Foreigners' Internal Mobility in Switzerland: Interrelation with International Immigration and Contextual Factors

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Abstract

Switzerland has experienced considerable immigration flows since the Second World War. Based on longitudinal data obtained from a probabilistic linkage of administrative and Census records, the internal mobility of foreigners is analysed between 1981 and 2004. We focus on various dynamics in international migration that affect the internal redistribution of immigrants. The interrelationship is first addressed on the aggregate level in estimating the structural impact of international inflows. During the first decade under study, internal migration levels have been inflated due to the increasing numbers of recent immigrants, characterized by the highest mobility. Between 1990-4 and 2000-4, however, internal migration increased because of a qualitative change in the foreign population. Immigrants are increasingly skilled and therefore more prone to internal mobility. A second multivariate and multilevel approach also stresses their differential sensitivity to contextual factors. Being more flexible in the multiregional labour market as well as less retained by networks and urban centrality, high skilled foreigners converge towards the residential preferences of natives as evinced by their emergent peri-urbanisation. Since the socioeconomic composition of immigrants is increasingly determined by the Swiss immigration policy, we conclude that the latter inflated overall mobility levels of foreigners. It therefore sustained regional economic dynamics as well as the spatial assimilation of foreigners in Switzerland.

Introduction

Switzerland has experienced important immigration flows since Second World War. Migration policies actively recruited foreign labour force that brought along chain migration as well as family reunifications. About 7 millions temporary permits were delivered in the second half of the 20th Century and an annual average of 65 000 foreigners got a residence permit between 1949 and 2001 (Piguet 2005).

In the context of increasing life expectancy and declining fertility of the Swiss population, migration became a major factor to counteract negative effects of population ageing on the labour market. Furthermore, internal migration is a major determinant of regional population dynamics in Switzerland. In 80% of the Swiss regions[1] the migration balance is higher than the difference between the number of births and deaths (Carnazzi-Weber and Golay 2005). Foreigners represented a fifth of the 7,7 millions residents in 2008 and significantly contributed to demographic reproduction in Switzerland. Their level of internal migration also increased over the decades and is higher than among nationals since the 1990s (Zarin-Nejadan and Murier 2000). The immigrants' patterns of internal redistribution therefore affect demographic and economic inequalities between regions in Switzerland.

Until the 1970s, the spatial distribution of immigrants has been determined by institutional constrains and the labour market. Foreign labour force contingents have been defined yearly by the federal state and distributed among cantons. However, with the diversification of the forms and motives of immigration since the 1980s, the patterns of settlements got diversified and became difficult to regulate.

In this paper, internal migrations of foreigners are analysed between 1982 and 2004. Mobility is often conceptualized in a life course and human capital accumulation framework and is sensitive to spatial attributes and opportunities. However, the internal migration of immigrants constitutes de facto a secondary migration after settlement in the destination country. We therefore focus on dynamics in international immigration that affect the internal redistribution of migrants. International inflows indeed transform the composition of the migrant stock susceptible to move internally. Relying on immigrant trajectories, structural impacts of international migration dynamics on aggregate internal migration levels can be estimated along with behavioural impacts due to the differential mobility patterns of immigrant cohorts. As international migration to Switzerland experienced considerable changes in its socioeconomic composition as well, we also investigate period trends in individual behaviours as well as changes in their sensibility to contextual factors.

The next section briefly highlights potential impacts of immigration on the internal redistribution of immigrants. After the presentation of the data and definitions, results are then presented. We finally sum up the main changes in the foreigners' internal mobility attributable to the Swiss immigration dynamics and discuss their implications for demographic and economic differentials between Swiss regions.

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[1] We use in this text the statistical concept of Spatial Mobility Regions (106 regions in Switzerland).

Linking immigration to the internal redistribution of migrants

Considered in a life course perspective, changing one's residence is dependent on age as well as on family situation (Greenwood 1985). If the intentions to stabilize the family as well as the professional career at higher ages decrease mobility, the likelihood to move is highest among young adults because of the multiple life course transitions at that age (parental decohabitation, entry into the labour force, union and family formation). But life course transitions do not necessarily imply a change in current residence. Neoclassic economic theory considers geographic mobility as an individual investment aiming to increase living standards (Sjaastad 1962). Moving from one place to another may be motivated by pecuniary gains – consisting on higher income, lower taxes, etc. – as well as non-pecuniary benefits such as a sweeter environment. The latter becomes increasingly valorised once basic needs have been fulfilled or in the context of family formation or reunification. Mobility also implies specific direct and indirect costs due to the removal itself, as well as emotional costs of relocation in a different social environment. The rational decision to move is therefore expected to be positive only when the expected benefits outnumber the costs.

Spatial attributes are an integral part of this rational calculus in expelling and attracting people from and to specific locations (Lee 1966). Migrants are supposed to be sensible to geographic differences in supply and demand of labour or, more specifically, to the resulting income differentials. Environmental aspects, including the socioeconomic composition of residents in specific places, enter into account as well. Studies in the U.S. and Canada confirm the importance of regional economic dynamics, attracting and retaining immigrants in dynamic places (Newbold 1996; Gurak and Kritz 2000). But internal migration may be constraint by different barriers to mobility. One of the main barriers in Switzerland is its linguistic diversity. Until 2001, foreigners were also denied the right to cross cantonal borders until they had been granted a permanent residence permit[2].

The balance of costs and benefits, as well as the relevance of spatial attributes and barriers, depend on the socioeconomic profile of potential migrants. Young and higher educated people, engaged in an upward social mobility, tend to migrate more because they can expect higher returns in terms of income or career prospects. They may also be less concerned by emotional costs of relocating and could mobilise higher resources to overcome barriers.

However, the internal migrations of immigrant populations constitute de facto a secondary migration after the settlement in a foreign country. We therefore have to consider their international migration background, which can impact on motives to move within the destination country. If interrelationships between internal and international migration have been subject to conceptualization and investigations in countries of origin, we know little about its correlates in destination countries (King et al. 2008). The issue has been mainly addressed from the perspectives of replacement or eviction of pre-established natives by new immigrant flows; hence, international and internal migrations are considered as two independent flows. In this paper, we conceptualize internal mobility as a part of the international immigration project and focus on various ways the initial move across state borders is susceptible to influence subsequent mobility within the destination country.

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[2] Immigrants in Switzerland are first granted an annual residence permit renewable during five consecutive years before being granted a permanent permit (renewable every five years). Those who enter the country to join family members are directly granted a permanent residence permit.

Foreigners indeed take their internal migratory decision while they integrate in the destination country. Virtually all studies found a decreasing migration propensity with increasing length of stay. Duration of residence is a good indicator for different aspects of the integration process that can be declined in its structural and its cultural components. Internal mobility may be particularly valorised during the initial economic integration of immigrants. Economically active immigrants tend to migrate more than non actives because they may expect higher financial returns from mobility (Finney and Simpson 2008, Newbold 1996), which is one of the main motives for engaging in international emigration. But immigrants are often characterized by a U-shaped economic integration in the destination country, as observed among Latinos in the US (Akresh, 2008): while the first job is associated to a prestige loss, subsequent professional mobility adjusts for initial deskilling. Geographic mobility may be part of this professional adjustment. Moreover, salaried workers are more likely to move than independent entrepreneurs, because the resources and assets of the latter are spatially more fixed (particularly if involved in ethnic business; Gurak and Kritz, 2000).

