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Skilled Immigration Flows and Free Mobility in France and Switzerland

Dominique M. Gross (Simon Fraser University)
Nicolas Schmitt (Simon Fraser University)

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Courriel : mepa.apme@ic.gc.ca

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Abstract

This paper seeks to identify the main factors why skilled workers migrate to France and to Switzerland and whether their relative role changed when the countries moved from a limiting immigration policy to free mobility. Not surprisingly, the introduction of free mobility with only some source countries created a shift in the distribution of origins of skilled immigrants toward nationals from countries with an agreement. This is especially the case for countries with a common border with France and Switzerland and also for Portugal. Yet the shift varies across skill degrees and appears related to how France and Switzerland were able to compete for such immigrants. In particular, a rising proportion of highly skilled foreign immigrants to Switzerland come from high income countries while those going to France come from developing countries with no free mobility agreement. As expected free mobility enhances the role of push and pull factors. However, within the skilled worker categories, groups with different skill intensities reacted differently. Generally, free mobility changed permanently the dynamics of the inflow of highly skilled workers (growth effect) while it induces only a temporary effect for semi-skilled workers (level effect). Yet not all factors changed and highly-skilled workers became particularly sensitive to relative income with free mobility. This may be the reason why France seems to have more difficulties attracting highly skilled workers than Switzerland. Moreover, the highly skilled are not sensitive to the presence of a cultural network whether they can move freely or not unlike their less skilled counterparts whose reliance on the presence of a culturally alike community is further enhanced with free mobility.

Résumé

Les auteurs tentent de cerner les principaux facteurs qui expliquent la migration de travailleurs qualifiés vers la France et la Suisse et de savoir si le rôle relatif de ces facteurs change lorsque les pays passent d'une politique restrictive en matière d'immigration à une politique de libre circulation de la main-d'œuvre. Il n'est pas surprenant de constater que l'introduction de la libre circulation de la main-d'œuvre dans certains pays d'origine seulement a entraîné un changement dans la répartition des immigrants spécialisés selon leur pays d'origine en faveur des ressortissants provenant de pays ayant signé un accord. Cela est particulièrement le cas des pays qui partagent une frontière avec la France ou la Suisse et aussi du Portugal. Néanmoins, le changement varie selon le degré de spécialisation des travailleurs et semble lié à la façon dont la France et la Suisse ont pu attirer ce genre d'immigrants. En effet, une proportion de plus en plus grande de travailleurs hautement spécialisés qui immigrent en Suisse proviennent de pays à revenu élevé, tandis que ceux qui immigrent en France proviennent de pays en développement qui n'ont pas d'accords sur la libre circulation des travailleurs. Comme on s'y attendait, la libre circulation de la main-d'œuvre accentue le rôle qu'exercent le facteur d'incitation au départ et le facteur d'attraction. Toutefois, au sein des catégories de travailleurs qualifiés, les groupes réagissent différemment selon leur niveau de compétences. En général, la libre circulation de la main-d'œuvre a modifié de façon permanente la dynamique des entrées de travailleurs hautement qualifiés (effet de croissance), tandis qu'elle n'a produit qu'un effet temporaire pour les travailleurs semi-qualifiés (effet de niveau). Néanmoins, les facteurs n'ont pas tous changé, et les travailleurs hautement qualifiés sont devenus particulièrement sensibles au revenu relatif dans un contexte de libre circulation de la main-d'œuvre. C'est peut-être la raison pour laquelle la France

a plus de difficulté à attirer des travailleurs hautement qualifiés que la Suisse. De plus, les travailleurs hautement qualifiés ne sont pas sensibles à la présence d'un réseau culturel, qu'ils puissent circuler librement ou non, contrairement aux travailleurs qualifiés pour qui la présence d'une communauté de culture semblable est encore plus importante dans un contexte de libre circulation de la main-d'œuvre.

1. Introduction

The goal of this paper is to identify the main reasons for skilled workers to migrate and whether these reasons change when a country move from an actively limiting immigration policy to complete free mobility. To do so we use the cases of France and Switzerland, two countries with very similar immigration policies, which have experienced full liberalization of movement of people at different times in the past but with the same source countries. They also have very comparable and reliable information on the flows of skilled immigrants. From our results we attempt to draw broad inferences about the possible consequences for Canada of introducing free mobility within NAFTA.

The French and Swiss experiences with free mobility are interesting to investigate relative to Canada for at least two reasons. First, information on the skill and occupation characteristics of immigrant workers as recorded by immigration departments matches their actual occupation as acceptance in the country is conditional upon having a job contract. As it has been shown in several studies, immigrants to Canada often end in occupations which correspond neither to their declared intended occupation when entering the country nor to their actual training (see for example, Green, 1995 and Couton, 2002). The fact that immigrant workers to France and Switzerland receive a working and resident permits on the basis of an actual work contract and that permits are conditional of not changing occupations ensures statistical accuracy. Hence, the impact of relaxing mobility constraints for work-related migration can be investigated with confidence for the two countries and a similar study would simply not be feasible using Canadian data on immigration inflows. Second, Canada does not have free mobility agreements with other countries[1] but in our view there is no obvious reason to think that conclusions drawn from these countries' experience would not be indicative of what might happen within North America if it did fully open its borders (may be with

[1] TN-NAFTA visas are the closest to a free mobility system but they still exhibit constraints typical of temporary visas (duration one-year at a time, specific occupations) even though they are processed at the border when entering the United States.

the exception of the intensity of the response to free mobility as North Americans tend to be more mobile than Europeans)

Why then consider specifically France and Switzerland as destination countries? First, France as a founding member of the European Community has a long history of free mobility and Switzerland through its recent agreement with the European Union has just started experiencing with it. This allows for an analysis of the short and long term impact of free mobility with the same set of countries and a comparison of its impact on two similar economies yet with somewhat different needs for skilled workers. Second, the two countries have had similar approaches to immigration policy by anchoring it in the admission of workers. Third, as a result of their policy, both countries have detailed administrative records on the *inflow of immigrant workers* and their skill characteristics to which we have been granted access. Thus, it is possible to isolate the impact of immigration drivers on flows of individuals, all skilled, but with various types of skills who migrate for work-related motives. Clearly the approach directly matches closely the concept of brain drain/circulation.

Over the past 30 years, France, as one of the founders of the European Community (now the European Union, EU), has experienced the progressive introduction of free mobility of people with a variety of countries (rich and poor). Free mobility became first effective among the nine founding members in the late 1960s and early 1970s; later, Greece (1988) and, Portugal and Spain (1992) gained access to it; finally, Austria, Norway, Finland and Sweden, when deciding to participate in the single market started implemented free mobility with the EU in 1994. Switzerland is interesting for different reasons. It is a country with one of the highest standard of living in the world which has endured chronic labor shortages for most of the past 40 years. It does not belong to the European Union and thus did not have free mobility imposed through a multilateral agreement. However, in

the 1990s, it engaged in negotiations with the EU which resulted in the implementation of free labor mobility between Switzerland and the EU15 in June 2002.[2] Even though the Swiss experience is recent, some impact is already observable. We therefore can compare these initial effects with those that have developed in France through time.

The descriptive analysis shows that in both countries, as expected, the introduction of free mobility with a subset of countries sources of immigration has created a shift in the distribution of origins of skilled immigrants toward citizens from countries with an agreement. A geographical redistribution within the set of source countries with a free mobility agreement has also taken place and border countries of both France and Switzerland are taking most advantage of the policy with one exception, Portugal, which has seen migration increase drastically. However, at the high end of the skill scale, France seems to have had much more difficulties attracting workers from rich OECD countries (with and without a free-mobility agreement) than Switzerland. As a consequence, a rising proportion of highly skilled foreign immigrants to France come from developing countries.

The results for a standard model of migration drivers show that within the skilled worker categories, various groups react differently to the move toward free mobility. Also, overall, it is clear that economic factors impact flows of skilled workers with a job contract differently with and without control on immigration. Free mobility changes permanently the profile of the inflows of highly skilled workers while it induces only a temporary effect for semi-skilled workers. When economic factors are allowed to determine those changes, it is found that, highly-skilled workers become much more sensitive to relative income. And Switzerland shows that this effect arises shortly after liberalization. Also the highly skilled are not sensible to cultural network whether they

[2] The EU-15 countries were: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, the Netherlands, Portugal, Spain, Sweden, UK.

can move freely or not. Their less skilled counterparts however, do seem to rely on the presence of a culturally alike community.

The next Section provides a short review of immigration policies in France and EU mobility and Section 3 describes the regional evolution of skilled workers flows. Sections 4 and 5 provide similar information for Switzerland. In Section 6, we review the analytical framework and its implementation and Section 7 analyses the econometric results. Section 8 concludes.

2. Immigration Policy in France and EU Free Mobility

In this Section, we describe some of the features of the French immigration policy with respect to non-EU countries and some of the history of the EU free-mobility policy.

2.1. French Immigration Policy

Immigration policy in France is anchored into the *Code des Nationalités* from 1945.[3] One of its key characteristics is that it has never involved explicit quotas on permanent immigrant workers (and immigrants in general) and migration flows have evolved mostly under political or economic impulses without, at least prior to 1983, an effective implementation of the existing rules.[4] In 1983, the implementation of policy regulations was tightened and the yearly flow of new permanent immigrant workers conditioned on the state of the labour market. When filing a request for a non-temporary work permit, employers are required to provide proof that no national can fill the position. Permanent immigrant workers may come to France directly from abroad or they may be already in France and change statuses (i.e., from temporary to permanent or from illegal to permanent). After receiving a working and a residence permit for an initial minimum period of one year, the immigrant

[3] The information for this section is taken from Blanc-Chaléard (2001), Weil (1991) and ILO (2004).
[4] This has resulted into the loss of the control of the growth of the foreign population and to a massive regularization of alien migrants in 1981 (see Gross, 2002).

can get both renewed for successive 10-year periods by the Ministry of Social Affairs, Employment and Solidarity and the Interior Ministry, respectively. Since 1983, no major change of policy for immigrant workers has occurred as successive French governments focused on stimulating returns to home countries and on stricter internal controls of illegal residents. Accordingly, our sample starts in 1983.

2.2. EU Free Mobility

One of the corner stones of the Treaty of Rome (1957) is guaranteed free mobility to all citizens from member countries within the European Community (EC)[5] without discrimination after a 12-year transition period which ended in 1968 (Table 1).[6]

Until 1992, however, there existed a safeguard clause, which allowed EC members to favour national over non-national workers when labour market conditions were severe.[7] By 1980, there was free mobility of workers across nine countries: France, Belgium, Netherlands, Luxemburg, Germany, Italy, UK, Ireland, and Denmark. Greece became a member of the EC in 1981 and free mobility of people with the rest of the EC became effective on January 1, 1988.[8] In 1988, Portugal and Spain joined the Community and according to their accession treaty, free mobility with the other members was to become effective on January 1, 1993.[9] However, the 1992-single market agreement

[5] See EEC (1997), Art. 48.1. Exceptions include public administration and limitations may be introduced for security, health and the like (Art. 48.3 and 48.4).

