $y_{i,c,d+10}$ is the outcome of interest for individual i residing in canton c sampled at

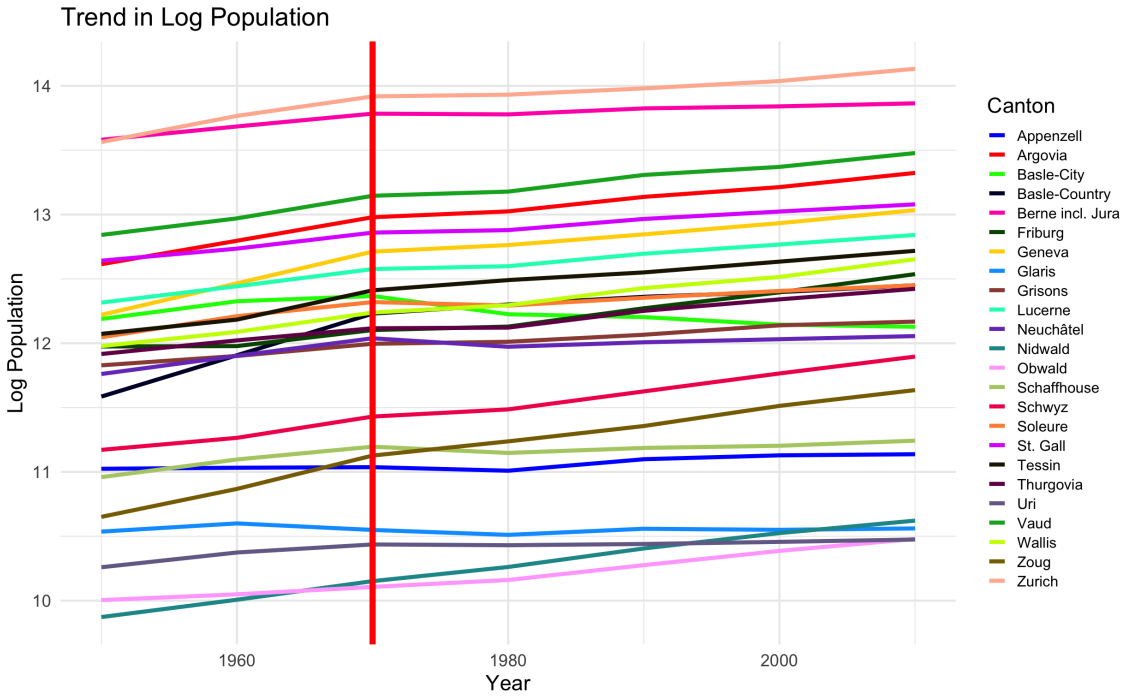

Figure 7: Trend in Log-Population at Cantonal Level

the end of decade d (i.e. year $d + 10$); exposure$_{c,d}$ is the exposure to immigration quota for canton c over decade d (i.e. from year d to year $d + 10$); W_i are characteristics of individual i, including age, gender, citizenship (Swiss or not), educational attainment, and mother tongue; θ_c is the canton fixed effect; η_d is the decade fixed effect, and $g(\cdot)$ denotes the link function.

Four typical outcomes at individual level—*unemployment*, *working part-time*, *migration across canton*, and *skill level*—are examined. *Unemployment* is a binary variable of whether the individual is unemployed. *Working part-time* is a binary variable of whether the individual works part-time, provided that the individual is employed. *Migration across canton* is a binary variable takes the value of one if the individual has migrated to the current location from a different canton within the last five years, and takes the value of zero if the individual has not move across cantonal border within the last five years. This variable is not defined for recent immigrants that have migrated from abroad within the last five years. *Skill level* is a categorical variable defined according to ISCO-88 classification (International Labour Organization 2004). Specifically, category "high skill" corresponds to ISCO-88 skill levels 3 and 4, category "medium skill" corresponds to ISCO-88 skill level 2, and category "low skill" corresponds to ISCO-88 skill level 1. However, to avoid imposing too much assumption,

especially in presence of potentially endogenous variables, a binary simplification, *low skill level*, is adopted here. It takes the value of one if the individual possesses low skills and takes the value of zero if the individual possesses medium or low skills. As these are discrete variables, I estimate both linear probability models and logit models for each outcome.

Since the Swiss federal government set the immigration quotas taking into considerations the inflow of immigrants and outflow of emigrants, the cantonal exposure to this quota system is therefore likely endogenous. To address the potential endogeneity issue, I propose an instrument variable of xenophobic attitude. As the Swiss direct democracy has been frequently voting on the issue of immigration, I can explicitly observe the attitude of the general public towards immigrants. Cantons with less xenophobic populations would tend to negotiate relatively more immigration quotas from the federal government, while cantons with more xenophobic populations would put less effort into such actions. Thus, I argue that the xenophobic attitude of a canton, measured by the share of votes supporting anti-immigration referendums, could serve as an instrument for the cantonal exposure to immigration quotas on yearly permits.

At municipal level, the Within-IV estimation is straightforward with panel data structure. At individual level, however, IV in generalized linear models raises problems. As suggested by Newey (1987), Two Stage Residual Inclusion (TSRI) with probit model generates consistent estimates. Terza et al. (2008) show that TSRI is also consistent with logit, multinomial logit, and ordered logit models. However, the standard errors of TSRI must be adjusted.

Moreover, as the treatment—exposure to immigration quotas—is at the cantonal level, errors are likely to be dependent within each canton. Colin Cameron et al. 2008 argue that wild block bootstrapping can improve inference in such scenarios, especially in cases of few clusters. In view of this, for municipal level models, wild block bootstrapping are employed instead of reporting the (corrected) robust standard errors. Specifically, 1000 repetitions of wild block bootstrapping are performed for each model. 95% confidence intervals and p-values of bootstrapped t-statistics are reported for inference. For individual level models, due to the presence of non-linear models, I opt for 1000 repetitions of pairs bootstrapping. 95% confidence intervals and p-values of bootstrapped standard errors are reported for inference.

6 Results

6.1 Municipal Level Results

Table 2 shows the effect of exposure to immigration quota on the share of foreign population. Columns (1) and (2) estimates the Within model, while column (3) and (4) address the endogeneity of exposure to quotas on yearly permits by instrumenting it with xenophobic attitudes. The Hausman test comparing (1) and (3) indicates that the exposure on yearly permits is likely endogenous. Including the lagged exposure on seasonal permits leads to a similar conclusion by the Hausman test comparing columns (2) and (4). Results from column (3) suggests that municipalities exposed to a 10 percentage-points stronger decrease in the cantonal immigration quotas experienced 2.89 percentage-points decrease in its foreign share of population over the same decade. Other variables are either statistically or economically insignificant.

Table 2: Effects on Share of Foreign Population

	Dependent variable:			
	foreign share			
	Within	Within-IV	Within	Within-IV
	(1)	(2)	(3)	(4)
exposure on yearly permits	-0.147^{***}	-0.289^{***}	-0.155^{***}	-0.586^{***}
	$(-0.180, -0.115)$	$(-0.368, -0.209)$	$(-0.189, -0.121)$	$(-0.759, -0.413)$
lagged exposure on seasonal permits			0.004	0.056^{***}
			$(-0.003, 0.012)$	$(0.036, 0.076)$
protestant share	-0.059^{***}	-0.078^{***}	-0.059^{***}	-0.105^{***}
	$(-0.075, -0.044)$	$(-0.097, -0.059)$	$(-0.075, -0.044)$	$(-0.130, -0.080)$
female share	0.015	0.0002	0.016	-0.011
	$(-0.029, 0.059)$	$(-0.045, 0.046)$	$(-0.028, 0.060)$	$(-0.056, 0.035)$
children share	-0.035^{**}	-0.015	-0.034^{**}	0.030
	$(-0.064, -0.007)$	$(-0.045, 0.014)$	$(-0.063, -0.005)$	$(-0.009, 0.068)$
elderly share	-0.038^{**}	-0.039^{**}	-0.037^{**}	-0.037^{**}
	$(-0.071, -0.005)$	$(-0.071, -0.006)$	$(-0.071, -0.004)$	$(-0.070, -0.004)$
Municipality FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Hausman Test		$\chi^2_5 = 19.575^{**}$		$\chi^2_6 = 25.569^{***}$
Observations	15,324	15,324	15,324	15,324

Note: *p<0.1; **p<0.05; ***p<0.01
Wild block bootstrapped 95% CI are reported in parentheses

Table 3 shows the effect of such exposure on the growth rate of population. Similarly, columns (1) and (2) report the Within estimation while columns (3) and (4) report the instrumented Within estimation. Again, Hausman tests comparing columns (1) with (3) and (2) with (4) stress the potential endogeneity of the exposure vari-

able. Column (3) indicates that a 10 percentage-points stronger exposure on yearly permits would reduce the population of the municipality by approximately 6.82%. The coefficients on other variables are consistent with the findings in the literature—communities with relatively higher share of women and children witness growth in population, while aging communities with high share of elderly witness shrinking in population.