The decreasing propensity to move with additional years of residence can also be related to the social integration process. Massey and Mullan (1984) conceptualize the immigrants' "spatial assimilation" as an intermediary and selective process between the structural and the cultural integration: the geographic proximity of foreigners to the natives is susceptible to increase social contacts and hence to facilitate integration. In the first years of residence, migrants tend to cluster in places characterized by the presence of pre-established migrant groups. The importance and functions of migrant networks are well established (Boyd, 1989; Gurak and Faces, 1992). They orient destination choices in providing information on local policies and economic opportunities, assist newcomers in their structural integration (finding housing and jobs) and can endorse a psychological function that enhances cultural integration: because of their prior experience, former immigrants represent a bridge between the origin and destination cultures by providing a social environment to preserve cultural specificities (for instance through language courses for the descents). Thus, established networks in potential places of destinations for internal migration are expected to exert the same attraction for recent immigrants settled elsewhere in the country. However, the role of networks in the current place of residence is ambiguous. While the prevalent social dynamics could limit departures to other regions, the social capital as well as the information on potential destinations may boost migration opportunities (Gurak and Kritz 2000, Courgeau and Lelièvre 2003). Evidence from Spain and the United States confirms the social retention effect rather than the catalysator effect of networks in the place of residence (Recano-Valverde 2006, Newbold 1996). An analysis of foreigners' mobility between the 26 Swiss cantons also indicates that their redistribution increased the spatial concentration of nationalities in Switzerland (Zarin-Nejadan and Murier 2000). Using immigrant trajectories, we are able to test this relationship in a longitudinal, multivariate and individual perspective.

Moreover, the social attractiveness of places where migrant networks are located is closely linked to the spatial opportunities found there. The urban attribute is particularly attractive because of its cultural diversity and the economic opportunities it provides. More diversified labour markets, characterized by a high turn-over of jobs, are interesting for both low and high skilled migrants. Today, immigrant clusters are often – but not always – located in urban areas. The geographic distribution of international immigration in European countries indeed changed with the historical migratory regimes (Champion 1994, citing White 1993). Under the active recruitment scheme, the first residence was determined by the first job. As European immigration became increasingly composed of non active or non occupied

individuals at the moment of border crossing, immigrant networks – particularly those located in cities – became more and more attractive for newcomers because of the different functions introduced above. Switzerland is not an exception, as recent immigrants made up a quarter of the new residents in the main urban agglomeration in 2000 (Da Cunha and Roth 2004). Figure 1 illustrates the concentration of recent immigration in the central communes of the agglomerations of Geneva and Lausanne in the South-West, Bern in the Centre-West and Basel at the Northern border to Germany as well as Zürich and St. Gallen in the North-East. The "new immigration" of highly qualified workers accentuated this trend because of the spatial concentration of the specialized tertiary sector in cities.

Figure 1: Spatial distribution by communes of the immigrant cohort 2000-4.
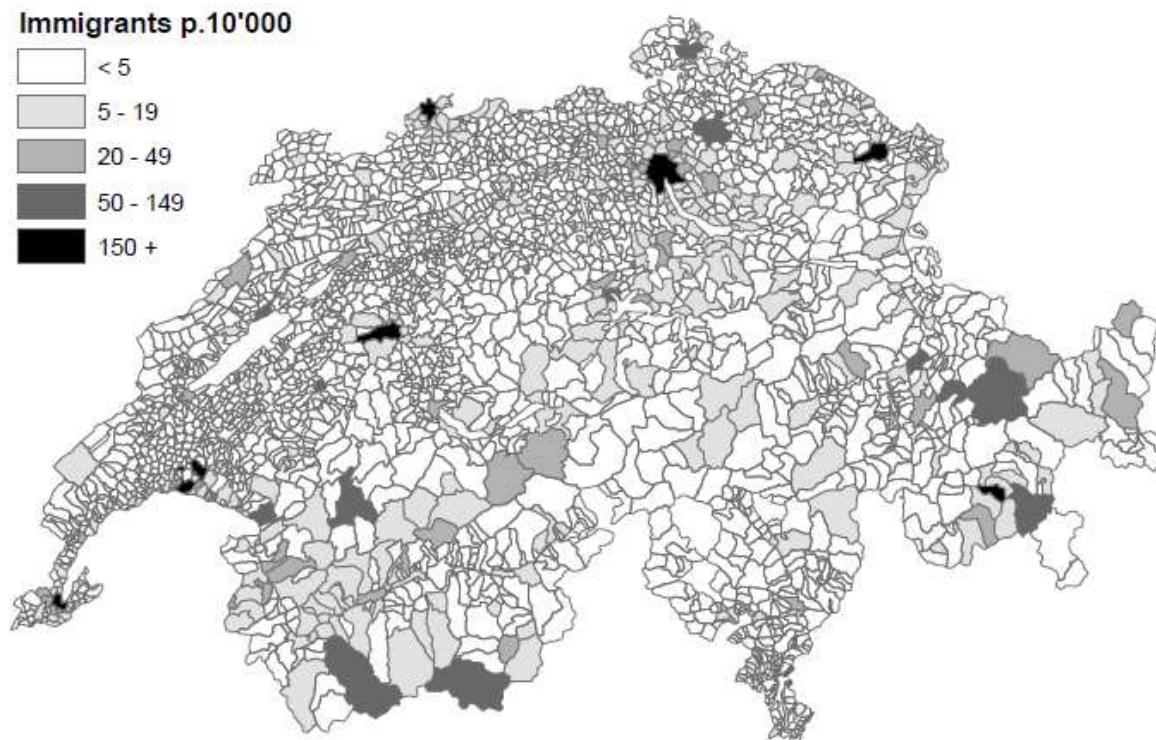

Source: Central foreigners' register.

However, Massey and Mullan (1984) postulate that once the structural integration is achieved, immigrants engaged in an upward social mobility converge in their residential preferences to the natives' ones. The movers are expected to leave immigrant clusters to settle in affluent areas. Dominant intra-metropolitan movements since the 1970 in Europe are directed from the city centres in suburban, periurban and, more recently, adjacent rural areas (Champion 1989). This centrifugal mobility is motivated by lower congestion effects and higher environmental quality found in places around the city. The "spatial assimilation" hypothesis therefore implies a periurbanisation of foreigners, as well (Alba and Logan 1991). Until recently, this trend has not been observed in Switzerland: leaving the city-centres mainly concerned Swiss natives and selected those with a higher socioeconomic status (Da Cunha et Roth, 2004).

However, internal migration patterns may be transformed because of the changing socioeconomic composition of immigrants in Switzerland, and more generally in Europe. Until the 1980s, Switzerland was characterized by both, active labour recruitment and the so-called "temporary-admitted model" of the foreign labour force. The main contingents of short term migrants were recruited in Greece, Italy and Spain. After a decrease in immigration

following the two oil crisis in 1973 and 1982, the inflow increased again along with a diversification of motives and origins (see Figure 2). Immigrants were granted the right to reunificate their family and labour force is more and more recruited in Portugal and former Yugoslavia, while diverse asylum flows developed (from Turkey, Africa and Asia; Mahnig and Piguet 2003).