[6] See EEC (1968), pp. 0002-0012. Note that free mobility does not apply to citizens from countries not member of the EC who are residents of EC countries.

[7] The single-market agreement from 1992 eliminated this safeguard provision (see EEC, 1992). To our knowledge, this provision has not been used by France (or by another EC member) between 1968 and 1992.

[8] See EEC (1979) p. 0027, Art 45 and 46. There were exceptions to this rule during the transition period 1981-88, especially for the Greek nationals already residing in France.

[9] See EEC (1985) p. 0035, Art 56 and 57 and Art 216 and 217. There were exceptions for Spanish and Portuguese nationals already residents in an EC country during the period.

which created the European Union (EU) shortened the transition period and free mobility became effective on January 1, 1992.[10]

The European Economic Area (EEA) was also created in 1992 regrouping Austria, Finland, Iceland, Liechtenstein, Norway and, Sweden. These countries initially did not wish to be full members of the EU but agreed to adopt most economic policies, including free mobility of workers. Free mobility between EEA and EU countries became effective in 1994 without transitory period.[11] In 1995, Austria, Finland and Sweden became members of the Union and their accession had no new implications for mobility. Our sample ends in 2000 as workers from EU countries are no longer registered after that year.

Hence, based on mobility considerations, immigration-source countries for France can be classified into three categories: (i) countries with which free mobility is in place between 1983 and 2000 (Belgium, Netherlands, Luxemburg, Germany, Italy, UK, Ireland, and Denmark); (ii) countries with which free mobility became implemented during the period (Greece, Portugal, Spain, Austria, Finland, Norway, and Sweden); (iii) and countries with which France had no agreement on mobility (i.e., the rest of the world). In the next section, we provide an overview of the evolution of the workers' flows according to skill definitions and regions.

3. Immigrant workers to France: The numbers

Permanent immigrant workers to France are individuals who have a work contract for at least 12-month and obtain a work and residence permit. Our data, therefore, does not cover immigrants coming through the family reunification category and who may decide to work sometime later. Permanent foreign workers enjoy equal rights and social coverage as national workers including

[10] See EEC (1991).

[11] See EEC (1994), Appendix V, pp. 0325-0326. Hence, citizens from the EEA countries benefit from the same rights and obligations as EU citizens.

unemployment insurance and support services to find a new job (ILO, 2004). It is interesting to note that, even though the definitions are not strictly identical, the relative size of immigrant workers to Canada is within the range defined by our data for France and Switzerland. Using the OECD definitions, principal applicants in the skilled worker category represented 20.6% of the total flow of immigrants to Canada in 1998. The percentage for France in the same year is 8.8% while it is 39.4% for Switzerland in 2002 (OECD, 2004).[12]

3.1. Total flows from 1983 to 2000.

Statistics from the French Office for International Migration (OMI) identify three levels of workers' skills based on occupations: Unskilled and specialised workers (called hereafter low skilled); professional and qualified workers (called hereafter semi-skilled) and managers, engineers and technicians (called hereafter highly skilled).[13] We consider workers belonging to the last two definitions are skilled but as often as possible analyse them separately. The study covers 261,761 immigrant workers who represented 91% of all immigrant workers to France between 1983 and 2000. Although this paper focuses on skilled workers, it is interesting to contrast their evolution with that of low-skilled immigrant workers since most Westerns countries, France included, are trying to change the skill composition of the incoming flows of migrants.

As it is clear from Figure 1, the skill distribution of immigrant workers to France changed considerably between 1983 and 2000.

While the proportion of semi-skilled workers remained relatively constant around 1/3 throughout the period, a significant transfer occurred from low to highly skilled. In the mid 1980s, the shares were

[12] It must be noted that the numbers for France include only the newcomers and not the regularization of workers already in France, which occurs yearly but for which no disaggregate data by skill levels is available.

[13] It appears that the skill worker category as defined by the French agency covers categories 1 to 3 in the ISCO, i.e., individuals with tertiary education.

42% and 26% respectively and by the end of the 1990s, they were reversed with 23.5% of low skilled and 48% of highly skilled. In 1992, France entered a phase of active search for highly skilled workers to fill perceived deficiencies in the internal market and this is clearly reflected in the figure.[14] However, 1992 is also the year of access to mobility for poorer EU-countries (Spain and Portugal) which influenced drastically the skill composition in the opposite direction. In Table 2, where the geographical and skill distributions are combined, Portugal exhibits the largest contribution to the low skill category, well above that of any other country.

In the upper panel, about 2/3 of all immigrant workers are from high-OECD income countries (including Israel) and also a more than proportionate share of them is highly skilled (i.e., they represent 74% of all skilled migrants). Middle East and North Africa countries represent the 2nd largest source with 15% of all migrants and equal shares across skill categories. Latin America and South Asia also exhibit a balanced distribution of skills but their overall contribution to workers' immigration is very small (1.3% and 0.7% respectively). Finally, for Sub-Sahara Africa, Central Europe/Central Asia and East Asia Pacific, the shares in total workers' immigration are somewhat larger with 6.3%, 7% and 3.4%. However, these three regions have in common a more than proportionate share of unskilled workers and an extremely low relative contribution to the skilled category (less than 4%). Also, variations within regions can be very large. For example, in the high income country category, the largest number of immigrant workers comes from Portugal (44,193) and 63.2% are low skilled; for the United States, only 1.3% are low skilled. Also, Brazilian and Polish immigrants appear much less skilled then those from other countries in their respective regions.

[14] The immigration legislation changes very little in the 1990s but some minor amendments are targeted to an easing of rules for educated workers. For example, in June 1996, France ratifies an agreement which simplifies the procedures for the transfer of employees of foreign firms to their affiliates. In July 1997, that arrangement is extended to researchers, teachers in higher education, technicians and outstanding artists (OECD, 1998, p.106, Courade, 1997, p.25).

3.2. Evolution of the flows through time

Through time the various skill categories have evolved quite differently and this is clear in Figure 2.

First, there is a large surge in the flows in the early 1990s. The increase is mainly the result of the accession of Portugal and Spain to free mobility within the European Community in 1992. Second, between the beginning and the end of the sample period, there is no trend in the flow of skilled migrants while the flow of low-skilled declines slightly. Focusing on skilled workers, there is a number of interesting features in the evolution of the flows (see Figure 3 and 4).

First, among rich countries, most semi-skilled workers come from EU15/EFTA countries, and very few are from other rich OECD countries. Second, after rising steadily, the share of semi-skilled immigrants from developing countries dropped sharply in 1991 and remained low thereafter.[15] Third, the evolution of flows of highly skilled workers is quite different from that of semi-skilled. Until the mid-1990s, most of them came from rich countries. Since then, however, the flow of highly-skilled immigrant workers from developing countries has been rising sharply mirrored by a comparable fall in that of workers from EU15/EFTA countries. One would have expected that economic integration with EU15/EFTA countries had favoured mobility of the highly skilled but this does not appear to be the case. History may suggest a likely scenario. In the 1950s and 1960s France had difficulties attracting Italian workers who were offered much better working conditions in Germany, Switzerland and the Netherlands (Blanc-Chaléard, 2001, chapter 4, section 3). In the 21st century, competition for highly-skilled immigrant workers is becoming more intense among high income countries and France may again face difficulties in attracting them. Hence,

[15] Interestingly, this behavior is very similar to that of the low-skilled category but the decrease in the share of the low-skilled workers coming from developing countries is even more dramatic post 1991.

France may be at a comparative disadvantage in attracting brains from rich OECD countries despite free mobility with many of these countries.

To summarize, it appears that semi-skilled rather than highly-skilled immigrants have benefited from free mobility within the EU and especially those coming from relatively poorer countries like Portugal and Spain as Figure 5 shows.

Clearly, accession to free mobility by the two countries in 1992 had a very large immediate impact on the number of semi-skilled workers coming to France and it was followed by a permanent rise in the flow. The inflow from other EU15 countries however, decreased significantly during the same period.[16] This suggests that French firms may have chosen to substitute between workers from different EU source countries. The impact of free mobility on semi-skilled workers cannot be clearer: Relatively poor countries geographically and culturally close to France, like Spain and Portugal, exhibit a very significant impact of free mobility while those that are richer and culturally less close (like the EFTA countries and Greece) show very small impacts under similar circumstances. Interestingly, there is no similar impact from lifting barriers to mobility for the highly skilled in 1992. Even though highly skilled workers from Spain and Portugal came in greater numbers after 1992, the flow remained small. The forming of EEA appears to have an impact in 1994 but it was short-lived and the downward trend resumed very quickly. Hence, while Portugal and Spain semi-skilled workers took advantage of the free mobility agreement substituting for workers from other EU countries, no similar effect is detectable for the highly skilled. Growing sources of skilled workers for France appear to be developing countries.

Figures 6 and 7 show the evolution of the flows for the semi-skilled and the highly-skilled immigrant workers from the rest of the world for three regions: Francophone Africa (Algeria,

[16] Flows from Greece and EEA countries are not depicted because they are very small and exhibit only a small change associated with the implementation of free mobility.

Morocco, Tunisia plus 13 sub-Saharan francophone countries like Benin, Ivory Coast, Senegal); transition European countries (Bulgaria, Hungary, Poland, Romania, Czechoslovakia); and other developing countries (Asia, Latin America and other African countries).

It is quite clear that both figures represent a complement to Figure 5. After 1992, the flow of semi-skilled workers coming from developing countries diminished dramatically as Portuguese and Spanish workers were hired in large numbers by French firms.[17] There was also a significant decrease in the flow of highly skilled, which was on an upward trend in the late 1980s. However, from the mid-1990s, the decline stopped and in 1997, there was a particularly dramatic surge in the flow of highly-skilled workers coming from Francophone Africa (including North Africa).

To summarize, the key feature in the evolution of the flows of skilled immigrant workers to France since the mid 1980s is that the inflow of semi-skilled immigrants evolved very differently from the inflow of the highly skilled. For both categories, 1992 is a key year. With their accession to free mobility within the EU, Portugal and Spain have crowded out other EU countries as well as developing countries in the semi-skilled category. In the high-skilled category, the substitution occurred in favour of developing countries which do not have free mobility agreement with France, apparently at the expense of EU15/EFTA countries. These changes suggest that free mobility does not guarantee easier access to the international supply of brains.

4. Immigration policy in Switzerland

The basic premises of immigration policy in Switzerland are the same as those in France: policy is labour market determined. However, Switzerland has had explicit quotas for workers' permits for 30 years and it had no free mobility agreement with other countries until 2002.

[17] Note that the peak in the early 1990s is due to a partial amnesty which benefited mostly people from developing countries. Again, the case of low-skilled workers is very similar to that of the semi-skilled but even more dramatic.