Table 3: Effect on Population Growth Rate

	Dependent variable:			
	log population			
	Within	Within-IV	Within	Within-IV
	(1)	(2)	(3)	(4)
exposure on yearly permits	0.158*	−0.682***	0.131	−2.311***
	(−0.021, 0.337)	(−1.110, −0.253)	(−0.046, 0.308)	(−3.224, −1.397)
lagged exposure on seasonal permits			0.015	0.307***
			(−0.026, 0.055)	(0.192, 0.422)
protestant share	−0.108**	−0.220***	−0.108**	−0.368***
	(−0.207, −0.009)	(−0.336, −0.105)	(−0.208, −0.009)	(−0.512, −0.224)
female share	1.129***	1.040***	1.132***	0.979***
	(0.871, 1.387)	(0.779, 1.300)	(0.872, 1.392)	(0.705, 1.253)
children share	0.083	0.203**	0.088	0.449***
	(−0.073, 0.239)	(0.036, 0.369)	(−0.071, 0.246)	(0.234, 0.664)
elderly share	−3.294***	−3.300***	−3.293***	−3.289***
	(−3.507, −3.081)	(−3.515, −3.084)	(−3.506, −3.080)	(−3.508, −3.069)
Municipality FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Hausman Test		$\chi^2_5 = 27.550^{***}$		$\chi^2_6 = 32.238^{***}$
Observations	15,324	15,324	15,324	15,324

Note: *p<0.1; **p<0.05; ***p<0.01
Wild block bootstrapped 95% CI are reported in parentheses

Though the validity of instrument cannot be directly tested, the possibility of weak instrument can be ruled out through first stage partial F-test. Inference can be based on either clustered robust standard errors or data aggregated at cluster level (Bun and Haan 2010). Similar to previous estimations, wild cluster bootstrapping is adopted in lieu of asymptotic clustered robust standard errors. Since there is only one endogenous variable and one instrument, p-value of the first-stage partial F-test is equivalent to the p-value of the first stage coefficient on the instrument. As presented in Table A4, in both specifications, bootstrapped t-statistics on *xenophobic attitude* clearly reject the null hypothesis of weak instruments.

The plausible exogenous estimator proposed by Conley et al. (2012) concerns the exclusion restriction of the instrument. Kippersluis and Rietveld (2018) suggest that

the prior information about the violation of the exclusion restriction, required by the plausible exogenous method, can be inferred from the zero-first-stage test. Table 4 reports the plausible exogenous estimators based on zero-first-stage, following Kippersluis and Rietveld (2018). One subsample, where the first-stage coefficient on the instrument is zero, consist of municipalities in the low-tax cantons—Uri, Schwyz, and Lucerne. The coefficients on the instrument (*xenophobic attitude*) are insignificant across columns (3) to (6), indicating that the instrument is plausibly exogenous.

Table 4: Plausible Exogenous

	Dependent variable:					
	exposure on yearly permits		foreign share		log population	
	First stage, within		Second stage reduced form, within			
	(1)	(2)	(3)	(4)	(5)	(6)
exposure on yearly permits (fitted)			0.366		10.254***	
			(0.233)		(1.875)	
exposure on yearly permits (fitted)				0.353		10.410***
				(0.228)		(1.904)
xenophobic attitude	0.035	0.132***	0.194*	0.268**	0.391	−0.494
	(0.028)	(0.027)	(0.103)	(0.126)	(0.296)	(0.406)
lagged exposure on seasonal permits		0.140***		0.106**		−1.256***
		(0.012)		(0.052)		(0.277)
protestant share	0.067	0.058	−0.076	−0.082	2.354***	2.427***
	(0.062)	(0.059)	(0.078)	(0.077)	(0.572)	(0.564)
female share	−0.027	−0.034	0.078	0.073	1.984***	2.051***
	(0.091)	(0.087)	(0.167)	(0.165)	(0.528)	(0.529)
children share	0.099**	0.106**	0.018	0.024	−1.111***	−1.189***
	(0.049)	(0.050)	(0.062)	(0.062)	(0.399)	(0.407)
elderly share	−0.325***	−0.319***				
	(0.089)	(0.089)				
exposure on yearly permits			-0.205***	-0.469***	-0.512**	-2.525***
(plausible exogenous estimator)			(0.043)	(0.093)	(0.211)	(0.485)
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	822	822	822	822	822	822

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors (clustered at cantonal level) are reported in parentheses
Local zero in the subsample of Cantons Uri/Schwyz/Lucerne

The parallel trend assumption is the key identification assumption for difference-in-difference estimation. The aggregated cantonal plots in Figure 6 and Figure 7 seem to support this assumption. I further estimate a flexible model allowing the coefficient on exposure to change across decade. In order to have non-zero coefficient for exposure prior to 1970, a linear transformation is applied to transform exposure into the standardized quota with respect to 1960s level. Namely, standardized quota equals

one minus exposure. Formally, I estimate the following one-way fixed effect models

$$\text{foreign share}_{m,c,d+10} = \text{exposure}_{c,d} I^d \delta_d + X_{m,c,d}\beta + \alpha_m + \nu_{m,c,d} \tag{4}$$

$$\ln \text{pop}_{m,c,d+10} = \text{exposure}_{c,d} I^d \delta_d + X_{m,c,d}\beta + \alpha_m + \nu_{m,c,d} \tag{5}$$

The parallel trend assumption would mean that the flexible coefficient on standardized quota for decades 1950s δ_{1950} and 1960s δ_{1960} should be approximately the same (namely the pre-exposure value). Table 5 presents the results of such falsification tests. δ_{1950} and δ_{1960} are similar in magnitude across all four columns are also relatively small comparing to δ_{1970} through δ_{2000}. Thus, the parallel trend assumption is likely satisfied.

Note that the recent literature in diff-in-diff and two-way fixed effects raise the problem of bias due to difference in treatment timing (see, for instance, Goodman-Bacon (2021), Callaway and Sant'Anna (2021), and Wooldridge (2021)). However, the recent advance in literature focuses on binary treatment/exposure variable, where in this study the exposure variable is continuous. Thus, though aware of the potential bias, no econometric solution is available yet to address the issue.

Following similar estimation method of the falsify test, I further investigate the heterogeneity of the effect of exposure to immigration quotas across different dimensions. Namely, I estimate flexible δ interacted with dimension variables *border region*, *major language*, and *urban type*.

Cross-border commuter may be of concern as border municipalities may experience less shock due to the availability of cross-border commuters. Table A6 shows that the effect does not differ between border municipalities and non-border municipalities.

The major language of the municipality, representing the culture and attitudes of the general public, does not show influence in the heterogeneity in the effects of immigration quotas, as reported in Table A7. Though the French-speaking municipalities are in general slightly less negatively affected by the quota restrictions than German-, Italian- or Romansh-speaking municipalities.

Urbanism does not seem to induce heterogeneity in the effects of immigration quotas either. Rural municipalities are slightly less affected, but the difference is neither statistically nor economically significant, as shown in Table A8

Table 5: Falsification Test on Parallel Trends

	Dependent variable:			
	foreign share		log population	
	(1)	(2)	(3)	(4)
standardized yearly quota : decade1950	−0.032***	0.097*	−0.604***	−1.641***
	(−0.044, −0.020)	(−0.009, 0.203)	(−0.665, −0.543)	(−2.863, −0.419)
standardized yearly quota : decade1960	−0.0003	0.124***	−0.488***	−1.484***
	(−0.012, 0.012)	(0.022, 0.227)	(−0.547, −0.428)	(−2.661, −0.306)
standardized yearly quota : decade1970	−0.208***	3.568***	−3.810***	−32.149
	(−0.320, −0.096)	(0.576, 6.561)	(−4.381, −3.238)	(−68.360, 4.062)
standardized yearly quota : decade1980	−0.019	6.207***	−3.296***	−49.961**
	(−0.191, 0.153)	(1.710, 10.703)	(−4.197, −2.395)	(−97.318, −2.603)
standardized yearly quota : decade1990	0.066	0.652**	−1.078***	−1.687
	(−0.028, 0.161)	(0.042, 1.262)	(−1.571, −0.584)	(−8.184, 4.809)
standardized yearly quota : decade2000	0.200***	2.275**	−0.231	−26.599**
	(0.115, 0.286)	(0.201, 4.350)	(−0.677, 0.214)	(−52.835, −0.364)
lagged standardized seasonal quota : decade1970		−0.262***		1.908
		(−0.609, 0.085)		(−2.376, 6.192)
lagged standardized seasonal quota : decade1980		−0.431***		3.121**
		(−0.907, 0.044)		(−1.915, 8.157)
lagged standardized seasonal quota : decade1990		0.105*		−1.549***
		(−0.064, 0.273)		(−3.350, 0.252)
lagged standardized seasonal quota : decade2000		−0.200		3.566**
		(−0.660, 0.259)		(−2.165, 9.296)
protestant share	−0.066***	−0.213***	−0.108*	1.463
	(−0.086, −0.046)	(−0.354, −0.072)	(−0.226, 0.011)	(−0.267, 3.192)
female share	0.013	−0.090	1.155***	1.949***
	(−0.031, 0.058)	(−0.202, 0.023)	(0.895, 1.415)	(0.803, 3.095)
children share	−0.047***	0.238*	−0.084	−2.548
	(−0.076, −0.018)	(−0.001, 0.478)	(−0.250, 0.082)	(−5.426, 0.330)
elderly share	−0.043***	−0.051*	−3.333***	−2.852***
	(−0.076, −0.009)	(−0.109, 0.008)	(−3.557, −3.110)	(−3.409, −2.294)
Municipal FE	Yes	Yes	Yes	Yes
Observations	15,324	15,324	15,324	15,324

Note: *p<0.1; **p<0.05; ***p<0.01
Wild block bootstrapped 95% CI are reported in parentheses

The final robustness tests concern the sensitivity of sample selection. I construct three sub-samples and re-estimate the base models with these three sub-samples to verify that the estimation results are not driven by particular municipalities or cantons. The three sub-samples proposed are as follows.

metro Excluding municipalities in the largest metropolitan areas—Agglomerations Zurich, Geneva, Lausanne, Basle and Berne.

border Excluding municipalities in the cross-border metropolitan areas—Cantons Geneva, Basle-City, and Basle-Country.

outlier Excluding municipalities in seemingly outlier cantons suggested by Figure 6 and Figure 7—Cantons Appenzell, Glaris, and Nidwald.