Figure 2: Temporal dynamics of the Swiss immigration (1982-2004).
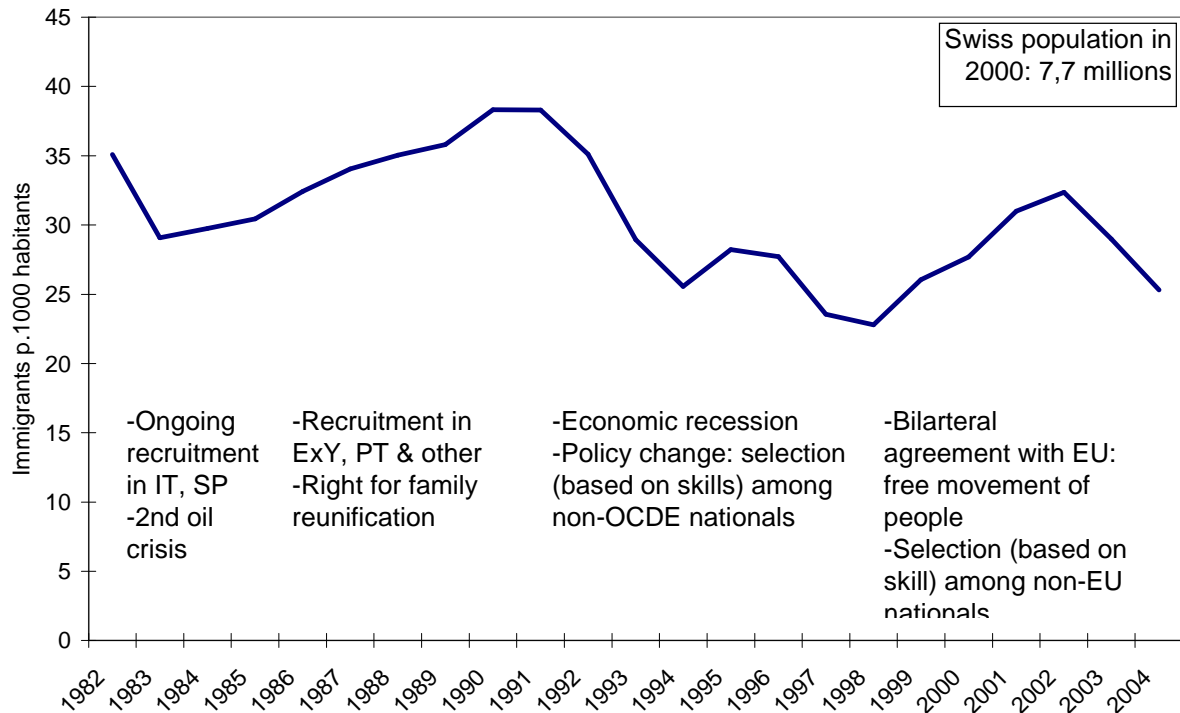
Source: Central Aliens' Register, Annual Population Statistics.

Whereas Switzerland experienced a major immigration peak around 1990, the short-term (seasonal) permit has been given up in the framework of the closer ties with the European Union since 1992. During the economic recession, labour migration declined as a new admission policy interrupted immigration from non OCDE member states, unless the candidates were high skilled. However, lots of foreigners decided to stay in Switzerland and therefore the share of the immigration composed by family reunification increased. The new policy intended to create an environment of free movement within the member states of the European Union and to attract high skilled immigrants from third countries (Mahnig and Piguet 2003). The share of high skilled individuals among recent immigrants consequently increased from 23% in 1990 to 62% in 2000 and became higher than among natives (Pecoraro 2005).

These dynamics could have had a quantitative and qualitative impact on the internal redistribution of foreigners. The quantitative dynamics of international inflows changes the mean length of stay of the migrant population and therefore influences the overall level of internal mobility: the higher the inflow in a particular period, the more the migrant population is susceptible to move within the country because the share of recent immigrants is higher. With the changing qualitative profile of immigrant cohorts, sub-populations particularly prone to or restrained in their mobility become more or less represented. Mobility of foreigners in Switzerland may have increased recently because the expected returns are higher for later and better educated immigrant cohorts. In contrast, the increasing family component in

international migration complicates subsequent internal movements. But later on, the immigrants' children progressively reach young adult ages and therefore may be very mobile. The second generation indeed constitutes the "demographic reservoir of Switzerland" (Wanner 2004: 23) and may play an increasing role in the foreigners' mobility in the future.

Until now, we have considered the integration process as being constant. However, the qualitative change of international immigration flows may transform individual residential trajectories in Switzerland. For example, today's highly skilled immigrants may not only move to adjust their position in the occupational hierarchy but mobility could be an integral part of the international migration project aiming to develop career prospects. Spatial patterns may also change as highly skilled immigrants may be less dependent of networks for their integration because they can mobilize more individual resources. We therefore have to investigate not only changes in individual determinants of migration over time, but also to see to what extent the sensibility to contextual factors differs between subgroups and immigrant cohorts.

Definitions and data

We refer on longitudinal data obtained trough probabilistic record linkage of the yearly foreigners' registers for the period 1981 to 2004. Immigrant trajectories could be identified from the moment the foreigners grant a residence status (unless they already had one in 1981) until they naturalize, leave Switzerland or die. For practical purposes, immigrants are defined according to nationality. The length of residence is an administrative measure starting with the grant of an annual or permanent residence permit. Since we are able to follow each individual characteristic (age, length of residence, marital status, and economic activity) over the migrants' trajectory in Switzerland, internal mobility can be described using appropriate mean annual occurrence-exposure rates over five-year periods. However, our data do not allow the identification of family units. We therefore focus on mobility at adult ages in considering the first generation of immigrants, who were granted a residence permit at age 16 and over.

The second data set mobilized for this research consists of a subset of these linked trajectories. Using the same methodology, they have been successfully matched with foreigners enumerated at the Swiss population censuses of 1990 and 2000, in order to add information regarding socioeconomic background (i.e. achieved or current educational level). Along with the estimation of contextual characteristics from the 1990 Census, individual mobility behaviours can be investigated in a longitudinal, multivariate and multilevel perspective controlling for various time-varying characteristics.

Migration patterns are analysed here between the 106 spatial mobility regions (SM regions), defined by the Swiss Federal Statistical Office (FSO) based on the last census in 2000. This statistical typology regroups communes (the lowest administrative level in Switzerland) based on structural characteristics and on the position in the hierarchy of urban centres and agglomerations (see Schuler et al. 2005)[3]. The numbers of foreigners by SM regions range

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[3] The communal codes in the annual registers have been harmonised between 1981 and 2004 in controlling for administrative mutations indexed in an historical register (see BFS 2007). Communes have then been regrouped according to the official definition of SM regions in 2005.

between 500 and 147 000 in 2004, with a median of 9 200 individuals. If the adopted typology constitutes an appropriate spatial level for multilevel research in a small country such as Switzerland, some SM regions located in the centre of cities also count periurban communes. Therefore, indices of migration efficiency, derived from inter-communal migration matrices according to the type of communes, provide robust confirmations on the communal level of the observed trends between regions.

Structural and behavioural impact of immigration on internal mobility

The crude interregional migration rates of foreigners regularly increased from 24 to 32 p.1000 between the early 1980s and 2000s. A comparison with estimates for Swiss nationals from the 2000 census (22 p.1000 since 1995) confirms the higher mobility of foreigners.

Their length of residence clearly determines the probability to move within SM regions (see Figure 3). The linear and negative gradient remained quite stable over the last twenty years, with migrants arrived one or two years ago being characterized by the highest migration probabilities and those in Switzerland since at least 15 years by the lowest (respectively more than 60 and 15 p.1000). The annual renewal of the migrant stock must therefore positively affect its internal mobility rate.