4.1. Policy in the 1980s and 1990s

Until the early 1960s, there was no control on immigration to Switzerland and anybody with a work contract could enter the country and obtain a residence permit. Firms' labour needs were systematically accommodated and workers came mostly from neighbouring countries (Germany, France, or Italy). However, in 1970, mounting political pressures to control the growth of foreign resident population led to an explicit quota system on workers' permits which by and large remained in place until 2002.[18]

Switzerland also allocates joint work and residence permits to foreigners with job contracts. Workers with job contracts for at least 12 months receive a renewable one-year work permit (permit B) and are considered permanent residents for statistical purpose. They may come to Switzerland directly from abroad or may have held seasonal permits for a minimum of 10 years.[19] After 10 years of successive annual renewals, the one-year permit can be converted into an establishment permit (permit C) valid indefinitely. Hence, the system allows for graduation between types of permits and the large majority of new resident workers obtain one-year permits first. Since 1970, all new work permits are limited by quotas linked to the growth of foreign resident population and the declared labour force needs by employers. The level of quota for new one-year permits has evolved between 21,000, and 8,500, since 1970 (Piguet and Mahnig, 2000).

In the late 1990s, as an EFTA member, Switzerland was considering joining the European Economic Area (EEA), which would have translated into free mobility of individuals.[20] Participation

[18] See Gross (2006) for a complete description of the Swiss immigration policy during the past 40 years.
[19] Until its abolition in 2002, the most common temporary permit was the seasonal permit with a maximum duration of 9 months per calendar year. Asylum seekers who obtain the right to stay in Switzerland also receive one-year permits.
[20] Membership in the EEA was rejected in 1992 by popular vote but the Government immediately began bilateral negotiations with the EU on a number of economic issues, among which, free mobility of people (see Gross, 2006, for details).

to the EEA would have required reforms to Swiss immigration policy, and early in the discussion process, the government decided to amend its immigration policy. A differentiated treatment for workers based on three categories of source countries was introduced (the so-called *3-circle policy*): EU/EFTA members, with which the aim was to reach free mobility; countries economically and culturally close to Switzerland such as North America, Oceania and Eastern Europe which remained subjected to quotas; and other countries from which workers were considered only under exceptional circumstances. It soon became clear that the new policy violated international agreements on human rights signed by Switzerland, and in 1995, it was amended; the 2nd and 3rd circles were merged and permits allocated mostly to skilled workers. Priority on the job market had to be given to Swiss and EU nationals over workers from the rest of the world. These amendments set the stage for the new immigration legislation to be developed after the free mobility agreement with EU15/EFTA countries came into place in 2002.

June 1st, 2002 was the beginning of a transition period toward complete free mobility with EU15 and the 3 EFTA countries (Norway, Iceland and Liechtenstein). Until May 31 2004, employers had to give priority to nationals and annual quotas were in place for temporary and longer-term permits until 2007. In 2003, the quota on long-term permit was 15,300 but it was largely over run and 21,783 permits were allocated. Between 2007 and 2014, a special safeguard clause allows Switzerland to impose quotas again in case of exceptional increase in immigration.[21]

Due to limitation on availability of data, our study covers the period 2000-2004. Accordingly, source countries are divided into two categories: (i) EU15/EFTA countries with which free mobility is being phased in since 2002, and (ii) other countries with which there is no agreement and for which immigration of workers is under strict quotas.

[21] The implementation of a similar agreement with the 10 new members of the EU was accepted by popular vote in September 2005.

5. Immigrant workers to Switzerland: The numbers

The study covers about 170,000 immigrant workers from 49 countries who have obtained a working and resident permits for at least one year during the 2000-2004 period. This represents an average of 96.8% of all immigrant workers during this period. They are foreign nationals with a work contract who cannot change occupations in the short-run. The observations are for the 9 one-digit level ISCO categories out of which four classes of skills have been defined: Highly-skilled workers (ISCO 1-2: Managers, Intellectuals and Scientists), semi-skilled-plus workers (ISCO 3-4: Technicians and Administrative Employees); semi-skilled-minus workers (ISCO 5-7: Professional Workers in Services, Agriculture and Industry) and low-skilled workers (ISCO 8-9).[22]

The top panel in Table 3 shows the regional and skill distribution for all immigrants.

Over ¾ of immigrant workers to Switzerland come from the EU15/EFTA countries with a more than proportionate representation of semi-skilled-plus workers compensated by a much less than proportionate representation in the low-skilled category. The remaining 25% of the total flows are rather evenly distributed across the four other regions with the smallest contribution from new and future EU member countries (2.7%). For other high income countries, which represent hardly 6% of the total flow, there is a clear bias toward highly skilled flows as managers and intellectuals represent 11.5% of total flow for the category. Flows from other European countries which cover mostly the Balkans and flows from developing countries show a more than proportionate share of low-skilled workers. A clear geographical concentration among source countries can also be seen (lower panel in Table 3). Indeed, the four countries with which Switzerland has a common border and language (Austria, Italy, France and Germany) cover nearly 50% of all immigrant workers.

[22] ISCO 9 also contains immigrant-workers without specific occupational designation; they represent 7.3% of the total sample and have been deleted.

Adding Portugal, the five countries captured 64% of all immigrant-workers to Switzerland between 2000 and 2004. Finally, there is also a clear country-level skill specialization: UK, the Nordic countries, Canada, Australia, the United Sates, India and China send mainly highly skilled workers, whereas Portugal, Serbia-Montenegro, Bosnia-Herzegovina, and Sri Lanka send mainly low-skilled workers.

In 2002 began a new era for Swiss immigration policy with the start of a transition period leading to complete free mobility with EU15 countries. Although important changes can already be identified in the data they cannot be firmly attributed to the move toward free mobility as other aspects of the immigration policy were reinforced at the time such as the preferential treatment for EU/EFTA workers in hiring. In any case, the preliminary assessment of the Swiss case turns out to be surprisingly close to that of France.

Consider first Figure 8 which shows total inflows from EU15/EFTA countries and four other categories of countries with no special agreement with Switzerland on mobility i.e., high-income OECD countries (Australia, Canada, New Zealand, USA, Japan, Israel); new/future EU member countries (Bulgaria, Hungary, Poland, Romania, Slovakia, Czech Republic); other European countries (Russia, Ukraine, Turkey, Serbia-Montenegro, Macedonia, Croatia, Bosnia-Herzegovina); and, developing countries (see Table 3 for the detailed list).

The progressive introduction of free mobility with the EU15/EFTA countries appears to have the expected effects from 2002 on, as there was a significant increase in the flows of immigrant-workers from the region at the expense of all the other groups of countries. However, the substitution again occurred more clearly among the less skilled rather than the more skilled immigrants (see Figures 9 and 10).

In fact Figure 10 shows that the inflows of highly-skilled individuals are quite similar through time across all groups of countries. Even though it is not depicted here, a similar conclusion can be drawn for the semi skilled, i.e., there is a larger substitution in the semi-skilled minus category, and much more modest effects in the semi-skilled plus category.

Comparing France and Switzerland is very instructive because of the surprising consistency in pictures across the two destination countries even though their experience with free mobility occurred at very different times. In effect, first, freeing up mobility has an immediate impact on the flows of low and semi-skilled from relatively poor countries (Portugal for both France and Switzerland). Second, freeing up mobility does not have an as noticeable short-term impact on the flows of skilled immigrants. There is, however, one major difference between the two cases. France and Switzerland seem to respond differently to the apparent overall increase in competition for skilled immigrants within Europe. Whereas skilled immigrants come mainly from high-income countries to Switzerland, they come increasingly from developing countries to France. Hence, despite its long access to free mobility within the EU, France, does seem to have been able to take advantage of the large pool of skilled workers available from the region.

In Appendix I, we briefly compare migrant workers from Canada and the US going to France and to Switzerland. In the next section, we turn to a more in-depth analysis of the determinants of the skill-specific flows of workers and to the analysis of the impact of free mobility.

6. Framework and methodology

Studies about the nature and drivers of the flows of immigrants are not numerous and our approach is based on a model of push and pull migration factors (see Massey et.al., 1993, for a survey) applied to migration inflows as in Clark et. al. (2002) and Hatton and Williamson (2002) for

the US only, Karemera et. al. (2000) for Canada and the US, and Gross and Schmitt (2003) for OECD countries. It is modified to accommodate specific factors for workers (see Gross and Schmitt, 2005). In short, workers respond to relative financial incentives (level and distribution of income, see for example, Borjas, 1987)[23] as well as monetary and non-monetary cost of migrating such as distance, language and the existence of networks that may ease the transition in the new country (Bartel, 1989, Zimmerman, 1996, and, Gross and Schmitt, 2003). We use the same base model for both France and Switzerland and estimate it using the fixed effect framework such that,

$$\begin{aligned} y^s_{j,t} &= \alpha \ + X\beta \ + \mu^s_{j,t} \ , \\ u^s_{j,t} &= \mu^s_j + v^s_{j,t} \ , \end{aligned} \qquad (1)$$

with *j* representing the source countries and *s* the skill categories. The fixed effect (μ_j^s in the second line of [1]) accounts for unmeasured factors specific to combinations of source and destination countries (for example, distance or common language); $v^s_{j,t}$ is an error term with the usual properties and, matrix $\boldsymbol{X}$ is a set of explanatory variables including immigration policy variables. A log linear specification for immigration flows can be written as,

$$\begin{aligned} LIFL^s_{k,j,t} = \alpha^s_{k,j} &+ \beta_1 LPOP_{j,t-1} + \beta_2 LINCSOU_{t-1} + \beta_3 LINC_{k,t-1} + \beta_4 LDIST_{t-1} \\ &+ \beta_5 LNETWORK_{k,j,t-1} + \beta_6 UNEMP_{k,t-1} + \beta_7 MOBILITY_{k,t} + \beta_z D_{k,z} + v^s_{j,t} \ , \end{aligned} \qquad (2)$$

where $\alpha^s_{k,j}$ is the fixed effect for combinations of source and destination countries. Note that the model is estimated separately for each skill category and all variables are in log except dummies. Explanatory variables are lagged to avoid simultaneity. It is also consistent with the assumption that decision to migrate and policy implementation are based on past information.

For each destination country (*k=FRA* or *SWI*) the dependent variable is the number of immigrant workers from a given source country *j* during period *t*, with skill definition *s* ($LIFL^s_{k,j,t}$).

[23] The literature on the main drivers of immigration is large and we refer the reader to our source paper, Gross and Schmitt (2005) for relevant specific references.

There are 63 and 49 source countries from all regions of the world for France and Switzerland respectively which represent on average 96.8% and 89.4% of all immigrant workers to each destination country.[24] Hence the sample is made of source countries with and without free mobility agreement. The period covered is 1983-2000 for France divided into six 3-year sub-periods and 2000-04 for Switzerland, on an annual basis. The inflow of migrants is first measured for a broad categorization of skilled workers which includes managers, technicians, professional and qualified workers; then managers and technicians are studied separately from professional and qualified workers, the latter being considered less skilled than the former (see Appendix II for detailed explanations of the variables). For both France and Switzerland, observations are from registration at the migration office to obtain residence and work permit on the basis of a valid job contract.