Table A14 and Table A15 show the estimation results of all these three sub-samples, along with the full sample. Estimated coefficients are not sensitive to the choice of sub-samples.

6.2 Individual Level Results

Table 6 shows the effect of cantonal exposure to immigration quotas on the probability of individual residents being unemployed. None of the models conclude a statistically significant effect of exposure to immigration quota restrictions on the unemployment rate, regardless of the potential endogeneity of the exposure variable. Therefore, restricting immigrants likely had no effect on unemployment rate of native workers. If anything, individuals in cantons facing stricter quota restrictions may indeed experience slightly higher probability of unemployment, as suggested by Column 1 (OLS), assuming exposure to quota restriction is not endogenous.

Table 7 shows the effect of immigration quotas restrictions on the probability of individual working part-time provided being employed. Similar to the case of unemployment, the effect of exposure to immigration quota reduction had minimal effect of pushing native workers into working part-time. The (non-)effect is also weaker than on the unemployment.

Table 8 shows that the probability of individual moving into current canton from another one within the last five years decreases with the cantonal exposure to immigration quotas. This implies that the restriction on immigrants may have negative

	Dependent variable: unemploy			
	OLS	IV	Logit	Logit-IV
exposure on yearly permits	0.041*	0.005	0.790	−5.423
	[0.007; 0.074]	[−0.130; 0.139]	[−1.201; 2.781]	[−13.554; 2.708]
age	−0.001*	−0.001*	−0.055*	−0.055*
	[−0.001; −0.001]	[−0.001; −0.001]	[−0.068; −0.041]	[−0.069; −0.042]
age^2	0.000*	0.000*	0.000*	0.000*
	[0.000; 0.000]	[0.000; 0.000]	[0.000; 0.001]	[0.000; 0.001]
female	0.007*	0.006*	0.391*	0.389*
	[0.005; 0.008]	[0.005; 0.008]	[0.321; 0.461]	[0.318; 0.461]
swiss citizen	−0.012*	−0.012*	−0.464*	−0.461*
	[−0.015; −0.010]	[−0.015; −0.010]	[−0.554; −0.374]	[−0.552; −0.370]
education level: mandatory	−0.036*	−0.036*	−0.624*	−0.622*
	[−0.045; −0.027]	[−0.045; −0.027]	[−0.779; −0.468]	[−0.778; −0.466]
education level: vocational	−0.040*	−0.040*	−0.835*	−0.842*
	[−0.049; −0.031]	[−0.049; −0.031]	[−1.011; −0.659]	[−1.017; −0.667]
education level: general	−0.036*	−0.036*	−0.606*	−0.608*
	[−0.046; −0.026]	[−0.046; −0.026]	[−0.805; −0.407]	[−0.806; −0.410]
education level: higher professional	−0.044*	−0.044*	−1.043*	−1.046*
	[−0.053; −0.035]	[−0.053; −0.035]	[−1.263; −0.823]	[−1.266; −0.827]
education level: university	−0.039*	−0.039*	−0.757*	−0.753*
	[−0.048; −0.031]	[−0.048; −0.031]	[−0.911; −0.603]	[−0.910; −0.597]
mother tongue: French	−0.009*	−0.009*	−0.228*	−0.224*
	[−0.013; −0.005]	[−0.013; −0.005]	[−0.333; −0.123]	[−0.331; −0.116]
mother tongue: German	−0.015*	−0.015*	−0.579*	−0.578*
	[−0.018; −0.012]	[−0.018; −0.012]	[−0.667; −0.491]	[−0.666; −0.491]
mother tongue: Italian	−0.024*	−0.024*	−0.775*	−0.783*
	[−0.028; −0.021]	[−0.028; −0.021]	[−0.918; −0.632]	[−0.920; −0.645]
Canton FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Num. obs.	652549	652549	652549	652549

Pairs cluster bootstrapped 95% CI are reported in brackets

Table 6: Effect on Unemployment

	Dependent variable: part time			
	OLS	IV	Logit	Logit-IV
exposure on yearly permits	0.033	0.062	0.251	0.297
	[−0.091; 0.157]	[−0.286; 0.411]	[−0.853; 1.356]	[−2.374; 2.967]
age	0.010*	0.010*	0.092*	0.092*
	[0.008; 0.011]	[0.008; 0.011]	[0.078; 0.107]	[0.078; 0.107]
age^2	−0.000*	−0.000*	−0.000*	−0.000*
	[−0.000; −0.000]	[−0.000; −0.000]	[−0.001; −0.000]	[−0.001; −0.000]
female	0.340*	0.340*	2.692*	2.692*
	[0.326; 0.355]	[0.326; 0.355]	[2.557; 2.828]	[2.557; 2.828]
swiss citizen	0.065*	0.065*	0.609*	0.609*
	[0.058; 0.073]	[0.058; 0.073]	[0.534; 0.683]	[0.535; 0.683]
education level: mandatory	0.010	0.010	0.002	0.001
	[−0.001; 0.020]	[−0.001; 0.020]	[−0.080; 0.083]	[−0.080; 0.083]
education level: vocational	−0.005	−0.005	−0.072	−0.072
	[−0.018; 0.008]	[−0.018; 0.008]	[−0.179; 0.035]	[−0.178; 0.035]
education level: general	0.045*	0.045*	0.315*	0.315*
	[0.026; 0.064]	[0.026; 0.064]	[0.178; 0.453]	[0.178; 0.453]
education level: higher professional	−0.031*	−0.031*	−0.222*	−0.222*
	[−0.045; −0.018]	[−0.045; −0.018]	[−0.339; −0.105]	[−0.339; −0.106]
education level: university	0.017*	0.017*	0.248*	0.248*
	[0.001; 0.033]	[0.001; 0.033]	[0.100; 0.397]	[0.099; 0.397]
mother tongue: French	0.001	0.001	0.039	0.039
	[−0.011; 0.013]	[−0.011; 0.013]	[−0.062; 0.140]	[−0.062; 0.140]
mother tongue: German	0.003	0.003	0.074*	0.074*
	[−0.004; 0.011]	[−0.004; 0.011]	[0.013; 0.135]	[0.013; 0.135]
mother tongue: Italian	0.007*	0.007*	−0.003	−0.003
	[0.001; 0.013]	[0.001; 0.013]	[−0.068; 0.062]	[−0.068; 0.063]
Canton FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Num. obs.	637356	637356	637356	637356

Pairs cluster bootstrapped 95% CI are reported in brackets

Table 7: Effect on Working Part-time

externalities. Namely, cantons experiencing greater shocks on immigration inflows also witnesses stronger reductions of domestic migration. International immigration is to some degree complimentary to inter-cantonal migration. A typical explanation is that international immigrants not only increase labor supply but also increase labor demand as they themselves are consumers.

	Dependent variable: move canton			
	OLS	IV	Logit	Logit-IV
exposure on yearly permits	-0.100^*	-0.048	-1.254^*	-1.002
	$[-0.176; -0.025]$	$[-0.321; 0.224]$	$[-2.351; -0.157]$	$[-5.093; 3.089]$
age	-0.002^*	-0.002^*	-0.045^*	-0.045^*
	$[-0.003; -0.002]$	$[-0.003; -0.002]$	$[-0.052; -0.037]$	$[-0.052; -0.037]$
female	0.031^*	0.031^*	0.418^*	0.418^*
	$[0.019; 0.043]$	$[0.019; 0.043]$	$[0.305; 0.530]$	$[0.305; 0.530]$
age $times$ female	-0.000^*	-0.000^*	-0.005^*	-0.005^*
	$[-0.001; -0.000]$	$[-0.001; -0.000]$	$[-0.007; -0.003]$	$[-0.007; -0.003]$
swiss citizen	0.006	0.006	0.032	0.032
	$[-0.016; 0.027]$	$[-0.016; 0.027]$	$[-0.286; 0.349]$	$[-0.285; 0.349]$
education level: mandatory	0.012^*	0.012^*	0.422^*	0.421^*
	$[0.006; 0.019]$	$[0.006; 0.019]$	$[0.275; 0.568]$	$[0.276; 0.567]$
education level: vocational	0.031^*	0.031^*	0.863^*	0.863^*
	$[0.021; 0.040]$	$[0.021; 0.040]$	$[0.715; 1.011]$	$[0.714; 1.012]$
education level: general	0.062^*	0.062^*	1.206^*	1.206^*
	$[0.047; 0.076]$	$[0.047; 0.076]$	$[1.019; 1.393]$	$[1.020; 1.392]$
education level: higher professional	0.062^*	0.062^*	1.355^*	1.355^*
	$[0.051; 0.074]$	$[0.051; 0.074]$	$[1.205; 1.506]$	$[1.205; 1.505]$
education level: university	0.093^*	0.093^*	1.724^*	1.724^*
	$[0.074; 0.112]$	$[0.074; 0.112]$	$[1.560; 1.888]$	$[1.561; 1.886]$
mother tongue: French	-0.009	-0.009	-0.278	-0.278
	$[-0.044; 0.026]$	$[-0.044; 0.026]$	$[-0.882; 0.326]$	$[-0.882; 0.326]$
mother tongue: German	0.014	0.014	0.114	0.114
	$[-0.017; 0.044]$	$[-0.017; 0.044]$	$[-0.367; 0.595]$	$[-0.366; 0.594]$
mother tongue: Italian	-0.024	-0.024	-0.577	-0.577
	$[-0.054; 0.006]$	$[-0.054; 0.007]$	$[-1.344; 0.189]$	$[-1.345; 0.191]$
Canton FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Num. obs.	937301	937301	937301	937301