Figure 3: Internal migration rate according to period and length of residence, first generation 1982-2004.
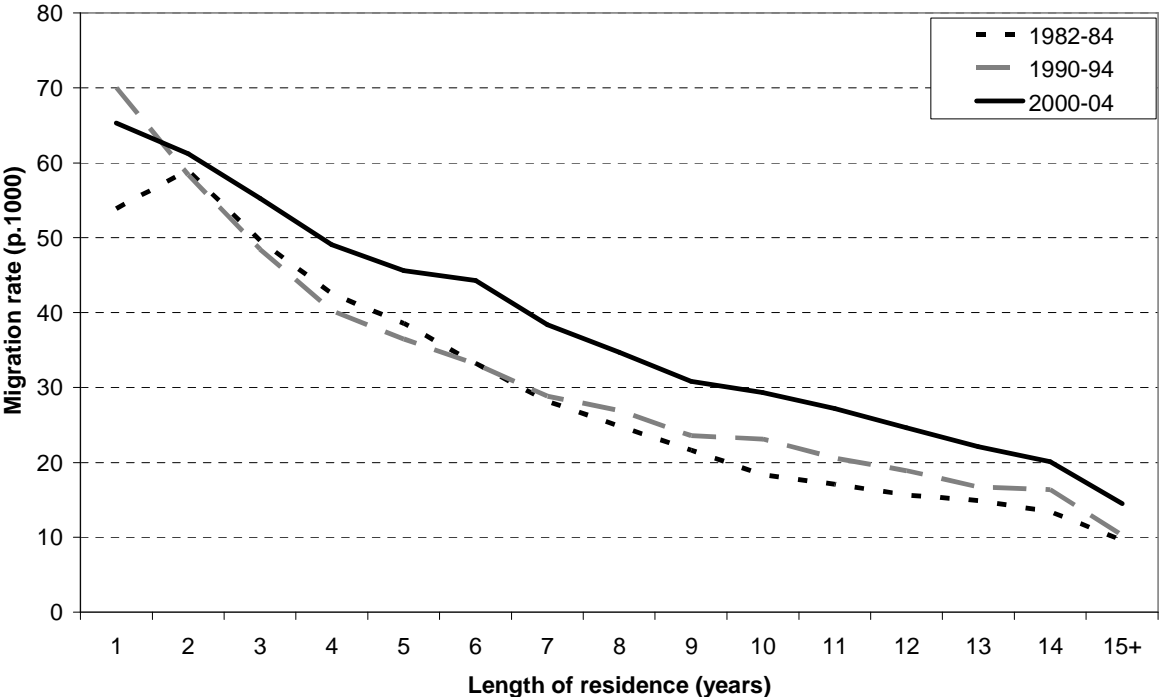
Source: Central Aliens' Register.

Decennial evolutions in crude migration rates can be decomposed with a method following the principle of standardization. Structural effects inherent to the changing lengths of stay of

the migrant stock are estimated along with behavioural effects attributable to differential behaviour of successive immigrant cohorts[4]:

$$\Delta Structure^{t-1,t} = \sum_{x} M_{x}^{t} * (P_{x}^{t} - P_{x}^{t-1}) \quad \text{and} \quad \Delta Behavior^{t-1,t} = \sum_{x} P_{x}^{t-1} * (M_{x}^{t} - M_{x}^{t-1}),$$

with *Mx* being the migration rate according to the length of stay *x* and *Px* the share represented by the corresponding at risk population in the total migrant population. This provides information on the contribution of quantitative (structural) and qualitative (behavioural) effects of international migration dynamics on the evolution in the overall level of foreigners' mobility in Switzerland.

If the small increase in crude mobility rates between 1981-4 and 1990-4 (from 24 to 26 p.1000) reflects a change in behaviour, the international immigration peak around 1990 inflated the phenomenon (contributing for 27% of the decennial increase; Figure 4, left-hand side). Since foreigners living in Switzerland for a short duration were over-represented compared to a decade before, the population had a more favourable profile for internal migrations. Note also the negative structural effect due to the under-representation of immigrants living in Switzerland for only one year. This can be attributed to the new admission policy, excluding candidates from non-OCDE countries and thus depressing very recent inflows. These newcomers are however much more mobile than ten years ago.

Figure 4: Structural and behavioural effects in the decennial increase of crude migration rate, according to length of residence, first generation 1982-2004.
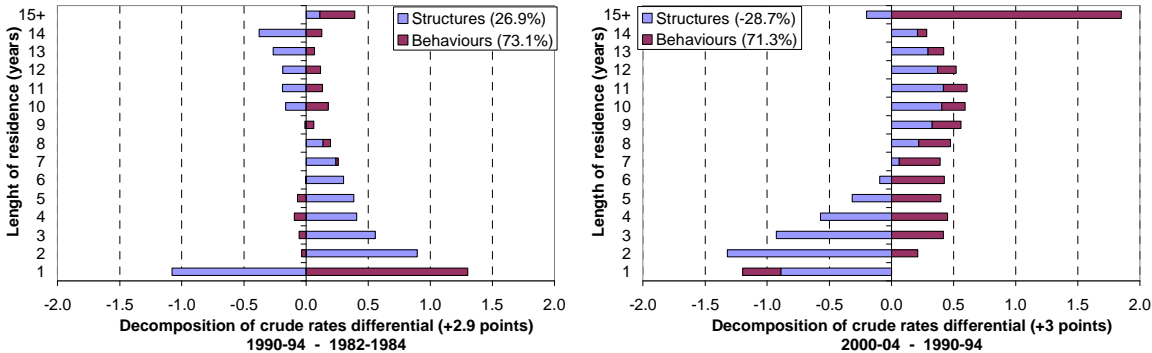
Source: Central Aliens' Register.

The structural effects of international immigration on crude mobility rates were negative in the following decade (responsible for 29% of the absolute change in rates between 1990-4 and 2000-4) because recent immigration was lower. Depressed by this structural impact, crude mobility nevertheless increased (from 26 to 30 p.1000) because of the qualitative change of immigration. Immigrant cohorts arrived between 1995 and 2004 were indeed more mobile than those arrived ten years ago. Note also the increasing mobility of long-term residents, even if migration intensities become very low after 15 years of residence.

However, the trend in interregional mobility over the last twenty years differs according to the nationality of immigrant groups (Table 1). Foreigners from old immigration flows occurring

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[4] Despite its interest, we do not make the same exercise according to the educational level and marital status for the following reasons. Information about education does not vary in time and is only available for a subset of linked trajectories. Furthermore we only know the current civil status rather than the living arrangement of immigrants (many migrants, particularly in the 1980s, were married but left their family in the country of origin).

until the 1980s – as the Italian and the Spanish short term immigrants – show the lowest migration rates. Much of them are already integrated in the Swiss society. In contrast, younger immigrant cohorts from former Yugoslavia and Turkey are characterized by the highest migration intensities in periods of massive inflows during the 1980s, but their mobility then strongly decreased with the years of residence. The "new immigration" flows, increasingly composed of highly qualified workers from neighbouring countries, experienced a strong increase in mobility: as evinced by the Germans, they are characterized by the highest migration rate in 2000-4. The French, Italians, Spaniards, Turks and "other" origins also experienced an increased mobility, but to a much lesser extent.

Table 1: Structural and behavioral effects in the decennial crude migration rate increase, by nationality, first generation 1982-2004.