The explanatory variables include population in the source country ($LPOP_{j,t-1}$) which acts as a scale variable for the potential pool of immigrants. In the absence of migration controls it is expected to have a positive effect on the size of the flow of migrants. However, when a large source country does not have a free mobility agreement, immigration control may be such that large countries have less than a proportionate participation to the inflow. Financial incentives are captured by the usual relative incomes per capita variable in the source and destination countries ($LINCSOU_{j,t-1}$, $LINC_{k,t-1}$). However, the measure is unlikely to capture the true income opportunities for highly skilled immigrants. Hence, we also introduce a measure for relative income distribution factor ($LDIST_{t-1}$) which is the ratio of top to average income in the country (T/A) and a distinction is made between greater and smaller income dispersion in destination than source country (see Gross and Schmitt, 2005, for details). It is expected that skilled workers are more inclined to migrate when the relative distribution is larger in the destination country than at home. In the French estimations

[24] There is a small number of observations which are zeroes (21 for France and 10, for Switzerland) to which the following transformation has been applied: $linfl^{s}_{j,t} = \ln(infl^{s}_{j,t}+1)$.

because of the long time-series, these factors are time variant and are used as separate explanatory variables. In the case of Switzerland, because of the short sample, these factors are constant and are used to correct average per capita income according to skill levels.

A "cultural pull" variable ($LNETWORK_{k,j,t-1}$) is introduced to account for network or labor market advantage in the destination country provided through the existence of a significant size community of the same origin. It is measured as the number of people from the same region or country already established in the destination country and is expected to have positive relation with the inflow of new migrant workers. Consistent with the results found in Gross and Schmitt (2003) we allow for differentiated impact for workers from OECD high income countries and other countries. Finally, lagged unemployment rate at destination ($UNEMP_{k,t-1}$) measures incentive for potential immigrant workers to seek a job as well as reflects the policy by both destination countries to award work permits to new immigrants only after priority for employment has been given to residents. In both cases it is expected to affect the flows adversely.

Some dummy variables ($D_{k,z}$) take into account extraordinary country-specific events. For France, the sample covers the war in Lebanon from 1983 to 1989, the change of status of Algerian workers who had the right to unconditional French citizenship until 1986, and the unusual impact of the accession of Portugal to free mobility within the EU in 1992 (*LEBANON, ALGERIA, PORTUGAL*). For Switzerland, a dummy is used for the unusual large number of immigrant workers permits attributed to people from Sri Lanka in 2001 and 2002 (*SRI LANKA*). Most of these are conversions for humanitarian reasons of temporary special permits into permanent ones because of on-going war in the country.[25] Finally, there is a dummy for the introduction of the absolute

[25] In 2001 and 2002, a total of 3453 and 5577 long-term permits were awarded to Sri Lankan citizens for humanitarian reasons. In 2000 and 2003, the numbers were 1416 and 1320 respectively (OFR, various years).

preferential treatment of nationals and EU15/EFTA citizens in 2002 over citizens from the rest of the world (*NEWPOL*).

Free mobility is tested in various ways one of which involving destination-specific dummies ($FREEMOB_{k,j}$). For France, the dummy which takes value 1 when a new EU member accesses full mobility based on Table 1. For Switzerland, June 2002 marks the beginning of a transition period for free mobility with EU/EFTA countries during which borders are open and annual quotas have been defined but as already mentioned, they have not been binding. Note that France as an EU-member has experienced free mobility for a number of years while Switzerland is just starting to implement it with the same EU countries. The Swiss case can be seen as representing the short-term effect of opening borders while France represents the long-term effects.

7. Results

7.1. Results for France

The goal of the estimations is to test whether free mobility generates structural shifts in the basic migration model. We use a variety of strategies taking advantage of the fact that the sample covers countries which had free mobility agreements with France throughout the period as well as countries which accessed to free mobility during the period. The sample is made of panels of immigration flows from 63 source countries, over 6 consecutive three-year periods (t=1983-85, 1986-88, 1989-91, 1992-94, 1995-97, 1998-2000), that is 378 observations and there are three possible skill definitions, skilled workers which can be disaggregated into semi-skilled and highly skilled.

Starting with skilled we establish that the panel estimation method is the most appropriate. In column 1 and 2, Table 4, we present the results of the OLS estimation with a number of controls for

country-specific characteristics and the panel estimation with a fixed effect for each source-destination combination.

It is clear that the fixed effect methodology is appropriate as the F-value for equal intercepts indicates. Thus it is likely that the results in column 1 may suffer from misspecification and missing variables due to unobserved bilateral factors. Our next step is to check whether the fixed effect may capture the full cross-section impact of free mobility particularly because countries which have had a long standing agreement represent a large share of skilled immigrants. Column 3, which includes only country without access to free mobility at any time shows that it is unlikely to be the case as some factors experience relatively large changes. This is confirmed in column 4 where the dummy concerning the introduction of free mobility is added and shows clearly a positive immediate significant impact. However, a comparison with column 2 indicates that the simple level dummy is not likely to capture the complex changes discussed above in particular since the semi-skilled and skilled flows experience vastly different evolution. We therefore turn to estimating the two components of the skilled immigrants separately (Table 5). Introducing a simple dynamics in the free mobility factors and distinguishing between semi- and highly skilled shows there are large differences in the impact of free mobility.

First, free mobility generates a permanently higher level of migration of the semi-skilled workers. For the highly skilled, free mobility enhances the growth of flows; yet through time, it weakens by about a 5.5 percentage points per period. Hence, the effect goes from 17.2% in the first 3-year sub-period down to 2.8% in the 4^{th} 3-year sub-period. It is worth noting also that the main drivers for immigration of highly skilled is French income and the state of the French labour market while for the semi-skilled the presence of network matters for immigrants from developing and transition countries.

Lastly, we test whether the determinants of migration shift with free mobility and the answer again varies across definitions of skills (columns 5 and 6). It is expected in case of binding quotas that the pull and push factors would gain explanatory power with free mobility (see also Mayda, 2005). Free mobility has hardly any impact on the determinants of semi-skilled flows while it does for highly skilled flows. Interestingly, source-country income becomes significant with free mobility as well as the presence of a network from the same origin for the highly skilled workers. More generally, relative income (rather than absolute income) and the presence of networks become stronger migration factors with free mobility for both types of workers.

What do these results imply more generally for movements of skilled workers. First, when analyzing mobility, a distinction must be made between people who are highly skilled such as managers and technicians and, professionals with intermediate skills. For example, free mobility generates a level effect on the inflow of semi-skilled workers while it has a growth effect on the inflow of highly skilled workers. Second, the factors behind this dynamics are quite different. The effect on the highly skilled is in part explained by the increased push effect of home income suggesting that skilled people from relatively poorer countries may be moving in greater numbers. It is also consistent with the fact that smaller income differences as between rich OECD countries may no longer be attractive. Third, free mobility increases the role of cultural network particularly for the semi-skilled reinforcing the gap between the two skill levels. Finally, the different degrees of parameter shifts across skills indicate that the distortions imposed by immigration restrictions are larger for the highly skilled than the semi skilled. Hence the difficulty of predicting the impact of free mobility increases with skill levels.

7.2 Results for Switzerland

Turning to Switzerland in Tables 6 and 7, a similar exercise is performed on the flows of semi and highly skilled from 49 source countries over the period 2000 to 2004.

The standard model of migration does not perform as well as in the case of France in terms of identification of effects for the main factors driving movements of people and much of the explanatory power is in the fixed effect (column 2). This may be due in part to the small sample size. Again the fixed effect model is preferred to simple OLS based on the F-test. Unlike in the case of France, there are no major differences between the two levels of skills and the factor that dominates is the adverse effect of the Swiss unemployment rate (Columns 3 to 5). This may reflect the strict application of the quota policy with flows being determined by government policy than supply and demand factors.

The results hardly change when mobility is modeled with some dynamics (Table 7, columns 1 and 2) but the mobility-related coefficients suggest greater variations for the semi-skilled than for the highly skilled. This is confirmed in columns 3 and 4 where free mobility is allowed to influence the magnitude of the impact of standard migration drivers. Relative incomes have a strong impact on both flows, an outcome already observed for France which has free mobility with the same source countries. The effect of unemployment weakens in the semi-skilled category supporting the idea that the variable reflects the binding nature of quotas. Also the size of the pool (i.e., population) becomes a factor in the semi-skilled category. The negative sign on the network variable may simply reflect the fact that the largest communities from the EU living in Switzerland were developed through a policy that was strongly biased toward unskilled labour (Italy, Spain, and Portugal). Overall, similarly to France, and consistent with the relaxing of binding quotas, a richer migration model seems to arise when free mobility is put in place and its impact on the flows is quite immediate.

Comparing the two countries and interpreting the results from Switzerland as representing the short-term, one change that emerges is the immediate and permanent enhanced role of relative incomes with free mobility. This may explain why Switzerland has been able to attract consistently highly skilled workers from EU countries while France has not. And it is consistent with France's similar difficulties in the 1950s and 1960s. France also shows that, with time, resident communities become more strongly positively related to the flows of semi-skilled workers while their role remains minor for the highly skilled. Finally, the state of the labour market while somewhat weakening remains influential.

8. Conclusion

In this conclusion, we try to evaluate whether these results may provide some indication about the impact of free mobility between Canada and the United States. It is useful to stress again that this study uses observations on immigrant workers who enter France or Switzerland with a job contract and with a right to permanent residence. It therefore does not deal with short-term or temporary migration (as with the TN visa program). Also, when free mobility is introduced, priority on the job market is given to nationals and citizens from countries part of the agreement over other migrants. Several conclusions arise from out study which can be put in the Canadian context:

First, it should be expected that free mobility has a differentiated effects depending on the definition of the terms "high skill". We find a level effect on the semi-skilled and a growth effect on the highly skilled. Clearly, the nature of the effect depends on the demand for skills but the point is that a distinction should be made between classes of skills when evaluating the impact of free international mobility. This is the case for France and Switzerland, and there is no reason to think that it would be different for Canada. Second, one factor arising clearly as the main driver under

liberalization of international movement is relative incomes. In this study, we measured only financial incomes however, it is obvious that migrants consider pecuniary as well as non-pecuniary benefits and monetary income tends to be lower when non-monetary benefits are higher. If social programs and pension are not portable, Canada with relatively higher non-monetary benefits may be in the same position as France which seems to have a comparative disadvantage among rich OECD countries with respect to the better skilled. Third, semi-skilled workers tend to be influenced more strongly by the presence of a cultural community. This argument tends to suggest that semi-skilled workers from Mexico would be more likely to move to the US first. However, there could also be movements from the US to Canada for communities that are small in the US relative to Canada. Finally, an issue not addressed directly in this study but which underlies some of the movements by the highly skilled, is the role of multinationals. Many multinationals choose to have their European headquarter in Switzerland because it is not part of the EU but has adopted most of its economic policies. In the late 1990s, foreign direct investment from OECD countries per capita was three times higher in Switzerland than in France.[26] The higher ability of Switzerland to attract highly skilled may also rest on policies for attracting foreign direct investments such as tax and education policies.

From this evaluation, it is clear that attracting highly skilled workers in an environment of free mobility requires comparative advantages for workers and firms. The question then is where Canada stands relative to Mexico and more importantly to the US. Is Canada to the US what France is to Germany or the UK? Or is Canada to the US what Switzerland is to the EU countries?

[26] OECD (2005) and World Bank (2005).