Pairs cluster bootstrapped 95% CI are reported in brackets

Table 8: Effect on Migration across Canton

Table 9 shows the effect of the exposure to restriction in immigration quotas on the probability of individual possessing low skill levels. Hausman test suggests high possibility of endogeneity when skill levels are evaluated as dependent variables. Reduction in immigration indeed hurts the average skill level of native workers, as evidenced by Column 4 (Logit-IV). Native workers are more likely to be low skill workers in cantons relatively more exposed to the tightening migration restrictions. In other words, immigrants push native workers that would otherwise settle with low skills to motivate themselves to attain higher skills, and the decrease in the competition from immigrants demotivated native workers from pursing relative higher skills, and as a consequence, forfeiting their chance of getting higher wages and social status.

Following the municipal level estimation, test of weak instruments at individual

	Dependent variable: low skill			
	OLS	IV	Logit	Logit-IV
exposure on yearly permits	−0.024	0.663	−0.228	10.418*
	[−0.092; 0.045]	[−0.339; 1.665]	[−1.127; 0.671]	[0.586; 20.250]
age	−0.003*	−0.003*	−0.033*	−0.032*
	[−0.004; −0.002]	[−0.004; −0.002]	[−0.047; −0.019]	[−0.046; −0.018]
age^2	0.000*	0.000*	0.001*	0.001*
	[0.000; 0.000]	[0.000; 0.000]	[0.000; 0.001]	[0.000; 0.001]
female	0.043*	0.043*	0.551*	0.551*
	[0.038; 0.047]	[0.038; 0.047]	[0.495; 0.606]	[0.496; 0.607]
swiss citizen	−0.049*	−0.049*	−0.532*	−0.536*
	[−0.059; −0.039]	[−0.059; −0.039]	[−0.607; −0.457]	[−0.611; −0.461]
mother tongue: French	−0.094*	−0.094*	−0.856*	−0.853*
	[−0.107; −0.082]	[−0.107; −0.081]	[−0.928; −0.784]	[−0.924; −0.783]
mother tongue: German	−0.099*	−0.099*	−0.903*	−0.903*
	[−0.112; −0.086]	[−0.112; −0.086]	[−0.970; −0.836]	[−0.971; −0.835]
mother tongue: Italian	0.009	0.010	0.113	0.121
	[−0.015; 0.033]	[−0.014; 0.034]	[−0.032; 0.258]	[−0.023; 0.266]
Canton FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Num. obs.	559934	559934	559934	559934

Pairs cluster bootstrapped 95% CI are reported in brackets

Table 9: Effect on Skill Level

level is presented in Table A5. Again, the percentile confidence intervals obtained from bootstrapping suggest p-values small enough to rejects the null hypothesis of weak instruments in all models.

I then look into the heterogeneity in effects across the following dimensions—the industry that the individual works in, the educational attainment that the individual obtained, the labor market region that the individual resides in, whether the individual belongs to the youth group (aged 15–24), and the immigration background of the individual.

In the dimension of industry, restricting immigration re-enforces the skill endowment associated with the industry, as shown in Column 3 (low skill) of Table A10. Agriculture and mining industry, originally already associated with lower skilled labor, is more likely to hire lower skilled workers in cantons facing more restrictions of immigration. Similarly, in the dimension of educational attainment, individuals less educated, already possessing lower skill sets, are less likely to learn more skills in cantons with higher reduction in immigration, as shown in Column 3 (low skill) of Table A9. These again prove that immigrants push native workers to purse more skill sets and restricting immigration indeed hurts the endowment of native workers.

The immigration quota system imposes negative effect not only on native workers, but also on immigrants. Column 3 (low skill) of Table A13 indicates that restrictions on immigration have larger negative effect on the skill level of recent immigrants than

earlier immigrants, while much smaller on native workers. This means that restricting immigrants by quantity does not select higher skilled immigrants by default, but rather fill the lower skilled jobs by immigrants first, at least in the Swiss case.

7 Conclusions

This paper uses a difference-in-difference strategy to estimate the effect of the Swiss immigration quota system between 1970 and 2002. An instrument variable of xenophobic attitude as measured by votes supporting anti-immigration referendums is proposed to tackle the potential endogeneity of this immigration policy.

The municipal level data suggests that such quota system did fulfill its original objective to dampen growth of foreign population. However, individual level data rejects the idea that it benefited the native workers as it did not lower unemployment. On the opposite, it disincentivized native workers to improve their skills by reducing competition and consequently lowered the wages of native worker. Additionally, the quota system selected lower skilled immigrants in general and hurt the average productivity of Swiss economy as a result.

There are several constraints with this paper. To name a few, the individual level data does not come with a panel structure, which may give rise to bias from unobservable individual characteristics. Potentially, a pseudo panel strategy could be applied to address the issue, and could be an extension to this paper (Verbeek 1996).

Also, the outcomes investigated in the paper is limited. Data availability is one of the reasons. Potentially, larger samples of the census could provide more insights into the issue. For instance, the nationality of individuals could play a role but currently the sample size is too small for most non-Swiss nationals to make any relevant statistically estimation. Also, in combine with other datasets, including the wage information, could enable more quantitative estimation for the effect of immigration quota system.

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A Appendix

A.1 List of Cantons in Switzerland

	Code	Name in Official Language(s)	Name in English	Harmonized Canton
1	ZH	Zürich	Zurich	Zurich (ZH)
2	BE	Bern/Berne	Berne	**Berne incl. Jura** (BEJU)
3	LU	Luzern	Lucerne	Lucerne (LU)
4	UR	Uri	Uri	Uri (UR)
5	SZ	Schwyz	Schwyz	Schwyz (SZ)
6	OW	Obwalden	Obwald	Obwald (OB)
7	NW	Nidwalden	Nidwald	Nidwald (NI)
8	GL	Glarus	Glaris	Glaris (GL)
9	ZG	Zug	Zoug	Zoug (ZG)
10	FR	Fribourg/Freiburg	Friburg	Friburg (FR)
11	SO	Solothurn	Soleure	Soleure (SO)
12	BS	Basel-Stadt	Basle-City	Basle-City (BS)
13	BL	Basel-Landschaft	Basle-Country	Basle-Country (BL)
14	SH	Schaffhausen	Schaffhouse	Schaffhouse (SH)
15	AR	Appenzell Ausserrhoden	Appenzell Outer-Rhodes	**Appenzell** (ARAI)
16	AI	Appenzell Innerrhoden	Appenzell Inner-Rhodes	**Appenzell** (ARAI)
17	SG	St. Gallen	St. Gall	St. Gall (SG)
18	GR	Graubünden/Grischun/Grigioni	Grisons	Grisons (GR)
19	AG	Aargau	Argovia	Argovia (AG)
20	TG	Thurgau	Thurgovia	Thurgovia (TG)
21	TI	Ticino	Tessin	Tessin (TI)
22	VD	Vaud	Vaud	Vaud (VD)
23	VS	Valais/Wallis	Wallis	Wallis (VS)
24	NE	Neuchâtel	Neuchâtel	Neuchâtel (NE)
25	GE	Genève	Geneva	Geneva (GE)
26	JU	Jura	Jura	**Berne incl. Jura** (BEJU)

Table A1: List of Cantons in Switzerland

A.2 Contents of the Four Referendums on Immigration

1970s The referendum representing 1970s is the 1970 "Initiative against Foreign Dominance", first launched in May 1968. The main content of this popular initiative was to revise the Swiss constitution to set an upper limit of immigrants in each canton. Specifically, the initiative demanded the Federal Council, the highest executive authority of the Confederation, to reduce the number of foreigners to less than 10% of the number of Swiss citizens in each canton, except for the Canton of Geneva where the limit was set to 25%. The initiative defined the scope of foreigners to exclude seasonal workers, cross-border commuters, university students, tourists, officials of international organizations, members of diplomatic and consular missions, qualified scientists and artists, retirees, the sick and those in need of recreation, nursing and hospital staff, staff of international charitable and church organizations. This initiative was rejected in the referendum on 7 June 1970, with 46% for and 54% against (Swiss Federal Chancellery 1970).

1980s The referendum representing 1980s is the 1977 "Fourth Initiative against Foreign Dominance", first launched in June 1972. The initiative also aimed at the upper limit of foreign population as the 1970 referendum. This time, the limit was set to 12.5% of the population of Swiss citizens. Furthermore, it demanded the federal government to stop issuing new residence permits once the limit was reached. It was finally put to vote on 13 March 1977 and was rejected, with 29.5% for and 70.5% against (Swiss Federal Chancellery 1977).