	Crude rate 1982-84	Differential 1990-94 vs 1982-84	Structural effect	Behavioral effect	Differential 2000-04 vs 1990-94	Structural effect	Behavioral effect
SP	13.5	-1.4	-93 %	7 %	0.8	-46 %	54 %
IT	12.1	0.3	-45 %	55 %	4.1	-19 %	81 %
PT	30.5	-2.1	-60 %	40 %	-7.3	-79 %	21 %
DE	28.8	5.1	53 %	47 %	12.7	44 %	56 %
FR	25.1	4.7	-4 %	96 %	5.4	51 %	49 %
EXY	49.6	-6.1	22 %	-78 %	-16.4	-40 %	-60 %
TU	36.0	-8.7	-100 %	0 %	1.2	-43 %	57 %
Other	44.4	-5.7	-66 %	35 %	1.7	53 %	47 %
Total	**23.8**	**2.6**	**27 %**	**73 %**	**2.9**	**-29 %**	**71 %**

Source: Central Aliens' Register.

These differences reflect the history and duration of presence of their members. In fact, the positive structural impact on mobility found for the total population in 1990-4 only concerned some specific nationality groups (Table 1). The Germans and French were first involved in significant high skilled immigration to Switzerland and have experienced an increase of 5 percentage points in crude mobility rates since 1982-4. More than half of the increase among Germans can be attributed to recent immigration while the remaining increase is due to the fact that these newcomers were more mobile than their predecessors. If a significant structural impact is also observed for immigrants from former Yugoslavia, inflows were mainly composed by family reunifications after the countries' exclusion from the official labour force recruitment regions in 1992. These cohorts were less prone to internal migration than the former composed mainly by active men. The crude rate therefore declined as a result of a dominant and negative behavioural effect due to this qualitative change of immigration. The Turks as well as individuals from the remaining countries also experienced a sharp decline in crude migration rates (-9 and -6 percentage points respectively), which is however mainly due to structural effects of the 1992 policy implementation. A negative structural effect is also found for Italians, Spaniards and more particularly the Portuguese. Additionally to lower inflows, return migration motivated by the origin countries' adhesion to the European Union may explain this trend.

A decade later, all nationalities experienced a negative structural impact on crude mobility rates because recent immigration was lower compared to the early 1990s level. The Germans, French as well as individuals from other countries are the only exception probably because they compose the major pool of the new high skilled immigration. Crude mobility rates for Germans indeed increased by 13 percentage points until 2000-04 because of both, an

overrepresentation of recent immigrants and a higher mobility of these cohorts compared to those arrived a decade earlier (accounting respectively for half the increase in crude rates). Similar trends, though less marked, are also observed among the French and other nationalities. Even if the new immigration was less pronounced from Southern Europe, the profile of the recent cohorts, especially Italians, also seems more favourable to mobility. The crude mobility rate has been inflated by a behavioural effect, as well. The sharp drop in mobility among the former Yugoslavians (-16 percentage points) can be attributed to lower immigration (responsible for 40% of the decrease in mobility) combined with lower mobility of the newcomers. Similarly to the earlier decade, the propensity to move decreased further among recent newcomers. Many immigrants from the Balkans have applied for asylum when they entered Switzerland during the 1990s. They have been distributed among cantons and were denied to leave the cantonal territory they were assigned to, until they were granted the refugee status (implying an annual or permanent residence permit). This procedure took several years and may have fixed spatially the numerous families among them.

Investigating internal mobility behaviours in different phases of the Swiss immigration

Having identified the respective contribution of structural and behavioural effects of immigration on the internal redistribution of foreigners, we now turn to a closer investigation of the latter behavioural effects. Among others, we aim to test in a multivariate approach the positive association of high-skilled immigration and internal mobility evinced from the observed trends by nationalities above. Discrete time multilevel survival models estimate the logit of the probability to engage in a first and a second internal movement (i.e. outmigration) once a foreigner settled in a given SM region. All independent variables are time-varying, except the educational level as well as contextual characteristics. The latter are estimated for the 106 SM regions in 1990 and include: presence of an urban centre, regional language, importance of migrant networks (% of foreigners), economic dynamics (unemployment rate among foreigners) as well as economic specialisation (measured by the localisation rate of actives by main economic sectors[5]).

Simple random intercept models are specified (see Rabash et al. 2005)[6]. Period changes in individual and contextual determinants are assessed in comparing odds ratios (i.e. exponentials of logits) estimated from three models referring to the main phases of Swiss immigration: the period of active labour recruitment and rotation (1982-1991), the period characterized by the new admission policy excluding low skilled candidates from non OCDE countries (1992-1998) and the period of sharp increase of high skilled immigration (1999-

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[5] Defined as the ratio between the proportion of actives in a specific sector in region j and the proportion prevalent in whole Switzerland.

For the agricultural sector :
$$QL_{Agr} = \frac{\dfrac{N_{Agr.j}}{N_{TOT.j}}}{\dfrac{N_{Agr}}{N_{TOT}}}.$$

[6] The logit of the probability to emigrate from a given SM region is predicted by the mean risk estimated all over Switzerland (β_0) and several individual and contextual characteristics (respectively x_{1ij} and W_{1j}).

$$y_{ij} = \beta_0 + \beta_1 x_{1ij} + \alpha_1 W_{1j} + (u_{0j} + e_{0ij})$$

The variance of the estimated logit is partitioned in a variation of individual risks within SM regions (supposed to be standard and equal in all regions, corresponding to e_{0ij}) as well as a variation of mean risks by region (u_{0j}).

2004). The sensibility of individual behaviours to contextual characteristics is estimated through the introduction in the model of cross-level interaction effects.

After controlling the effects of length of residence, a significant information results from the different models tested (see Table 2): individual and contextual determinants are not only the same across nationalities (not shown), but most of them remain stable over the three periods as well as across the orders of moves. We therefore comment the general model and point to specific period effects when they are relevant.

Table 2: Determinants of the first and second internal migration, results of a random intercept survival model, first generation immigrated after 1980, 1982-2004.

| Individual determinants	1st migration												2nd mig.	
	1982-2004						1982-1991		1992-1998		1999-2004		1982-2004	
	O.R.	Sig	O.R.	Sig	O.R.	Sig	O.R.	Sig	O.R.	Sig	O.R.	Sig	O.R.	Sig
Sex														
Male	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Female	0.90	*	0.90	*	0.89	*	0.92	*	0.92	*	0.89	*	0.86	*
Age														
16-29	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
30-44	0.81	*	0.81	*	0.82	*	0.78	*	0.81	*	0.84	*	0.69	*
45+	0.50	*	0.50	*	0.50	*	0.47	*	0.49	*	0.53	*	0.50	*
Marital status														
Never married	1.29	*	1.29	*	1.29	*	1.25	*	1.30	*	1.32	*	1.26	*
Married	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Divorced, sep.	1.40	*	1.40	*	1.41	*	1.39	*	1.43	*	1.42	*	1.51	*
Length of residence														
one year	1.54	*	1.55	*	1.55	*	1.57	*	1.66	*	1.38	*	1.37	*
2-4 years	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
5-10 years	0.63	*	0.63	*	0.63	*	0.59	*	0.58	*	0.68	*	0.55	*
10 years +	0.38	*	0.37	*	0.37	*	0.32	*	0.33	*	0.38	*	0.31	*
Educational level														
Obligatory	0.71	*	0.81	*	0.80	*	0.84	*	0.78	*	0.77	*	0.86	*
Sec II	1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Tertiairy	1.33	*	1.27	*	1.28	*	1.31	*	1.31	*	1.27	*	0.93	*
Activity status														
Independent	1.21	*	1.21	*	1.22	*	1.71	*	1.29	*	1.12	*		
Dependent	1.00	ns	1.00	ns	1.01	ns	1.45	*	1.02	ns	0.93	*	0.96	*
Not occupied	1.00		1.00		1.00		1.00		1.00		1.00		1.00	

Source: Central Aliens' Register. Note: stat.sign. $* < 0.05$.