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Appendix I: North American immigrant workers to France and Switzerland

In this Appendix, we look briefly at immigrant workers from Canada and the United States going to France and Switzerland over a short common period (1996-2000) for which data is available. Three points are worth noting.

(i) **Switzerland appears to be more attractive or more open than France.** Between 1996 and 2000, 8,596 North Americans moved to Switzerland against 3,746 to France which has a population about ten times larger.

(ii) **Canadians appear to be more internationally mobile than Americans**. In proportion to their home population, the flows of Canadians are much higher since the ratio of Canadian to American flows is 1 to 2 in Switzerland and about 1 to 3 in France.

(iii) Although Canadians and Americans who move to France or Switzerland are highly skilled, **Americans tend to be more skilled than Canadians.** Among, the three categories registered by French statistics, 92% of Americans and 86% of Canadians are classified as highly skilled. In Switzerland, 91.1% of the total Americans flows has superior qualifications (i.e., highly skilled and semi-skilled-plus, for consistency with France) against 77.5% of the Canadian flows.

Possibly a common language between Canada, France and Switzerland and, thus, lower immigration costs can explain both, the larger flows and the lower skill level of Canadian migrant workers. Another likely factor to explain the skill differential is large American foreign direct investments in Switzerland which tend to be accompanied by highly-skilled expatriates. In 1996, US stock of direct investment represented 98.4% of North American investment (23.9% of the total stock of FDI in Switzerland). In 2000, the share was 95.7% (SNB, 2000, 2003, Table 2.2).

Appendix II: Variable definitions

A. Variables for destination France

Data for the Czechoslovakia and Germany have been recreated using weighted averages with population as the weight.

Dependent variable

$\boldsymbol{LIFL^{s}_{FRA,j,t}}$: logarithm of the flow of immigrant workers to France during each sub-period *t* from source country *j* for skill level s. The categories of skills defined by the French Office for International Migration are: 1=managers, engineers and technicians (*cadres, techniciens, agents de maîtrise et ingénieurs)* 2=professional and qualified workers (*ouvriers et employés qualifiés et professionnels*), 3=unskilled and specialised workers (*manoeuvres et ouvriers spécialisés*).

The sub-periods are *t* = 1983-85, 1986-88, 1989-91, 1992-94, 1995-97, 1998-2000. The 63 source countries are *j* = Algeria, Argentina, Australia, Austria, Belgium, Benin, Brazil, Bulgaria, Burkina Faso, Cambodia, Cameroon, Canada, Chad, Chile, China (incl.Taiwan) Congo, Cote d'Ivoire, Czechoslovakia, Denmark, Egypt, Ethiopia, Finland, Gabon, Germany, Greece, Guinea, Hungary, India, Iran, Ireland, Israel, Italy, Japan, Lao PDR, Lebanon, Luxemburg, Madagascar, Mali, Mauritania, Mauritius, Mexico, Morocco, Netherlands, New-Zealand, Niger, Norway, Pakistan, Poland, Portugal, Romania, Senegal, South Africa, Spain, Sweden, Switzerland, Syria, Thailand, Togo, Tunisia, Turkey, UK, US, Vietnam. Immigration flows from China and Taiwan, The Czech Republic and Slovakia, and the former two Germany have been combined. (OMI).

Explanatory variables

ALGERIA: dummy equal to 1 in first sub-period (1983-85) and 0 otherwise. Until 1986, the entry of Algerian citizens was not registered by the office of migrations because there was a free mobility agreement between Algeria and France. Since 1947, Algerians are not considered "foreign nationals" in France and, in September 1986, France reinstate takes the opportunity of terrorist attacks to reinstate visas for all countries excluding the EU and Switzerland. In most countries, applications must be filled by the French embassy and different categories of visas are available (Weil, 1991, p. 338-41).

$\boldsymbol{FREEMOB_{FRA}}$: Dummy equal to 1 when an EU member has access to free mobility (see Table 1).

HIOECD: Dummy equal to 1 for high income OECD and non-OECD (EUROPE, Australia, Canada, Israel, Japan, New-Zealand, US) and 0, otherwise.

$\boldsymbol{LANGUAGE_{FRA}}$: Dummy equal to 1 if the country is French-speaking in whole or part (Switzerland, Canada, Luxembourg uses French as official language for legislative texts) or a former French colony in Africa and Asia, and 0, otherwise.

$\boldsymbol{LDIST_{t-1}}$: Relative distribution of incomes in destination and source country *j* in the previous period. Country-specific indexes for the distribution of incomes are computed as the ratio of the highest income (T) to average (A) for the high skilled and average (A) to bottom (B), for the low skilled based on sectoral income from the ISIC-2Rev decomposition (ILO, 2003a). When a particular year is missing, the closest available year is used. When observations on a sector for several years are missing they are computed from the overall average growth rate. For the Swiss model, observations are for 1999. Data is not available for some countries and substitute values are used: For Greece, Portugal is used; for Argentina, and Peru, the simple average of Brazil and Chile is used; Cambodia, Loa PDR and Vietnam are the average of China and Myanmar; Egypt is used for all Middle East/North Africa countries (Algeria, Iran, Lebanon, Morocco, Syria, Tunisia); Sri Lanka is average of India and Bangladesh and, Bosnia-Herzegovina is average of Serbia-Montenegro, Croatia and Macedonia. Also, data for only two countries from Sub-Sahara Africa is available (i.e., Mauritius and Guinea) and information from out of sample countries are used such that: Kenya for Ethiopia and Madagascar; the average of Guinea and Kenya for Benin, Burkina Faso, Cameroon, Congo, Gabon, Cote d'Ivoire, Senegal and Togo; the average of Egypt and Guinea for Mali, Chad, Niger, Mauritania. Finally, detailed sectoral data for France is not available and net average monthly income for full-time workers in professional categories similar to those for migrant workers is used (i.e., Managers and technicians for top income and unskilled blue-collar workers for bottom income). The only available year is 1997 (INSEE, 1999).

LEBANON: Dummy equal to 1 during the war period, 1983-1989, and 0 otherwise.

$\boldsymbol{LINC_{FRA,t-1}}$**:** GDP per capita in constant 2000-US$ in the last year of the previous period in France (World Bank, 2005).

$\boldsymbol{LINCSOU_{j,t-1}}$**:** GDP per capita in constant 2000-US$ in the last year of the previous period in source country *j* (World Bank, 2005). Some early missing values (Guinea, Loa PDR, Vietnam, Lebanon,

1982, 1985 and Czechoslovakia, 1985) have been computed extrapolating from the regional real GDP growth (Heston et.al., 2002).

LNETWORK$_{k,t-1}$: Population of region *m* in France in year *t-1*. Annual observations are computed by extrapolating observations between three consecutive censuses (March 4, 1982, March 6, 1990 and March 8, 1999) using yearly total inflows of immigrants (see Gross and Schmitt, 2005, for details).

LPOP$_{j,-1t}$**:** 15-64 year old population at the end of the last year of the previous period in source country *j*. (World Bank, 2005).

PORTUGAL: Dummy equal to 1 during one sub-period (1992-94) for the impact of access of Portugal to free mobility within the EU and 0, otherwise.

UNEMP$_{k,t-1}$: Average of the preceding 3-year unemployment rate in France (ILO, 2003b).

B. Variables for destination Switzerland

The overall period is 2000-2004; there are 49 source countries from all regions of the world and 4 skill levels. Immigration flows from Taiwan are combined with those from China.

Dependent variable

LIFL$^{s}_{SWI,j,t}$: logarithm of the flow of immigrant workers to Switzerland during each period *t* from source country *j* for skill level s. The categories of skills are: The categories of skills are: highly skilled, (12=managers, intellectuals and scientists and 34=technicians and administrative employees) semi-skilled, (567=professional workers in services, agriculture and industries) and, unskilled (89=unskilled workers). The period is *t*=2000 to 2004. The 49 source countries are *j* = Algeria, Argentina, Australia, Austria, Belgium, Brazil, Bosnia-Herzegovina, Bangladesh, Bulgaria, Canada, China (incl. Taiwan), Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, India, Iran, Ireland, Israel, Italy, Japan, Macedonia, Mexico, Morocco, Netherlands, New-Zealand, Norway, Peru, Philippines, Poland, Portugal, Romania, Russia, Serbia-Montenegro, Slovakia, South Africa, Spain, Sri Lanka, Sweden, Thailand, Tunisia, Turkey, UK, Ukraine, US (OFM).

Explanatory variables

EU: Dummy equal to 1 for source-country member of the EU or the EFTA, 0 otherwise.

FREEMOB$_{SWI}$: Non-zero dummy for EU members as the bilateral accord on free mobility becomes implemented. The dummy is equal to ½ for 2002 and 1 for 2003 and 2004; 0 otherwise.

LANGUAGE$_{SWI}$: Dummy equal to 1 if the country uses one of the 3 official languages of Switzerland in whole or in part (French: Algeria, Belgium, Canada, France, Morocco, Tunisia; German: Germany and Austria; Italian: Italy) and 0, otherwise.

LNETWORK$_{k,t-1}$: Population from country *j* living in Switzerland in year *t-1* (OFM).

***$LPOP_{j,-1t}$*:** 15-64 year old population at the end of the last year of the previous period in source country *j*. (World Bank, 2005).

$LRELINC^{s}_{SWI,j,t-1}$: Log of skill-specific relative incomes per capita in Switzerland and source country *j*. It is the logarithm of the ratio of GDP per capita (in Switzerland, $INC_{SWI,t-1}$, in source country j, $INCSOU_{j,t-1}$) adjusted with indexes of relative distributions of incomes (*DIST,* in Switzerland, in source country *j*). For the highly skilled, *DIST* is the ratio of top to average (*T/A*) incomes and for the unskilled, it is the ratio of bottom to average incomes (*B/A*). Distribution indexes are measured in 1999 for most countries, in 1998 for Ireland, Bangladesh, Philippines, Russia, 1997, for Turkey, 1995 for Italy, in 2000, for Switzerland and Australia and in 1991 for India. Income distributions for Sri Lanka are computed as average of India and Bangladesh, for Peru as average of Brazil and Chile and for Bosnia-Herzegovina, as average of Croatia, Serbia-Montenegro and Macedonia. For the semi-skilled, unadjusted income per capita is used. (ILO, 2003a, World Bank, 2005).

NEWPOL: Dummy equal to 1 for 2002 to 2004 and 0 otherwise for countries outside the bilateral agreement on mobility with EU15/EFTA.

SRI LANKA: Dummy equal to 1 for 2001 and 2002, 0 otherwise.

$UNEMP_{k,t-1}$: Unemployment rate in previous year in Switzerland (OFS, 2005).

Table 1: Free-Mobility in the EU

EU and EEA Members Benefiting from Free Mobility	**Free Individual Mobility (effective starting year)**
France, Belgium, Netherlands, Luxemburg, Germany, Italy, UK(*), Ireland(*), Denmark(*)	1968 or 1972 (*)
+ Greece	1988
+ Portugal, Spain	1992
+ EEA (Austria, Finland, Island[1], Liechtenstein[1], Norway, Sweden)	1994

[1]/ Not in our sample of countries. Free mobility with Liechtenstein became effective in 1995 due to its deep integration with Switzerland (rejected by Swiss citizens in 1992).