1990s The referendum representing 1990s is the 1988 "Initiative for the Limitation of Immigration", first launched in 11 October 1983. The initiative aimed at reducing the foreign population—the number of newly issued yearly permits, including conversion from seasonal permits, must not exceed the number of emigrants during the previous year. Moreover, it demanded that the number of newly issued yearly permits should not exceed two thirds of the emigrants during the previous year, once the total Swiss population exceeded 6.2 million. Additionally, it put caps on the numbers of seasonal workers and cross-border commuters—100,000 and 90,000, respectively. The initiative was voted on 4 December 1988, and was defeated with 32.7% for and 67.3% against

(Swiss Federal Chancellery 1988).

2000s The referendum representing 2000s is the 2000 "Initiative for a Regulation of Immigration", first launched in 1 March 1994. This initiative took the same approach as the 1977 initiative, demanding the number of foreign population to be less than 18% of the total population of Switzerland. It also demanded a prohibition on offering financial incentives to asylum seekers and foreigners admitted on humanitarian reasons. The initiative was voted on 24 September 2000, and was also defeated with 38.2% for and 63.8% against (Swiss Federal Chancellery 2000).

A.3 Descriptive Statistics

	1950	1960	1970	1980	1990	2000	2010
Observations	2554	2554	2554	2554	2554	2554	2554
Foreign share	0.061	0.108	0.172	0.149	0.181	0.205	0.225
	(0.050)	(0.063)	(0.088)	(0.085)	(0.097)	(0.105)	(0.109)
Protestant share	0.564	0.528	0.478	0.444	0.400	0.353	N/A
	(0.318)	(0.289)	(0.261)	(0.246)	(0.227)	(0.207)	
German speaker share	0.720	0.693	0.649	0.650	0.636	0.636	N/A
	(0.374)	(0.353)	(0.344)	(0.350)	(0.361)	(0.370)	
Female share	0.518	0.509	0.507	0.511	0.507	0.511	0.507
	(0.029)	(0.028)	(0.024)	(0.023)	(0.019)	(0.015)	(0.013)
Children share	0.235	0.235	0.234	0.192	0.169	0.171	0.151
	(0.054)	(0.055)	(0.054)	(0.045)	(0.038)	(0.033)	(0.023)
Elderly share	0.096	0.102	0.114	0.139	0.144	0.154	0.169
	(0.022)	(0.024)	(0.033)	(0.042)	(0.040)	(0.035)	(0.031)
Border region	0.686	0.702	0.706	0.697	0.688	0.682	0.682
	(0.464)	(0.457)	(0.455)	(0.460)	(0.463)	(0.466)	(0.466)
Urbanism							
– Core city of	0.289	0.313	0.307	0.285	0.303	0.294	0.284
an agglomeration	(0.453)	(0.464)	(0.461)	(0.452)	(0.459)	(0.455)	(0.451)
– Other municipality of	0.081	0.142	0.215	0.294	0.373	0.433	0.444
agglomeration	(0.273)	(0.349)	(0.410)	(0.456)	(0.484)	(0.495)	(0.497)
– Isolated city	0.079	0.060	0.058	0.038	0.016	0.009	0.009
	(0.269)	(0.238)	(0.233)	(0.192)	(0.125)	(0.093)	(0.093)
– Rural municipality	0.551	0.484	0.421	0.382	0.308	0.265	0.263
	(0.497)	(0.500)	(0.494)	(0.486)	(0.462)	(0.441)	(0.440)

The numbers reported (except for observations) are mean values over all harmonized municipalities, with standard errors in parenthesis, both weighted by the total population of the municipality.

Table A2: Descriptive Statistics of Municipal Level Data

	1970	1980	1990	2000
Observations	239497	256894	284931	302228
Age	42.493	43.390	44.112	45.689
	(18.320)	(18.903)	(18.860)	(18.748)
Female	0.512	0.517	0.511	0.515
	(0.500)	(0.500)	(0.500)	(0.500)
Mother tongue				
– German	0.641	0.653	0.636	0.640

	(0.480)	(0.476)	(0.481)	(0.480)
– French	0.181	0.182	0.189	0.198
	(0.385)	(0.386)	(0.391)	(0.399)
– Italian	0.122	0.095	0.080	0.067
	(0.327)	(0.293)	(0.271)	(0.251)
– Rhaeto-Romanic	0.008	0.008	0.006	0.005
	(0.092)	(0.090)	(0.074)	(0.070)
Educational attainment				
– None	0.004	0.006	0.012	0.046
	(0.065)	(0.080)	(0.110)	(0.210)
– Mandatory schooling and	0.489	0.431	0.348	0.281
prepatory schools	(0.500)	(0.495)	(0.476)	(0.449)
– Vocational (trade	0.353	0.380	0.457	0.402
schools, apprenticeship)	(0.478)	(0.485)	(0.498)	(0.490)
– General (matura schools,	0.085	0.087	0.059	0.087
teacher training school)	(0.279)	(0.282)	(0.235)	(0.282)
– Higher professional school	0.042	0.055	0.076	0.100
	(0.200)	(0.227)	(0.265)	(0.300)
– University	0.027	0.042	0.048	0.083
	(0.162)	(0.200)	(0.214)	(0.277)
Employment				
– Employed	0.623	0.597	0.626	0.628
	(0.485)	(0.490)	(0.484)	(0.483)
– Unemployed	0.001	0.005	0.013	0.025
	(0.033)	(0.070)	(0.114)	(0.157)
– Housework	0.203	0.157	0.111	0.142
	(0.402)	(0.364)	(0.314)	(0.349)
– In school	0.044	0.060	0.052	0.052
	(0.206)	(0.238)	(0.221)	(0.222)
– Retired	0.120	0.173	0.192	0.108
	(0.325)	(0.379)	(0.394)	(0.310)
– Inactive	0.008	0.007	0.006	0.045
	(0.091)	(0.084)	(0.078)	(0.207)
Working part-time	0.122	0.145	0.189	0.260
	(0.328)	(0.352)	(0.391)	(0.439)
Occupational skill				
– High	0.099	0.143	0.175	0.258
	(0.299)	(0.350)	(0.380)	(0.438)
– Medium	0.823	0.793	0.653	0.700

	(0.381)	(0.405)	(0.476)	(0.458)
– Low	0.078	0.064	0.172	0.042
	(0.267)	(0.246)	(0.378)	(0.200)
Industry				
– Agriculture & mining	0.078	0.064	0.042	0.039
	(0.268)	(0.244)	(0.202)	(0.193)
– Construction	0.081	0.058	0.050	0.034
	(0.273)	(0.234)	(0.219)	(0.181)
– Manufacturing	0.384	0.326	0.258	0.221
	(0.486)	(0.469)	(0.438)	(0.415)
– Hospitality	0.044	0.049	0.047	0.054
	(0.204)	(0.216)	(0.211)	(0.227)
– Skilled service	0.129	0.179	0.220	0.250
	(0.336)	(0.383)	(0.414)	(0.433)
– Other service	0.284	0.325	0.383	0.402
	(0.451)	(0.468)	(0.486)	(0.490)
Nationality				
– Switzerland	0.832	0.854	0.820	0.802
	(0.374)	(0.353)	(0.384)	(0.398)
– Italy	0.091	0.062	0.057	0.046
	(0.287)	(0.241)	(0.231)	(0.210)
– Yugoslavia	0.004	0.010	0.024	0.041
	(0.067)	(0.100)	(0.152)	(0.199)
– Spain	0.021	0.017	0.018	0.012
	(0.144)	(0.130)	(0.132)	(0.109)
– Germany	0.018	0.014	0.014	0.017
	(0.132)	(0.119)	(0.117)	(0.129)
– Malta	0.001	0.003	0.015	0.017
	(0.024)	(0.057)	(0.123)	(0.131)
– France	0.009	0.008	0.008	0.009
	(0.092)	(0.086)	(0.090)	(0.095)
– Turkey	0.002	0.005	0.010	0.010
	(0.044)	(0.072)	(0.100)	(0.101)
– Austria	0.006	0.005	0.005	0.005
	(0.078)	(0.073)	(0.068)	(0.069)
Born in Switzerland	0.788	0.806	0.763	0.719
	(0.409)	(0.395)	(0.425)	(0.450)
Migration status				
– Same canton, same municipality	0.740	0.769	0.761	0.761

	(0.438)	(0.421)	(0.427)	(0.426)
– Same canton, different municipality	0.111	0.122	0.119	0.136
	(0.314)	(0.327)	(0.324)	(0.343)
– Different canton	0.085	0.072	0.064	0.061
	(0.279)	(0.258)	(0.245)	(0.239)
– Abroad	0.064	0.037	0.056	0.042
	(0.244)	(0.189)	(0.230)	(0.201)

The numbers reported are mean values over all individuals, with standard errors in parenthesis.