As anticipated, migration propensities decline with age, which confirms life cycle effects. If women are less mobile than men, the determinants are very similar according to gender. Married individuals are associated to lower mobility than divorced or widowed and, to a lesser extent, single foreigners. These differentials increase over the periods probably because married migrants were more often alone in the 1980s than in the 1990s. With increasing family reunification since the 1990s, mobility projects become more complex especially when both spouses are economically active. This is the case in two thirds of migrant households (Wanner 2004) and therefore necessitates a double professional integration.

Congruent with expectations from human capital theory, highly skilled migrants migrate more than lower skilled whatever the period under consideration. If education is a proxy for income, high educated migrants not only have more resources but mobility could provide them also higher career returns. Moreover, they are subject to deskilling in the Swiss labour market (Pecoraro 2005), which might motivate further professional mobility to adjust their position to their skills.

However, if internal migration of foreigners has been considered as closely associated to economic activity (Zarin-Nejadan and Murier 2000), our results indicate major period effects. Mobility differentials according to economic activity significantly decreased between the 1980s and the early 21th century (Table 2). The underlying changes are illustrated by the evolution in predicted probabilities of migration by education and occupation in Figure 5 (interaction effects have been introduced in the model for that purpose). If internal migration of active occupied foreigners was higher than among non-occupied ones in 1982-91, its intensity decreased until 1999-2004. Mobility of the non-occupied increased in the same time and both groups now migrate to the same extent. Figure 5 also illustrate that the level of education becomes more important for predicting migration, whereas in the 1980s both characteristics (occupation and education) played a role. This shift certainly points to an increasing mobility of whole family units as opposed to mainly individual migrations before. Spouses, being active or not, follow the professional and residential mobility of their active partner.

Figure 5: Predicted probabilities of the 1st internal migration according to period, activity status and educational level, results of a random intercept survival model, first generation immigrated after 1980, 1982-2004.
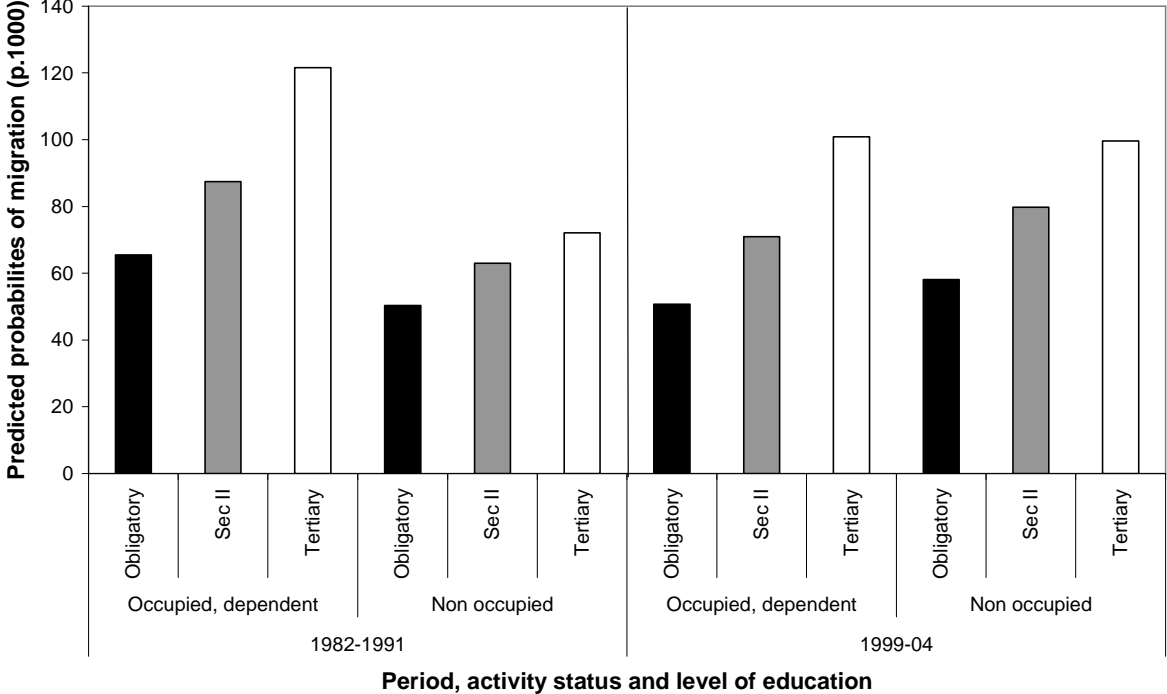
Source: Central Aliens' Register.

After taking into account these individual characteristics, the regional context plays a role on the redistribution of foreigners as well (see Table 3). As anticipated, regional linguistic borders seem to represent barriers to internal mobility. Internal migration propensities are

lower in the French and particularly the Italian speaking regions, which may be associated with their respectively smaller spatial field for mobility compared to the dominant German speaking territory. Foreigners, therefore behave similarly to nationals, whose mobility is constrained within linguistic boundaries as well (Kupiszewski et al., 2000).

Table 3: Determinants of the first and second internal migration, results of a random intercept survival model, first generation immigrated after 1980, 1982-2004. (continuation of Table 2)

Contextual determinants	1st migration 1982-2004 O.R.	Sig	1982-2004 O.R.	Sig	1982-2004 O.R.	Sig	1982-1991 O.R.	Sig	1992-1998 O.R.	Sig	1999-2004 O.R.	Sig	2nd mig. 1982-2004 O.R.	Sig
Urban centre														
Yes			0.83	*	0.75	*	0.74	*	0.74	*	0.78	*	0.87	*
No			1.00		1.00		1.00		1.00		1.00		1.00	
& obl. education			1.06	*	0.88	*	0.86	*	0.89	*	0.91	*	0.92	*
& tert. education			0.64	*	1.07	*	1.04	ns	1.06	*	1.07	*	1.17	*
Linguistic region														
German			1.00		1.00		1.00		1.00		1.00		1.00	
French			0.73	*	0.83	*	0.87	ns	0.80	*	0.85	*	0.95	ns
Italian			0.62	*	0.77	*	0.76	*	0.76	*	0.76	*	0.95	ns
Density of foreigners (%)					0.92	ns	0.87	*	0.91	ns	0.96	ns	0.92	*
& obl. education					0.90	*	0.86	*	0.91	*	0.91	*	0.94	*
& tertiary education					0.95	*	0.99	ns	0.98	ns	0.90	*	0.99	ns
Unemployment foreigners (%)					1.01	ns	1.03	ns	1.02	ns	0.98	ns	1.01	ns
& obl. education					0.96	*	0.97	*	0.94	*	0.97	*	0.99	ns
& tertiary education					1.05	*	1.05	*	1.07	*	1.05	*	1.00	ns
Economic specialization														
Primary					1.01	*	1.01	ns	1.01	*	1.01	*	1.01	*
Industry					1.01	ns	1.01	ns	1.01	ns	1.02	ns	1.00	ns
Construction					1.02	ns	1.03	*	1.02	ns	1.02	ns	1.01	ns
Hotellerie-Restauration					1.01	*	1.02	*	1.01	*	1.01	*	1.02	*
Trade-Reparation					1.03	ns	1.00	ns	1.05	*	1.02	ns	1.01	ns
Finance, Insurances, Immobilier					1.01	ns	1.01	ns	1.01	ns	1.01	ns	1.00	ns
Small services					0.97	ns	0.96	ns	0.96	ns	0.97	ns	0.97	ns
Teaching					1.00	ns	1.00	ns	1.00	ns	1.00	ns	1.00	ns
Health, Ageing, invalid					1.01	ns	1.00	ns	1.01	ns	1.01	ns	1.00	ns
σ^2 regional	0.19	*	0.08	*	0.04	*	0.05	*	0.06	*	0.04	*	0.03	*
in % of σ^2 total	5.4	%	2.5	%	1.3	%	1.6	%	1.7	%	1.3	%	0.8	%

Source: Central Aliens' Register. Note: stat.sign. $* < 0.05$.