Table 2: Immigration to France by skill categories (1983-2000)

Country	Total Immigrant Workers	Low-skilled and Specialized Workers	Qualified Workers	Technicians and Managers
Regional distribution				
TOTAL	**100%**	**100%**	**100%**	**100%**
Sub-Sahara Africa	6.3%	8.7%	6.3%	3.7%
Middle East and North Africa	15.1%	14.5%	16.4%	14.3%
Central Europe and Central Asia	7.0%	10.2%	7.0%	3.4%
East Asia Pacific	3.4%	4.6%	3.2%	2.2%
Latin America	1.3%	1.3%	1.0%	1.5%
South Asia	0.7%	0.7%	0.6%	0.7%
High Income Countries	66.2%	59.9%	65.5%	74.2%
Skill distribution				
TOTAL	**261,761**	**91,316 (35%)**	**89,240 (34%)**	**81,208 (31%)**
1. Sub-Sahara Africa (SSA)				
Togo	3,148	1,623	1,267	258
Senegal	2,841	1,226	1,050	565
Mali	2,532	1,849	505	178
Mauritius	1,564	789	551	224
Benin, Burkina Faso, Cameroon, Chad, Congo, Cote d'Ivoire, Ethiopia, Gabon, Guinea, Madagascar, Mauritania, Niger, South Africa	6,494	2,490	2,208	1,796
Total SSA	16,579	7,977 (48%)	5,581 (34%)	3,021 (18%)

2. Middle East and North Africa (MENA)				
Lebanon	15,681	5,362	6,843	3,476
Morocco	10,076	3,438	3,526	3,112
Algeria[a]	6,783	1,961	2,359	2,463
Egypt, Iran, Syria, Tunisia	7,024	2,516	1,946	2,563
Total MENA	39,564	13,277 (34%)	14,674 (37%)	11,614 (29%)
3. Central Europe and Central Asia (CECA) without high income countries				
Poland	10,737	6,289	3,512	936
Turkey[b]	4,535	2,527	1,664	344
Bulgaria, Czechoslovakia[b], Hungary[b], Romania	2,969	485	1,037	1,447
Total CECA	18,241	9,301 (51%)	6,213 (34%)	2,727 (15%)
4. East Asia Pacific (EAP)				
China + Taiwan	4,590	1,488	1,546	1,556
Cambodge	1,750	1,140	593	17
Loa PDR	1,167	851	306	10
Thailand, Vietnam	1,388	758	446	185
Total EAP	8,895	4,237 (48%)	2,891 (33%)	1,768 (20%)
5. Latin America (LAM)				
Brazil	2,173	1,026	565	582
Argentina, Chile, Mexico[2]	1,153	199	346	608
Total LAM	3,326	1,225 (37%)	911 (27%)	1,190 (36%)
6. South Asia (SA)				
India, Pakistan	1,762	608 (35%)	562 (32%)	592 (34%)

7. High IncomeOECD Countries +Israel (HIOECDC)				
Portugal[c]	44,193	27,944	15,513	736
Great Britain[c]	27,826	5,053	11,264	11,509
Italy[c]	21,724	7,898	8,569	5,257
Germany[c]	16,816	3,368	6,662	6,786
Belgium[c]	12,167	2,910	4,355	4,902
United States	11,337	144	1,085	10,108
Australia, Austria[c], Canada, Denmark[c], Finland, Greece[c], Ireland[c], Israel, Japan, Luxembourg[c], The Netherlands[c], New-Zealand, Norway[c], Spain[c], Sweden[c], Switzerland	39,331	7,374	10,960	20,998
Total HIOECD	173,394	54,691 (32%)	58,408 (34%)	60,296 (35%)

[a] Immigration from Algeria was not recorded from 1983 to 1985. [b] Member of the OECD. Mexico since 1994, Hungary and Czech Republic since 1996. [c] Member of the European Union (EU15) or the European Economic Area (EEA). Effective free mobility for workers from Spain and Portugal and EEA members since January 1, 1992 (OMI, 1992, p.15). Sweden and Finland joined the EU in 1994. Norway joined the EEA in 1994.

Table 3: Immigration to Switzerland by skill categories (2000-2004)

Country	Total Immigrant Workers	Low-skilled Workers (ISCO 8-9)	Professional Workers in SIA (ISCO 5-7)	Technicians, Administrative Employees (ISCO 3-4)	Managers, Intellectuals and Scientists (ISCO 1-2)
Regional Distribution					
TOTAL	**100%**	**100%**	**100%**	**100%**	**100%**
EU15+EFTA	76.3%	69.3%	75.5%	80.7%	76.5%
Other OECD High Income	5.9%	2.1%	2.1%	6.5%	11.5%
New+Future EU	2.7%	1.6%	2.4%	4.0%	2.6%
Other Europe	6.6%	14.5%	9.1%	3.9%	3.0%
Developing countries	8.4%	12.6%	10.9%	4.9%	6.5%
Skill Distribution					
TOTAL	**172,184**	**14,643 (8.5%)**	**67,438 (39.2%)**	**36,317 (21.1%)**	**53,786 (31.2%)**
1. EU15+EFTA Countries					
Germany	45,323	1,649	11,005	13,480	19,189
Portugal	25,680	5,589	18,679	1,081	331
France	17,336	502	5,711	5,278	5,845
Italy	14,524	1,186	7,578	2,507	3,253
UK	7,907	149	923	1,808	5,027
Austria	7,219	465	3,232	1,664	1,858
Belgium, Denmark, Finland, Greece, Ireland, Netherlands, Norway, Sweden, Spain	13,472	600	3,252	3,486	5,624
Total EU15 + EFTA countries	131,461	10,140 (7.7%)	50,890 (38.7%)	29,304 (22.3%)	41,127 (31.3%)
2. Other OECD High Income					
USA	5,087	122	470	872	3,623
Canada	2,606	51	444	1,020	1,091
Australia, New Zealand, Japan, Israel	2,548	128	425	451	1,467
Total Other OECD High Income	10,241	301 (2.9%)	1,416 (13.8%)	2,343 (22.9%)	6,181 (60.4%)
3. New+Future EU					

Bulgaria, Hungary, Poland, Romania, Slovakia, Czech R.	4,707	239 (5.1%)	1,631 (34.7%)	1,449 (30.8%)	1,388 (29.5%)
4. Other Europe					
Serbia-Montenegro	4,974	1,175	3,127	479	192
Turkey	1,854	301	974	237	342
Bosnia-Herzegovina	1,505	321	934	195	55
Croatia, Macedonia, Russia, Ukraine	2,976	324	1,113	515	1,025
Total Other Europe	11,309	2,121 (18.8%)	6,148 (54.4%)	1,426 (12.6%)	1,614 (14.3%)
5. Developing countries					
Sri Lanka	6,940	1,259	5,269	343	69
India	1,980	63	203	297	1,417
China (incl. Taiwan)	1,530	113	375	294	748
Algeria, Morocco, South Africa, Tunisia, Argentina, Brazil, Mexico, Peru, Iran, Philippines, Bangladesh	4,016	407	1,506	861	1,242
Total Developing countries	14,466	1,842 (12.7%)	7,353 (50.8%)	1,795 (12.4%)	3,476 (24%)

Table 4: Impact of free mobility on immigrant workers to France: Global skilled definition

	1.	2.	3.	4.	5.
	$LIFL_{FRA,j,t}$ (skilled)	$LIFL_{FRA,j,t}$ (skilled)	$LIFL_{FRA,j,t}$ (skilled)	$LIFL_{FRA,j,t}$ (skilled)	$LIFL_{FRA,j,t}$ (skilled)
	All countries OLS	*All countries Panel*	*Countries with no free mobility*	*1983-2000*	*1983-1991*
$LPOP_{j,t-1}$ [a]	.570 (.000)**	-.950 (.136)	-1.436 (.049)**	-.526 (.412)	-1.082 (.529)
$LINCSOU_{j,t-1}$	.252 (.001)**	-.358 (.320)	-.181 (.636)	-.344 (.343)	.693 (.290)
$LINC_{FRA,t-1}$	5.525 (.000)**	6.228 (.000)**	6.807 (.000)**	5.627 (.000)**	4.917 (.000)**
$UNEMP_{FRA,t-1}$	-.305 (.000)**	-.271 (.000)**	-.308 (.000)**	-.296 (.000)**	-.206 (.002)**
$LNETWORK_{m,t-1}$	-.107 (.510)	1.024 (.021)**	1.339 (.003)**	1.113 (.012)**	1.336 (.110)
$LNETWORK_{m,t-1}$ *(High income OECD countries)* [b]	.428 (.065)*	-.786 (.099)*	-1.179 (.013)**	-.575 (.220)	-1.370 (.081)*
$LDIST_{t-1}$ (<1)	.064 (.942)	-.432 (.413)	-.093 (.869)	-.369 (.480)	-.798 (.352)
$LDIST_{t-1}$ (≥1) [b]	.278 (.827)	1.165 (.293)	.335 (.820)	.962 (.391)	1.788 (.261)
Regional dummies	Yes	No	No	No	No
Language, border dummies	Yes	No	No	No	No
Algeria, Lebanon, Portugal, dummies	Yes	Yes	Yes	Yes	Yes
Source-destination fixed effects	No	Yes	Yes	Yes	Yes
Free mobility dummy	No	No	No	.678 (.000)**	.605 (.140)
N (d.f.)	378 (356)	378 (304)	288 (231)	378 (303)	189 (115)
F-test for $C=C_j$. (Fixed effects)	-	18.424 (.000)	16.498 (.000)	18.425 (.000)	11.147 (.000)
Adj. R^2	.578	.869	.816	.871	.894

[a] Standard errors are heteroskedastic-consistent. P-value in parentheses. [d]Deviation with respect to the original variable.