Table A3: Descriptive Statistics of Individual Level Data

A.4 Test for Weak Instrument

Table A4: Test for Weak Instruments (Municipal Level Models)

	Dependent variable:	
	exposure on yearly permits Within	
	(1)	(2)
xenophobic attitude	0.220***	0.175**
	(0.071)	(0.074)
lagged exposure on seasonal permits		0.056*
		(0.031)
protestant share	−0.307*	−0.203
	(0.154)	(0.161)
female share	−1.168	−0.719
	(1.195)	(1.199)
children share	0.374	0.563
	(0.524)	(0.525)
elderly share	0.219	−0.119
	(0.478)	(0.505)
Canton FE	Yes	Yes
Decade FE	Yes	Yes
Partial F-stat (xenophobic=0)	9.529** (df = 1; 64)	5.568* (df = 1; 63)
Observations	96	96
Note:		*p<0.1; **p<0.05; ***p<0.01

	Dependent variable: exposure on yearly permits			
	unemploy	part time	move canton	low skill
xenophobic attitude	0.212*	0.207*	0.211*	0.173*
	[0.051; 0.373]	[0.047; 0.368]	[0.048; 0.373]	[0.021; 0.325]
age	−0.000	−0.000	−0.000	−0.000
	[−0.000; 0.000]	[−0.000; 0.000]	[−0.000; 0.000]	[−0.000; 0.000]
age^2	0.000	0.000		0.000
	[−0.000; 0.000]	[−0.000; 0.000]		[−0.000; 0.000]
female	−0.000	−0.000	0.000	−0.000
	[−0.000; 0.000]	[−0.000; 0.000]	[−0.000; 0.000]	[−0.000; 0.000]
age × female			−0.000	
			[−0.000; 0.000]	
swiss citizen	0.000	0.000	−0.000	0.000
	[−0.000; 0.001]	[−0.000; 0.001]	[−0.000; 0.000]	[−0.000; 0.001]
education level: mandatory	−0.000	0.000	0.000	
	[−0.001; 0.001]	[−0.001; 0.001]	[−0.000; 0.001]	
education level: vocational	−0.001*	−0.001*	−0.000	
	[−0.002; −0.000]	[−0.002; −0.000]	[−0.001; 0.000]	
education level: general	−0.001	−0.000	0.000	
	[−0.001; 0.000]	[−0.001; 0.000]	[−0.001; 0.001]	
education level: higher professional	−0.001	−0.001	0.000	
	[−0.002; 0.000]	[−0.001; 0.000]	[−0.000; 0.001]	
education level: university	0.000	0.000	0.001	
	[−0.001; 0.001]	[−0.001; 0.001]	[−0.000; 0.002]	
mother tongue: French	0.000	0.000	−0.000	−0.000
	[−0.001; 0.002]	[−0.001; 0.002]	[−0.001; 0.001]	[−0.001; 0.001]
mother tongue: German	0.000	0.000	−0.000	−0.000
	[−0.000; 0.001]	[−0.000; 0.001]	[−0.001; 0.000]	[−0.001; 0.000]
mother tongue: Italian	−0.001*	−0.001*	−0.001*	−0.001*
	[−0.002; −0.000]	[−0.002; −0.000]	[−0.002; −0.001]	[−0.002; −0.000]
Canton FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Num. obs.	652549	637356	937301	559934

Pairs cluster bootstrapped 95% CI are reported in brackets

Table A5: Test for Weak Instrument (Individual Level Models)

A.5 Municipal Level Heterogeneity

Table A6: Heterogeneity in Effects by Border Region

	Dependent variable:			
	foreign share		log population	
	(1)	(2)	(3)	(4)
exposure on yearly permits : not border region	−0.244***	−0.483***	−0.767***	−1.962***
	(−0.334, −0.154)	(−0.641, −0.324)	(−1.205, −0.328)	(−2.782, −1.143)
exposure on yearly permits : border region	−0.236***	−0.472***	−0.677***	−1.858***
	(−0.323, −0.150)	(−0.625, −0.318)	(−1.102, −0.251)	(−2.650, −1.065)
lagged exposure on seasonal permits : not border region		0.044***		0.213***
		(0.021, 0.066)		(0.095, 0.331)
lagged exposure on seasonal permits : border region		0.053***		0.266***
		(0.033, 0.072)		(0.159, 0.372)
protestant share	−0.070***	−0.091***	−0.148**	−0.253***
	(−0.091, −0.049)	(−0.114, −0.067)	(−0.272, −0.023)	(−0.393, −0.112)
female share	−0.015	−0.017	1.189***	1.177***
	(−0.069, 0.040)	(−0.074, 0.040)	(0.871, 1.508)	(0.844, 1.511)
children share	−0.041**	−0.006	0.027	0.200*
	(−0.075, −0.007)	(−0.048, 0.036)	(−0.159, 0.212)	(−0.019, 0.419)
elderly share	−0.044**	−0.045**	−3.736***	−3.738***
	(−0.083, −0.005)	(−0.083, −0.007)	(−4.001, −3.470)	(−4.003, −3.473)
Municipality FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	12,750	12,750	12,750	12,750

Note: *p<0.1; **p<0.05; ***p<0.01
Wild block bootstrapped 95% CI are reported in parentheses

Table A7: Heterogeneity in Effects by Major Language

	Dependent variable:			
	foreign share		log population	
	(1)	(2)	(3)	(4)
exposure on yearly permits : major language French	−0.322***	−0.491***	−0.865***	−5.632***
	(−0.428, −0.215)	(−0.799, −0.183)	(−1.374, −0.356)	(−7.981, −3.283)
exposure on yearly permits : major language German	−0.320***	−0.483***	−0.863***	−5.465***
	(−0.422, −0.219)	(−0.779, −0.187)	(−1.355, −0.371)	(−7.728, −3.202)
exposure on yearly permits : major language Italian	−0.335***	−0.486***	−0.821***	−5.498***
	(−0.440, −0.229)	(−0.789, −0.184)	(−1.312, −0.330)	(−7.766, −3.230)
exposure on yearly permits : major language Romansh	−0.338***	−0.503***	−1.065***	−5.808***
	(−0.446, −0.230)	(−0.808, −0.198)	(−1.584, −0.546)	(−8.146, −3.470)
lagged exposure on seasonal permits : major language French		0.062***		0.699***
		(0.019, 0.106)		(0.378, 1.020)
lagged exposure on seasonal permits : major language German		0.042***		0.608***
		(0.008, 0.075)		(0.355, 0.860)
lagged exposure on seasonal permits : major language Italian		0.010		1.004***
		(−0.047, 0.067)		(0.606, 1.401)
lagged exposure on seasonal permits : major language Romansh		−0.018		−0.961***
		(−0.092, 0.057)		(−1.461, −0.462)
protestant share	−0.078***	−0.085***	−0.252***	−0.834***
	(−0.101, −0.054)	(−0.127, −0.042)	(−0.382, −0.121)	(−1.140, −0.528)
female share	−0.014	−0.019	1.033***	1.055***
	(−0.060, 0.031)	(−0.065, 0.027)	(0.772, 1.293)	(0.732, 1.378)
children share	−0.003	0.020	0.204**	0.812***
	(−0.033, 0.026)	(−0.024, 0.063)	(0.038, 0.369)	(0.475, 1.150)
elderly share	−0.032*	−0.030*	−3.265***	−3.308***
	(−0.064, 0.001)	(−0.064, 0.004)	(−3.485, −3.046)	(−3.561, −3.056)
Municipality FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	15,324	15,324	15,324	15,324

Note: *p<0.1; **p<0.05; ***p<0.01
Wild block bootstrapped 95% CI are reported in parentheses

Table A8: Heterogeneity in Effects by Urbanism Type

	Dependent variable:			
	foreign share		log population	
	(1)	(2)	(3)	(4)
exposure on yearly permits : core city of an agglomeration	−0.263***	−0.585***	−1.230***	−2.947***
	(−0.344, −0.181)	(−0.759, −0.411)	(−1.631, −0.830)	(−3.864, −2.030)
exposure on yearly permits : other municipality of agglomeration	−0.301***	−0.607***	−0.911***	−2.706***
	(−0.381, −0.221)	(−0.779, −0.435)	(−1.304, −0.518)	(−3.616, −1.796)
exposure on yearly permits : isolated city	−0.293***	−0.624***	−1.163***	−2.950***
	(−0.377, −0.210)	(−0.804, −0.445)	(−1.573, −0.754)	(−3.903, −1.997)
exposure on yearly permits : rural municipality	−0.307***	−0.618***	−1.215***	−3.005***
	(−0.388, −0.225)	(−0.794, −0.443)	(−1.615, −0.814)	(−3.923, −2.087)
lagged exposure on seasonal permits : core city of an agglomeration		0.094***		0.108
		(0.060, 0.128)		(−0.027, 0.243)
lagged exposure on seasonal permits : other municipality of agglomeration		0.051***		0.373***
		(0.030, 0.071)		(0.262, 0.483)
lagged exposure on seasonal permits : isolated city		0.165***		0.165
		(0.117, 0.212)		(−0.045, 0.375)
lagged exposure on seasonal permits : rural municipality		0.060***		0.322***
		(0.037, 0.083)		(0.207, 0.438)
protestant share	−0.077***	−0.104***	−0.210***	−0.372***
	(−0.096, −0.058)	(−0.129, −0.079)	(−0.312, −0.108)	(−0.499, −0.244)
female share	0.005	−0.006	0.963***	0.887***
	(−0.040, 0.050)	(−0.052, 0.040)	(0.728, 1.197)	(0.632, 1.142)
children share	−0.016	0.029	0.263***	0.542***
	(−0.046, 0.014)	(−0.009, 0.067)	(0.111, 0.414)	(0.343, 0.741)
elderly share	−0.039**	−0.034**	−2.842***	−2.807***
	(−0.071, −0.007)	(−0.067, −0.001)	(−3.034, −2.651)	(−2.999, −2.614)
Municipality FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Observations	15,324	15,324	15,324	15,324