Urban centrality is one of the main regional determinants and inhibits departures. This confirms the importance of spatial opportunities in cities, which become even more

significant once the presence of networks is controlled. However, our results suggest a decrease in the urban attraction over the periods, particularly for high skilled migrants. They tend to leave city centres more frequently than the lower skilled since the 1990s and are particularly expelled in their second internal move. The decade is also characterized by a peak in intra-regional migrations. Central city communes indeed experienced a declining attractiveness over the last 20 years, whereas periurban communes manage to retain an increasing number of foreign migrants (Table 4). Hence, the residential preferences of high skilled migrants seem to converge to those prevalent among the Swiss nationals.

Table 4: Inter-communal migration efficiency by type of communes, total foreign population, 1982-2004.

	1982-5	1991-95	2001-04
Central	-0.06	-0.05	-0.09
Suburban	0.10	0.07	0.12
High income	0.05	0.09	**0.10**
Peri-urban	0.05	0.07	**0.09**
Touristic	-0.21	-0.27	-0.32
Industrial	-0.12	-0.09	-0.10
Comuting	-0.03	0.02	0.00
Mixed	-0.10	-0.11	-0.09
Agricultural	-0.13	-0.07	-0.14

Source: Central Aliens' Register.

If the clustering of immigrants is confirmed by the model, the retention effect of migrant networks changes over periods, as well. Its independent effect is only significant in the first period (during the 1980s). Later on, migrants' behaviours vary according to the educational level. Low skilled migrants tend to be retained by networks, whereas high skilled migrants seem to be less influenced: networks neither significantly influence the first nor the second move, except in the last period when high skilled migrants are retained as well. They may form spatially separated communities from the low-skilled migrants as indicated by the spatial segregation of nationalities in some urban areas such as Lausanne (Piguet 1994): low-skilled migrants settled more in the centre as well as the Eastern suburban communes, whereas the high-skilled are concentrated in the Western periurban areas of the cities.

Moreover, the introduction of interaction effects between the presence of networks and length of residence provides additional support to the spatial assimilation theory. The importance of migrant networks decreases with increasing length of residence (Figure 6). Recent immigrants tend more to leave regions with a lower rather than a higher share of foreigners, whereas immigrants living in Switzerland for at least ten years behave completely differently: they are characterized by a higher mobility from immigrant clusters compared to regions were Swiss nationals form the overwhelming majority.

Figure 6: Predicted probabilities of the first internal migration according to length of residence and importance of migrant networks, results of a random intercept survival model, 1st generation 1982-2004.
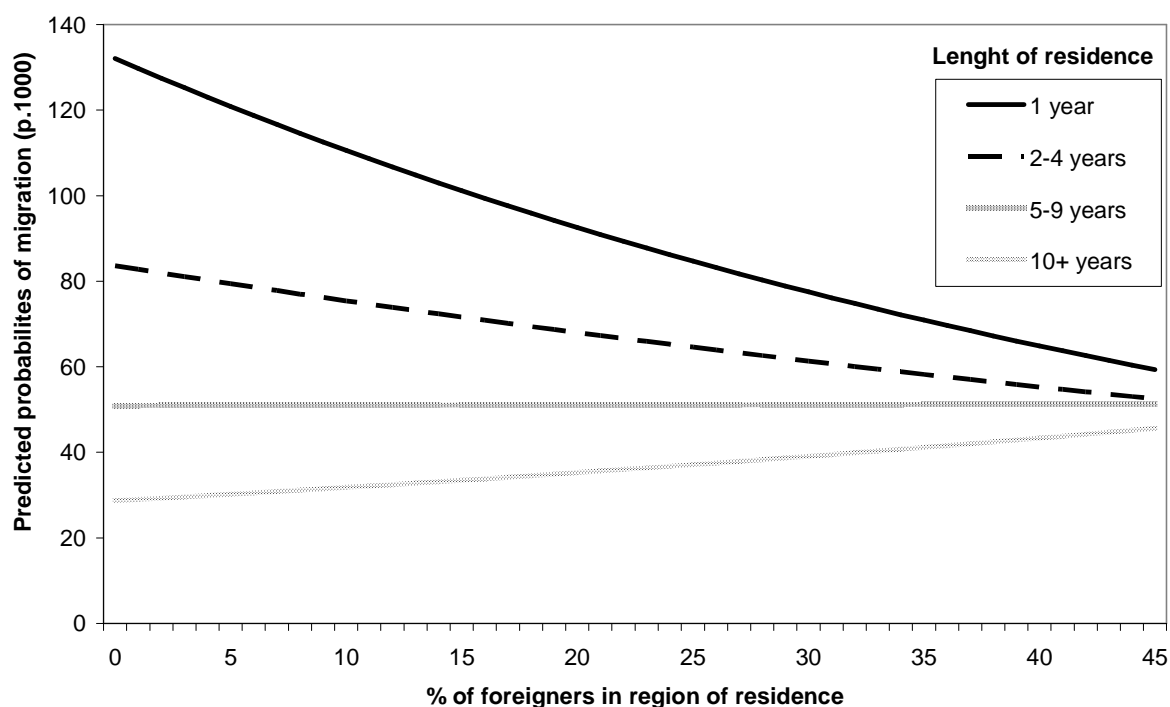
Source: Central Aliens' Register.

Similar to social dynamics, regional economic performance also influence migratory behaviours differently according to the educational profile. While relatively high unemployment rates constrain mobility of the lower skilled, they boost the departures of high skilled individuals. These differential effects were particularly pronounced during the economic recession in the 1990s. Provided with more resources, high skilled workers seemed to be more flexible in the multi-regional labour market and adapt themselves to regional economic dynamics. The economic structure of the SM regions played a role, too. Foreigners who settled in regions specialized in the immigrants' economic sectors (agriculture-hotels-restaurants-construction) were significantly more expelled than those living in other regions.

Discussion and conclusion

Switzerland experienced important changes in international migration flows over the last 30 years. Relying on individual immigrant trajectories, we were able to provide direct and indirect evidence that illustrate how these dynamics influence internal mobility of foreigners. Interregional migration increased between 1982 and 2004 and became higher than among the natives. The international immigration peak around 1990 inflated the trend because recent immigrants – associated to the highest likelihood to move internally – were overrepresented. However, structural impacts depressed crude rates in the last decade. The international inflow was indeed lower because of the policy change in 1992, but internal mobility nevertheless increased until 2000-4 because of a behavioural effect. Recent immigrant cohorts were indeed spatially more mobile than those arrived a decade earlier.