Table 5: Impact of free mobility on immigrant workers to France: semi- and highly-skilled

	1.	2.	3.	4.	5.	6.
	$LIFL_{FRA,,j,t}$ (semi skilled)	$LIFL_{FRA,,j,t}$ (highly skilled)	$LIFL_{FRA,,j,t}$ (semi skilled)	$LIFL_{FRA,,j,t}$ (highly skilled)	$LIFL_{FRA,,j,t}$ (semi skilled)	$LIFL_{FRA,,j,t}$ (highly skilled)
$LPOP_{j,t-1}$[a]	-.832 (.258)	.634 (.368)	-1.318 (.088)*	.101 (.899)	-.1.351 (.091)*	.093 (.908)
$LINCSOU_{j,t-1}$	-.445 (.287)	-.095 (.780)	-.384 (.355)	-.025 (.940)	-.351 (.408)	-.023 (.945)
$LINC_{FRA,t-1}$	5.403 (.000)**	4.199 (.000)**	6.058 (.000)**	4.898 (.000)**	6.523 (.000)**	5.038 (.000)**
$UNEMP_{FRA,t-1}$	-.438 (.000)**	-.142 (.001)**	-.412 (.000)**	-.111 (.012)**	-.443 (.000)**	-.121 (.019)**
$LNETWORK_{m,t-1}$	2.080 (.000)**	-.197 (.630)	1.979 (.000)**	-.312 (.462)	1.988 (.000)**	-.308 (.469)
$LNETWORK_{m,t-1}$ (High income OECD countries)[b]	-1.654 (.007)**	.470 (.289)	-1.960 (.002)**	.130 (.772)	-2.035 (.001)**	.088 (.846)
$LDIST_{t-1}$ (<1)	-.551 (.435)	.040 (.939)	-.531 (.458)	.061 (.910)	-.424 (.572)	.126 (.826)
$LDIST_{t-1}$ (≥1)[b]	.879 (.523)	.488 (.634)	.656 (.636)	.203 (.843)	.484 (.783)	.017 (.990)
Algeria, Lebanon dummies	Yes	Yes	Yes	Yes	Yes	Yes
Source-destination fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Free mobility dummy	1.734 (.000)**	-.088 (.571)	1.938 (.000)**	.051 (.823)	-	-
$FREEMOB_{FRA}$*TIME	-	-	.129 (.400)	.226 (.064)*	-	-
$FREEMOB_{FRA}$*$TIME^2$	-	-	-.039 (.027)**	-.055 (.000)**	-	-
$LPOP_{j,t-1}$*FREEMOB					.021 (.934)	.131 (.409)
$LINCSOU_{j,t-1}$*FREEMOB					-.827 (.108)	-.721 (.019)**
$LINC_{FRA,t-1}$*FREEMOB					-1.629 (.196)	-.625 (.471)
$UNEMP_{FRA,t-1}$*FREEMOB					.147 (.102)	-.015 (.820)
$LNETWORK_{m,t-1}$*FREEMOB					1.707(.011)**	.908 (.073)*
$LDISP_{j,t-1}$ (<1)*FREEMOB					7.565 (.137)	4.789 (.087)*
$LDISPI_{j,t-1}$ (≥1)[b]*FREEMOB					-7.445 (.172)	-4.152 (.196)
N (d.f.)	378 (303)	378 (303)	378 (301)	378 (301)	378 (297)	378 (297)
F-test for $C=C_j$.	18.117 (.000)	16.655 (.000)	18.069 (.000)	16.715 (.000)	16.560 (.000)	15.652 (.000)
Adj. R^2	.844	.894	.845	.897	.844	.895

[a] Standard errors are heteroskedastic-consistent. P-value in parentheses. [b] Deviation with respect to the original variable.

Table 6: Impact of free mobility on immigrant workers to Switzerland, all definitions

	1.	2.	3.	4.	5.
	$LIFL_{SWI,j,t}$ *(skilled)*	$LIFL_{SWI,j,t}$ *(skilled)*	$LIFL_{SWI,j,t}$ *(skilled)*	$LIFL_{SWI,j,t}$ *(semi-skilled)*	$LIFL_{SWI,j,t}$ *(highly skilled)*
	All countries OLS	***All countries Panel***	***2000-2004***	***2000-2004***	***2000-2004***
$LPOP_{j,t-1}$[a]	.286 (.000)**	.660 (.462)	.860 (.315)	-.371 (.752)	1.109 (.313)
$LRELINC_{SWI,j,t-1}$	-.383 (.000)**	.166 (.788)	.018 (.976)	.499 (.603)	-.388 (.494)
$UNEMP_{SWI,t-1}$	-.193 (.000)**	-.131 (.000)**	-.121 (.000)**	-.180 (.000)**	-.089 (.000)**
$LNETWORK_{m,t-1}$	.486 (.510)**	.564 (.170)	.702 (.081)*	.277 (.637)	.846 (.214)
Regional dummies	Yes	No	No	No	No
Language, border dummies	Yes	No	No	No	No
Sri Lanka, new policy, dummies	Yes	Yes	Yes	Yes	Yes
Source-destination fixed effects	No	Yes	Yes	Yes	Yes
Free mobility dummy	No	No	-.195 (.130)	.193 (.302)	-.366 (.009)**
N (d.f.)	245 (229)	245 (190)	245 (189)	245 (189)	245 (189)
F-test for $C=C_j$. (Fixed effects)	-	26.864 (.000)	27.817 (.000)	10.255 (000)	30.365 (.000)
Adj. R^2	.839	.962	.964	.930	.953

[a] Standard errors are heteroskedastic-consistent. P-value in parentheses. [b]Deviation with respect to the original variable.

Table 7: Impact of free mobility on immigrant workers to Switzerland: semi- and highly-skilled

	1.	2.	3.	4.
	$LIFL_{SWI,j,t}$ (semi skilled)	$LIFL_{SWI,j,t}$ (highly skilled)	$LIFL_{SWI,j,t}$ (semi skilled)	$LIFL_{SWI,j,t}$ (highly skilled)
$LPOP_{j,t-1}$[a]	-.150 (.898)	1.297 (.239)	-.212 (.847)	.851 (.445)
$LRELINC_{SWI,j,t-1}$	.265 (.789)	-.583 (.317)	.460 (.611)	-.134 (.809)
$UNEMP_{SWI,t-1}$	-.229 (.000)**	-.126 (.000)**	-.217 (.000)**	-.100 (.000)**
$LNETWORK_{m,t-1}$	.257 (.658)	.839 (.217)	.461 (.430)	1.036 (.135)
Regional dummies	No	No	No	No
Language, border dummies	No	No	No	No
Sri Lanka, new policy, dummies	Yes	Yes	Yes	Yes
Source-destination fixed effects	Yes	Yes	Yes	Yes
Free mobility dummy	3.548 (.001)**	.534 (.673)	-	-
$FREEMOB_{SWI}*TIME$	-1.936 (.000)**	-.663 (.287)	-	-
$FREEMOB_{SWI}*TIME^2$	.263 (.000)**	.103 (.180)	-	-
$LPOP_{j,t-1}*FREEMOB$	-	-	.425 (.014)**	.134 (.364)
$LRELINC_{SWI,j,t-1}*FREEMOB$	-	-	1.020 (.008)**	1.156 (.002)**
$UNEMP_{SWI,t-1}*FREEMOB$	-	-	.178 (.008)**	.091 (.128)
$LNETWORK_{m,t-1}*FREEMOB$	-	-	-.176 (.001)**	-.143 (.006)**
N (d.f.)	245 (187)	245 (87)	245 (186)	245 (186)
F-test for $C=C_j$. (Fixed effects)	10.542 (.000)	30.870 (.000)	11.118 (.000)	31.472 (000)
Adj. R^2	.932	.953	.935	.955

[a] Standard errors are heteroskedastic-consistent. P-value in parentheses. [b]Deviation with respect to the original variable.

Figure 1: Distribution of flows by skill categories, France.