Note: *p<0.1; **p<0.05; ***p<0.01
Wild block bootstrapped 95% CI are reported in parentheses

A.6 Individual Level Heterogeneity

	Dependent variable:		
	unemploy	part time	move canton
exposure on yearly permits $times$ education level: mandatory	-5.139	0.526	-1.415
	$[-13.221; 2.944]$	$[-2.128; 3.179]$	$[-5.570; 2.739]$
exposure on yearly permits $times$ education level: vocational	-5.375	0.493	-0.929
	$[-13.450; 2.700]$	$[-2.150; 3.136]$	$[-5.093; 3.235]$
exposure on yearly permits $times$ education level: general	-5.121	1.054	-0.492
	$[-13.168; 2.926]$	$[-1.612; 3.720]$	$[-4.651; 3.667]$
exposure on yearly permits $times$ education level: higher professional	-5.612	0.345	-0.423
	$[-13.649; 2.425]$	$[-2.305; 2.994]$	$[-4.583; 3.737]$
exposure on yearly permits $times$ education level: university	-5.278	0.866	0.012
	$[-13.327; 2.772]$	$[-1.765; 3.498]$	$[-4.137; 4.161]$
age	-0.055^*	0.092^*	-0.044^*
	$[-0.069; -0.042]$	$[0.077; 0.106]$	$[-0.051; -0.036]$
age^2	0.000^*	-0.000^*	
	$[0.000; 0.001]$	$[-0.001; -0.000]$	
female	0.390^*	2.698^*	0.421^*
	$[0.320; 0.461]$	$[2.563; 2.833]$	$[0.312; 0.529]$
age $\times$ female			-0.006^*
			$[-0.008; -0.004]$
swiss citizen	-0.462^*	0.599^*	0.038
	$[-0.554; -0.370]$	$[0.525; 0.674]$	$[-0.280; 0.355]$
mother tongue: French	-0.226^*	0.033	-0.274
	$[-0.333; -0.119]$	$[-0.067; 0.133]$	$[-0.882; 0.335]$
mother tongue: German	-0.580^*	0.066^*	0.118
	$[-0.667; -0.494]$	$[0.005; 0.128]$	$[-0.370; 0.605]$
mother tongue: Italian	-0.782^*	0.000	-0.653
	$[-0.919; -0.645]$	$[-0.067; 0.067]$	$[-1.400; 0.094]$
Canton FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
Num. obs.	652549	637356	937301

Pairs cluster bootstrapped 95% CI are reported in brackets

Table A9: Heterogeneity in Effects by Educational Attainment

	Dependent variable:		
	part time	move canton	low skill
exposure on yearly permits × industry: agriculture and mining	0.545	−0.093	9.712*
	[−2.292; 3.382]	[−4.386; 4.200]	[0.141; 19.283]
exposure on yearly permits × industry: construction	0.148	0.057	9.818*
	[−2.592; 2.887]	[−4.232; 4.345]	[0.384; 19.252]
exposure on yearly permits × industry: manufacturing	0.057	0.345	10.186*
	[−2.708; 2.822]	[−3.921; 4.611]	[0.746; 19.626]
exposure on yearly permits × industry: hospitality	0.019	1.282	9.507*
	[−2.709; 2.746]	[−3.002; 5.566]	[0.152; 18.861]
exposure on yearly permits × industry: skilled service	0.521	0.561	9.646*
	[−2.233; 3.275]	[−3.706; 4.828]	[0.225; 19.067]
exposure on yearly permits × industry: other service	0.517	0.595	9.719*
	[−2.248; 3.282]	[−3.680; 4.871]	[0.269; 19.169]
age	0.104*	−0.053*	−0.032*
	[0.090; 0.117]	[−0.061; −0.044]	[−0.046; −0.017]
age^2	−0.001*		0.001*
	[−0.001; −0.000]		[0.000; 0.001]
female	2.713*	0.388*	0.647*
	[2.584; 2.841]	[0.284; 0.492]	[0.594; 0.700]
age × female		−0.006*	
		[−0.009; −0.003]	
swiss citizen	0.572*	−0.010	−0.532*
	[0.505; 0.638]	[−0.311; 0.292]	[−0.605; −0.458]
education level: mandatory	−0.011	−0.067	
	[−0.094; 0.072]	[−0.242; 0.108]	
education level: vocational	−0.103	0.440*	
	[−0.207; 0.000]	[0.252; 0.627]	
education level: general	0.204*	0.656*	
	[0.073; 0.334]	[0.428; 0.884]	
education level: higher professional	−0.277*	0.975*	
	[−0.396; −0.157]	[0.775; 1.174]	
education level: university	0.160*	1.353*	
	[0.041; 0.278]	[1.115; 1.591]	
mother tongue: French	0.029	−0.292	−0.891*
	[−0.061; 0.119]	[−0.910; 0.326]	[−0.975; −0.806]
mother tongue: German	0.046	0.113	−0.920*
	[−0.009; 0.102]	[−0.407; 0.633]	[−0.992; −0.848]
mother tongue: Italian	−0.016	−0.546	0.093
	[−0.085; 0.052]	[−1.140; 0.047]	[−0.047; 0.232]
Canton FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
Num. obs.	612351	575000	543189

Pairs cluster bootstrapped 95% CI are reported in brackets

Table A10: Heterogeneity in Effects by Industry

	Dependent variable:			
	unemploy	part time	move canton	low skill
exposure on yearly permits *times* Central Switzerland	−4.198	−0.374	−1.637	10.976*
	[−14.171; 5.776]	[−2.800; 2.052]	[−6.752; 3.479]	[0.078; 21.874]
exposure on yearly permits *times* Central Switzerland	−4.198	−0.374	−1.637	10.976*
	[−14.171; 5.776]	[−2.800; 2.052]	[−6.752; 3.479]	[0.078; 21.874]
exposure on yearly permits *times* Eastern Switzerland	−4.016	−0.476	−1.680	11.469*
	[−14.203; 6.171]	[−2.947; 1.995]	[−6.845; 3.486]	[0.477; 22.462]
exposure on yearly permits *times* Espace Mittelland	−3.288	−0.386	−1.648	11.146*
	[−13.467; 6.891]	[−2.835; 2.063]	[−6.725; 3.429]	[0.289; 22.003]
exposure on yearly permits *times* Lake Geneva Region	−2.821	−0.333	−1.797	11.124*
	[−12.884; 7.241]	[−2.826; 2.159]	[−7.023; 3.430]	[0.080; 22.169]
exposure on yearly permits *times* Northwestern Switzerland	−3.706	−0.235	−1.443	11.296*
	[−13.703; 6.291]	[−2.690; 2.220]	[−6.589; 3.703]	[0.380; 22.211]
exposure on yearly permits *times* Ticino	−4.322	−0.286	−0.828	11.552*
	[−14.486; 5.843]	[−2.808; 2.235]	[−6.068; 4.411]	[0.503; 22.600]
exposure on yearly permits *times* Zurich	−4.179	−0.318	−1.799	11.290*
	[−14.154; 5.795]	[−2.765; 2.130]	[−6.864; 3.265]	[0.462; 22.117]
age	−0.055*	0.092*	−0.045*	−0.032*
	[−0.069; −0.042]	[0.078; 0.106]	[−0.052; −0.037]	[−0.046; −0.018]
age^2	0.000*	−0.000*		0.001*
	[0.000; 0.001]	[−0.001; −0.000]		[0.000; 0.001]
female	0.389*	2.692*	0.417*	0.552*
	[0.317; 0.461]	[2.557; 2.828]	[0.304; 0.529]	[0.497; 0.607]
age *times* female			−0.005*	
			[−0.007; −0.003]	
swiss citizen	−0.461*	0.609*	0.041	−0.538*
	[−0.551; −0.370]	[0.536; 0.683]	[−0.265; 0.346]	[−0.613; −0.462]
education level: mandatory	−0.622*	0.000	0.426*	
	[−0.778; −0.465]	[−0.081; 0.081]	[0.281; 0.571]	
education level: vocational	−0.841*	−0.072	0.872*	
	[−1.017; −0.664]	[−0.177; 0.033]	[0.727; 1.018]	
education level: general	−0.607*	0.315*	1.214*	
	[−0.806; −0.408]	[0.178; 0.452]	[1.030; 1.398]	
education level: higher professional	−1.046*	−0.224*	1.362*	
	[−1.265; −0.827]	[−0.339; −0.108]	[1.215; 1.508]	
education level: university	−0.754*	0.246*	1.729*	
	[−0.910; −0.598]	[0.097; 0.395]	[1.570; 1.888]	
mother tongue: French	−0.226*	0.038	−0.281	−0.850*
	[−0.333; −0.118]	[−0.063; 0.139]	[−0.883; 0.321]	[−0.920; −0.781]
mother tongue: German	−0.579*	0.074*	0.107	−0.905*
	[−0.668; −0.491]	[0.013; 0.134]	[−0.367; 0.582]	[−0.973; −0.836]
mother tongue: Italian	−0.785*	−0.002	−0.552	0.121
	[−0.914; −0.655]	[−0.068; 0.065]	[−1.268; 0.163]	[−0.023; 0.265]
Canton FE	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes
Num. obs.	652549	637356	937301	559934