The qualitative change of recent immigrant cohorts is exemplified by a larger representation of high skilled individuals, which certainly increased crude mobility rates. High skilled immigrants are associated to the highest likelihood to move within Switzerland because of the presumably high returns from mobility and lower regional retention effects. They are more flexible and adapt themselves more easily to regional economic dynamics. Moreover, Swiss immigration had a strong geographic inertia due to the stability of foreign labour contingents by regions and economic sectors (Piguet 2004). But our results indicate a redistribution from traditional "entry doors" to other regions characterized by an emergent economic structure. Thus, if increasing skills of immigrants sustained structural change in the Swiss economy (Becker et al. 2008), the internal migration of foreigners may also play a role in redistributing them to economically dynamic regions.

Immigrants also seem to converge to internal migration patterns observed among the natives, particularly in the recent past. The Swiss also leave regions in economic depression and are characterized by a peri-urbanisation for several decades (Kupszewski et al. 2000). High skilled migrants are less retained in their mobility by social networks than the low skilled and increasingly participate to the centrifugal movement out of city centres. Again, dynamics in immigration may have sustained this trend. The periurbanisation of foreigners is probably related to the recent immigrants' higher resource endowment as well as the increase in family migration or reunification. While this spatial assimilation may enhance social cohesion in a multicultural country it remains selective according to skills. Furthermore, the demographic gain of international immigration for urban centres is not entirely retained, as current internal flows appear to cross each other: while low skilled foreigners enter or remain in city centres, the high skilled tend to leave these areas.

Finally, differences in internal mobility between nationality groups can be explained by the duration of residence as well as by the changing socioeconomic profiles of immigrants. Similarly to other industrialized countries as the United Sates, Great Britain and Canada (Gurak and Kritz 2000; Finney et Simpson 2008; Newbold 1996), the socioeconomic composition of immigrant groups in Switzerland seems to be more important than ethnic origin in shaping internal mobility patterns. Since the profile of the immigrant population is increasingly determined by international migration policies, the latter also impact on internal mobility patterns.

References

Becker, L., T. Liebig and A. Sousa-Poza (2008): "Migration Policy and Industrial Structure: The Case of Switzerland", in *International Migration* 46(2), 81-107.

Boyd, Monica (1989): "Family and Personal Networks in International Migration: Recent Developments and New Agendas", in *International Migration Review* 23(3), pp. 638-670.

Carnazzi Weber, S. et Sylvie Golay (2005): *Interne Migration in der Schweiz*, Neuchâtel: OFS.

Champion, A.G. (1994): "International Migration and Demographic Change in the Developed World", in *Urban Studies* 31, 653-677.

Champion, A.G. (ed) (1989): *Counterurbanization, The Changing Pace and Nature of Population Deconcentration*, London: Edward Arnold.

Courgeau, D. et E. Lelièvre (2003) : "Les motifs individuels et sociaux des migrations", in Caselli G. et al. (eds) : *Démographie : Analyse et Synthèse – Les déterminants de la migration*, tome IV, INED : Paris, p. 147-172.

Da Cunha A. et J.F. Roth (2004): *Metropolisierung, Städte und Agglomeration – Soziodemographische Struktur und Dynamik von urbanen Räumen*, Neuchâtel: OFS.

Finney N., L. Simpson (2008): "Internal Migration and Ethnic Groups: Evidence for Britain from the 2001 Census", *Population, Space and Place* 14, 63-83.

Gurak, D.T. and M.M. Kritz (2000). "Context Determinants of Interstate Migration of U.S. Immigrants" Social Forces 78.3 (March): 1017-1039.

Gurak, Douglas T. and Fe Caces (1992): "Migration Networks and the Spacing of Migration Systems", in Mary M. Kritz, Lin Lean Lim, Hania Zlotnik (eds): *International Migration Systems: a Global Approach*, p. 150-176.

Greenwood M.J. (1985): "Human Migration: Theory, Models and Empirical Studies", in *Journal of Regional Science* 25(4), 521-544.

King R., Skeldon R., Vullnerati J. (2008): *Internal and International Migration: Bridging the Theoretical Divide*, Paper prepared for the IMISCOE "Theories of Migration and Social Change Conference", St.Anne's College, Oxford, 1-3 July 2008

Kupiszewski M., M. Schuler, M. Reichle et al. (2000): *Internal Migration and Regional Population Dynamics in Europe: Switzerland Case Study*, School of Geography, University of Leads.

Lee, Everett S. (1966): "A theory of migration", in *Demography* 3(1), pp. 47-57.

Mahnig, Hans et Etienne Piguet (2003) : "La politique suisse d'immigration de 1948 à 1998 : évolution et effet", in Wicker, H.-R. et al. (eds) : *Les migrations et la Suisse*, Zürich : Seismo, 63-103.

Massey, Douglas S., Brendan P. Mullan (1984): "Process of Hispanic and Black Spatial Assimilation", *The American Journal of Sociology* 89(4), pp. 836-873

Newbold, K. Bruce (1999a): "Spatial Distribution and Redistribution of Immigrants in the Metropolitan United States, 1980 and 1990", in *Economic Geography* 75(3), pp. 254-271.

Newbold K. Bruce (1999b): "Internal Migration of the foreign-born: Population Concentration or Dispersion", in *Population and Environment: A Journal of Interdisciplinary Studies* 20(3)

Newbold, Bruce K. (1996): "Internal Migration of the Foreign-Born in Canada", in *International Migration Review* 30(3), pp 738747.

Nogle, June Marie (1994): "Internal Migration for Recent Immigrants to Canada", *International Migration Review* 28(1), 31-48.

BFS (2007): *Historisches Gemeindeverzeichniss der Schweiz*, Neuenburg: BFS.

Pecoraro, M. (2005) : "Les migrants hautement qualifiés", in Haug W. et Wanner Ph. (eds) : *Migrants et marché du travail – Compétences et insertion professionnelle des personnes d'origine étrangère en Suisse*, Neuchâtel : OFS.

Piguet, E. (2005): *L'immigration en Suisse depuis 1948. Une analyse des flux migratoires*, Seismo: Zürich

Piguet, E. et R. Besson (2005) : "L'emploi indépendant des personnes d'origine étrangère", in Haug W. et Wanner Ph. (eds) : *Migrants et marché du travail – Compétences et insertion professionnelle des personnes d'origine étrangère en Suisse*, Neuchâtel : OFS.

Piguet, E. (1994) : "L'immigration et ses espaces – Géographie des populations d'origine étrangère à Lausanne", in *Geographica Helvetica* 1994-2, 63-71.

Rabash, J., F. Steele, W. Browne et al. (2005): *A User's Guide to MLWin*, Center for Multilevel Modelling, University of Bristol.

Akresh, Ilana Redstone (2008): "Occupational Trajectories of Legal U.S. Immigrants: Downgrading and Recovery", in *Population and Development Review* 34(3): 435-456.

Recano-Valverde Joaquin (2006): *The internal migration of foreigners in Spain*, Paper prepared for the 2006 European Population conference, Liverpool, June 2006.

Schuler, M., P. Dessemontet et D. Joye (2005): *Les niveaux géographiques de la Suisse*, OFS : Neuchâtel.

Sjaastad, Larry A. (1962): "The Costs and Returns of Human Migration", *The Journal of Political Economy* 70(5): 80-93

Wanner, Ph. (2004): *Migration et intégration. Population étrangères en Suisse*, OFS: Neuchâtel

Zarin-Nejadan, Milad, Thierry Murier (2000): *Analyse des mouvements migratoires internes des étrangers en suisse 1981-1995*, OFS: Démos, Bulletin d'information démographique N. 3/2000.