Pairs cluster bootstrapped 95% CI are reported in brackets

Table A11: Heterogeneity in Effects by Labor Market Region

	Dependent variable:				
	neet	unemploy	part time	move canton	low skill
exposure on yearly permits	-9.855				
	$[-27.493; 7.783]$				
exposure on yearly permits × non-youth		-5.677	1.091	-0.944	10.658^*
		$[-13.732; 2.377]$	$[-1.539; 3.720]$	$[-4.827; 2.938]$	$[0.904; 20.412]$
exposure on yearly permits × youth		-5.091	-0.891	-0.051	10.755^*
		$[-13.132; 2.950]$	$[-3.547; 1.765]$	$[-3.979; 3.878]$	$[1.009; 20.501]$
age	0.016				
	$[-0.006; 0.038]$				
female	0.110^*	0.399^*	2.523^*	0.217^*	0.521^*
	$[0.024; 0.196]$	$[0.329; 0.469]$	$[2.403; 2.642]$	$[0.152; 0.282]$	$[0.467; 0.576]$
swiss citizen	-0.397^*	-0.506^*	0.765^*	-0.110	-0.481^*
	$[-0.536; -0.258]$	$[-0.601; -0.412]$	$[0.666; 0.865]$	$[-0.394; 0.175]$	$[-0.565; -0.398]$
education level: mandatory	-1.234^*	-0.589^*	-0.054	0.215^*	
	$[-1.431; -1.037]$	$[-0.746; -0.432]$	$[-0.135; 0.027]$	$[0.080; 0.350]$	
education level: vocational	-1.302^*	-0.807^*	-0.279^*	0.784^*	
	$[-1.467; -1.137]$	$[-0.983; -0.631]$	$[-0.375; -0.184]$	$[0.672; 0.897]$	
education level: general	-0.865^*	-0.561^*	0.074	1.165^*	
	$[-1.183; -0.547]$	$[-0.760; -0.361]$	$[-0.058; 0.206]$	$[0.990; 1.340]$	
education level: higher professional	-1.022^*	-1.011^*	-0.476^*	1.256^*	
	$[-1.373; -0.671]$	$[-1.230; -0.792]$	$[-0.592; -0.360]$	$[1.136; 1.375]$	
education level: university	-0.256	-0.718^*	-0.009	1.569^*	
	$[-0.542; 0.031]$	$[-0.873; -0.563]$	$[-0.153; 0.135]$	$[1.439; 1.699]$	
mother tongue: French	-0.182^*	-0.220^*	0.126^*	-0.292	-0.833^*
	$[-0.347; -0.017]$	$[-0.331; -0.109]$	$[0.011; 0.240]$	$[-0.865; 0.281]$	$[-0.905; -0.762]$
mother tongue: German	-0.565^*	-0.586^*	0.185^*	0.073	-0.873^*
	$[-0.747; -0.382]$	$[-0.666; -0.505]$	$[0.105; 0.266]$	$[-0.381; 0.528]$	$[-0.939; -0.807]$
mother tongue: Italian	-0.618^*	-0.837^*	0.108^*	-0.550	0.152^*
	$[-0.821; -0.416]$	$[-0.989; -0.684]$	$[0.039; 0.176]$	$[-1.270; 0.171]$	$[0.013; 0.292]$
Canton FE	Yes	Yes	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes	Yes	Yes
Num. obs.	119480	652549	637356	937301	559934

Pairs cluster bootstrapped 95% CI are reported in brackets

Table A12: Heterogeneity in Effects by Age Group (Youth)

	Dependent variable:		
	unemploy	part time	low skill
age	-0.052^*	0.092^*	-0.032^*
	$[-0.065; -0.039]$	$[0.078; 0.107]$	$[-0.046; -0.017]$
age^2	0.000^*	-0.000^*	0.001^*
	$[0.000; 0.001]$	$[-0.001; -0.000]$	$[0.000; 0.001]$
female	0.375^*	2.708^*	0.528^*
	$[0.303; 0.446]$	$[2.574; 2.842]$	$[0.474; 0.581]$
education level: mandatory	-0.643^*	0.065	
	$[-0.802; -0.483]$	$[-0.017; 0.147]$	
education level: vocational	-0.855^*	0.016	
	$[-1.036; -0.675]$	$[-0.087; 0.120]$	
education level: general	-0.655^*	0.408^*	
	$[-0.852; -0.457]$	$[0.274; 0.543]$	
education level: higher professional	-1.093^*	-0.132^*	
	$[-1.318; -0.869]$	$[-0.240; -0.025]$	
education level: university	-0.871^*	0.348^*	
	$[-1.033; -0.709]$	$[0.207; 0.489]$	
mother tongue: French	-0.089	0.259^*	-1.025^*
	$[-0.195; 0.017]$	$[0.152; 0.366]$	$[-1.098; -0.953]$
mother tongue: German	-0.414^*	0.290^*	-1.072^*
	$[-0.505; -0.324]$	$[0.197; 0.384]$	$[-1.149; -0.995]$
mother tongue: Italian	-0.632^*	-0.068	0.200^*
	$[-0.768; -0.497]$	$[-0.142; 0.006]$	$[0.049; 0.351]$
Canton FE	Yes	Yes	Yes
Decade FE	Yes	Yes	Yes
Num. obs.	652549	637356	559934

Pairs cluster bootstrapped 95% CI are reported in brackets

Table A13: Heterogeneity in Effects by Immigration Background

A.7 Sensitivity Test

Table A14: Municipal Level Sensitivity Test on Foreign Share of Population

	Dependent variable:							
	foreign share							
	all	metro	border	outlier	all	metro	border	outlier
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
exposure on yearly permits	−0.289***	−0.272***	−0.283***	−0.270***	−0.586***	−0.539***	−0.576***	−0.572***
	(0.043)	(0.043)	(0.041)	(0.043)	(0.093)	(0.090)	(0.083)	(0.104)
lagged exposure on seasonal permits					0.056***	0.051***	0.059***	0.056***
					(0.011)	(0.011)	(0.010)	(0.013)
protestant share	−0.078***	−0.061***	−0.075***	−0.076***	−0.105***	−0.085***	−0.103***	−0.102***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.013)	(0.013)	(0.012)	(0.013)
female share	0.0002	0.004	0.005	−0.012	−0.011	−0.008	−0.006	−0.021
	(0.023)	(0.024)	(0.024)	(0.024)	(0.025)	(0.025)	(0.025)	(0.025)
children share	−0.015	−0.013	−0.015	−0.017	0.030	0.028	0.029	0.026
	(0.015)	(0.016)	(0.016)	(0.015)	(0.021)	(0.021)	(0.020)	(0.021)
elderly share	−0.039**	−0.049***	−0.044**	−0.041**	−0.037**	−0.042**	−0.040**	−0.038**
	(0.018)	(0.019)	(0.018)	(0.018)	(0.018)	(0.019)	(0.019)	(0.018)
Observations	15,324	14,122	14,598	14,952	15,324	14,122	14,598	14,952

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered at cantonal level are reported in parentheses
all = all municipalities
metro = excluding municipalities in agglomerations Zurich/Geneva/Lausanne/Basle/Berne
border = excluding municipalities in Cantons Geneva/Basle-City/Basle-Country
outlier = excluding municipalities in Cantons Appenzell/Glaris/Nidwald

Table A15: Municipal Level Sensitivity Test on Population Growth

	Dependent variable:							
	log population							
	all	metro	border	outlier	all	metro	border	outlier
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
exposure on yearly permits	−0.682***	−0.360*	−0.424**	−0.482**	−2.311***	−1.033***	−1.325***	−1.708***
	(0.211)	(0.190)	(0.198)	(0.208)	(0.485)	(0.395)	(0.400)	(0.521)
lagged exposure on seasonal permits					0.307***	0.128***	0.180***	0.227***
					(0.059)	(0.048)	(0.050)	(0.066)
protestant share	−0.220***	0.032	−0.193***	−0.214***	−0.368***	−0.030	−0.277***	−0.321***
	(0.059)	(0.053)	(0.060)	(0.059)	(0.075)	(0.064)	(0.071)	(0.075)
female share	1.040***	0.852***	1.082***	0.969***	0.979***	0.822***	1.049***	0.930***
	(0.132)	(0.125)	(0.132)	(0.133)	(0.138)	(0.126)	(0.135)	(0.138)
children share	0.203**	0.151**	0.102	0.222***	0.449***	0.253***	0.237**	0.396***
	(0.083)	(0.076)	(0.081)	(0.082)	(0.109)	(0.092)	(0.097)	(0.110)
elderly share	−3.300***	−2.771***	−3.216***	−3.301***	−3.289***	−2.753***	−3.204***	−3.291***
	(0.115)	(0.104)	(0.116)	(0.116)	(0.117)	(0.105)	(0.117)	(0.117)
Observations	15,324	14,122	14,598	14,952	15,324	14,122	14,598	14,952

Note: *p<0.1; **p<0.05; ***p<0.01
Standard errors clustered at cantonal level are reported in parentheses
all = all municipalities
metro = excluding municipalities in agglomerations Zurich/Geneva/Lausanne/Basle/Berne
border = excluding municipalities in Cantons Geneva/Basle-City/Basle-Country
outlier = excluding municipalities in Cantons Appenzell/Glaris/Nidwald