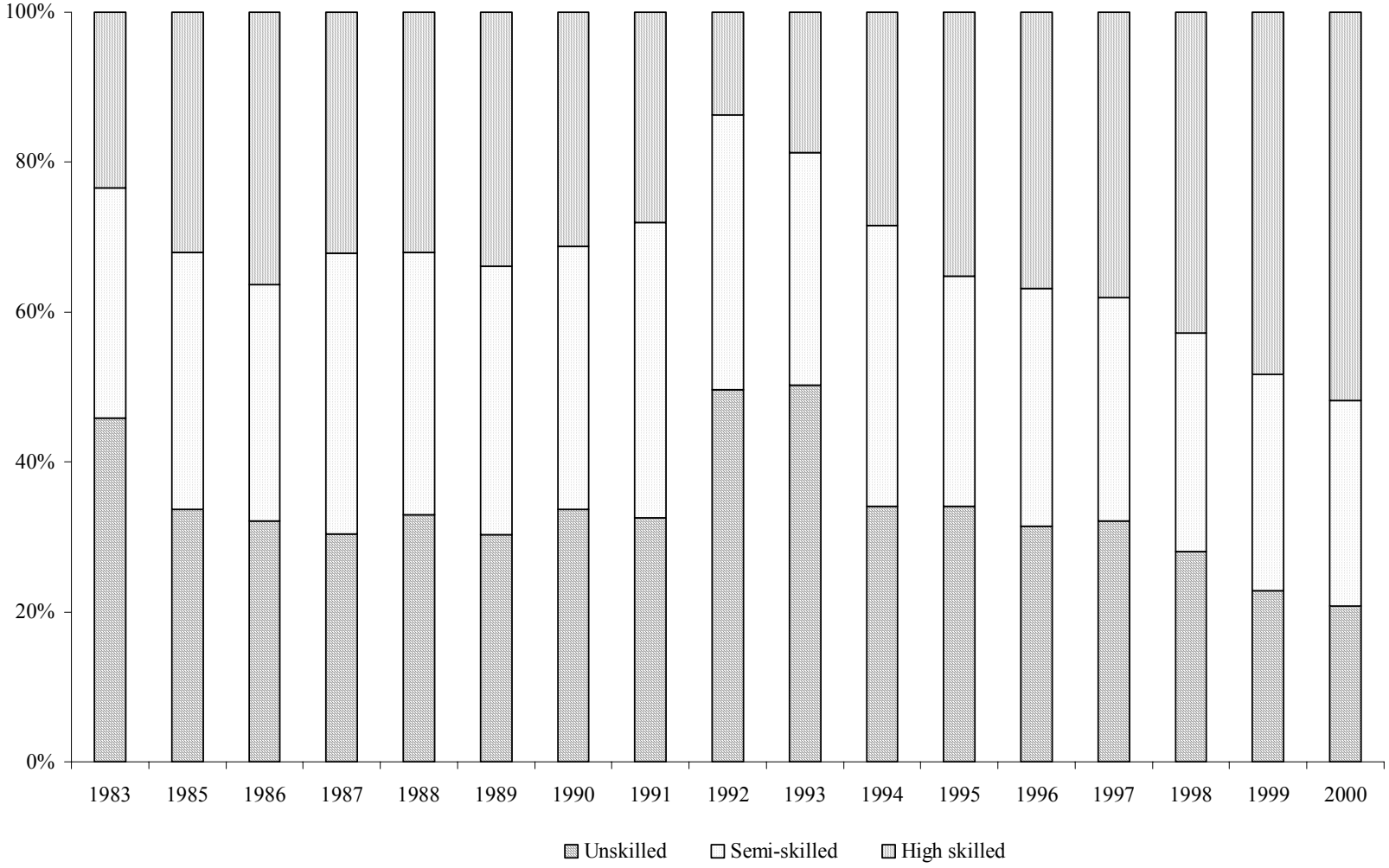

Figure 2: Flows of skilled immigrant-workers to France

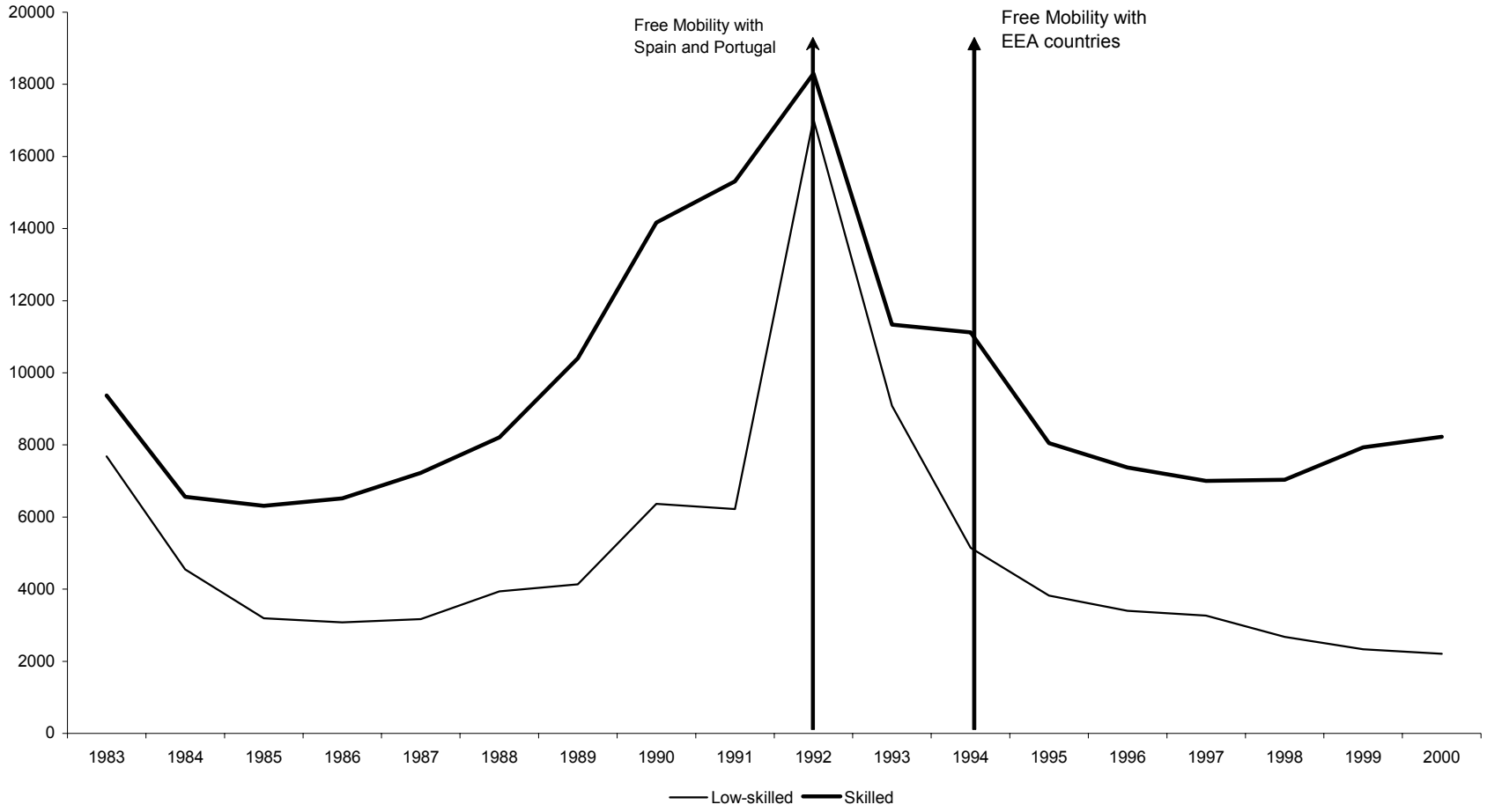

Figure 3: Flows of semi-skilled workers to France: High-income vs Developing countries

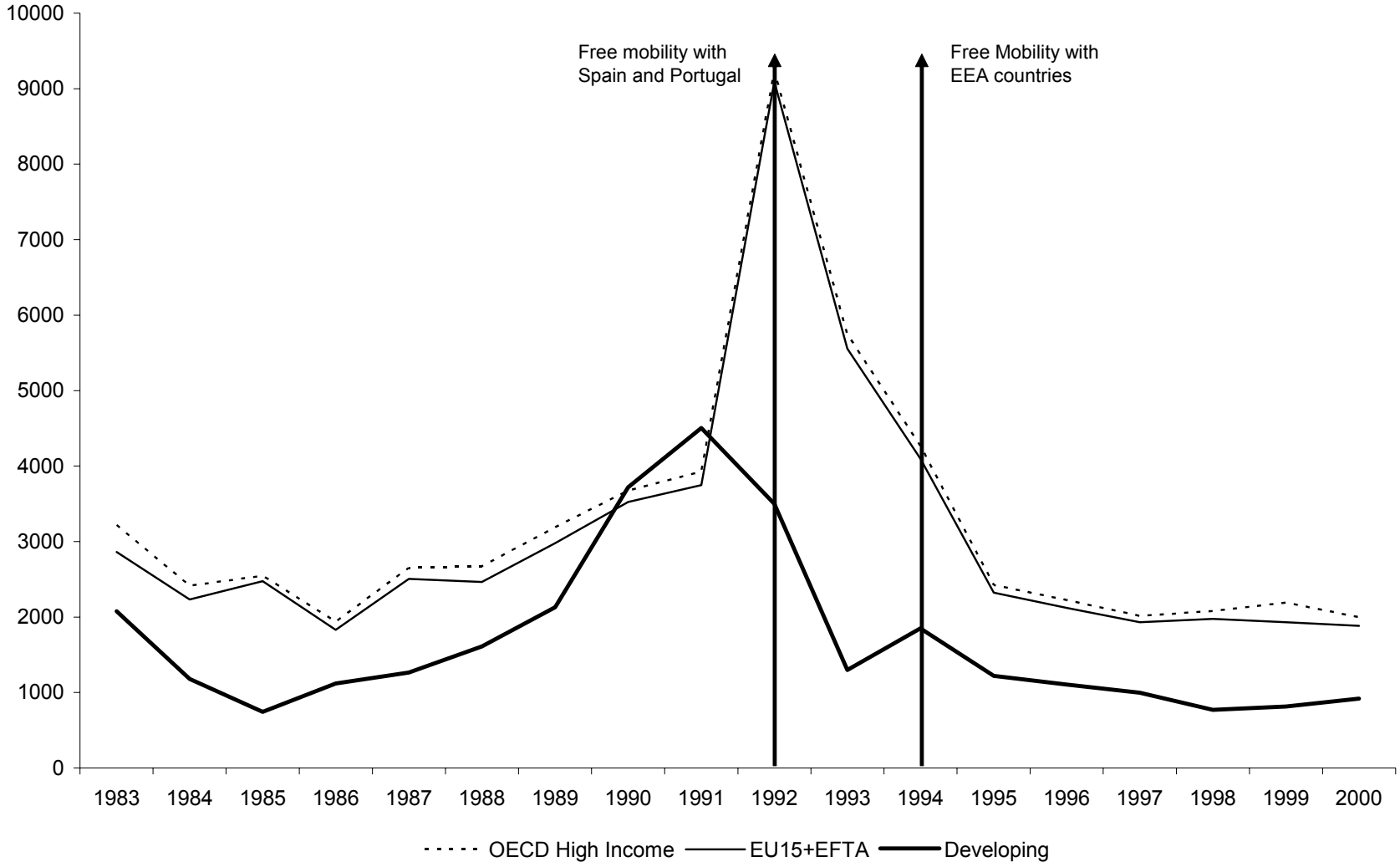

Figure 4: Flows of highly skilled workers to France: High-income vs Developing countries

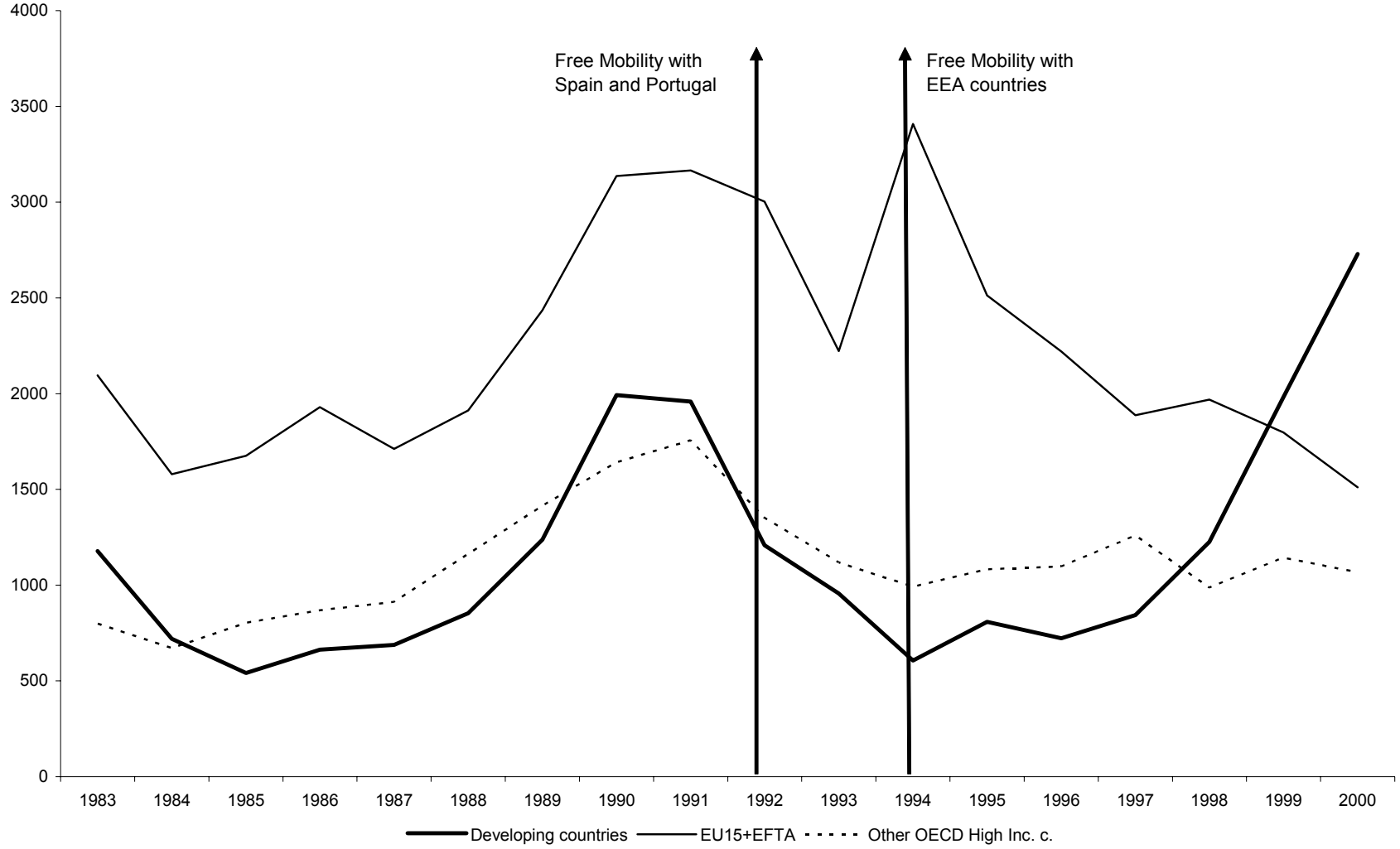

Figure 5: Flows of skilled workers to France from European countries

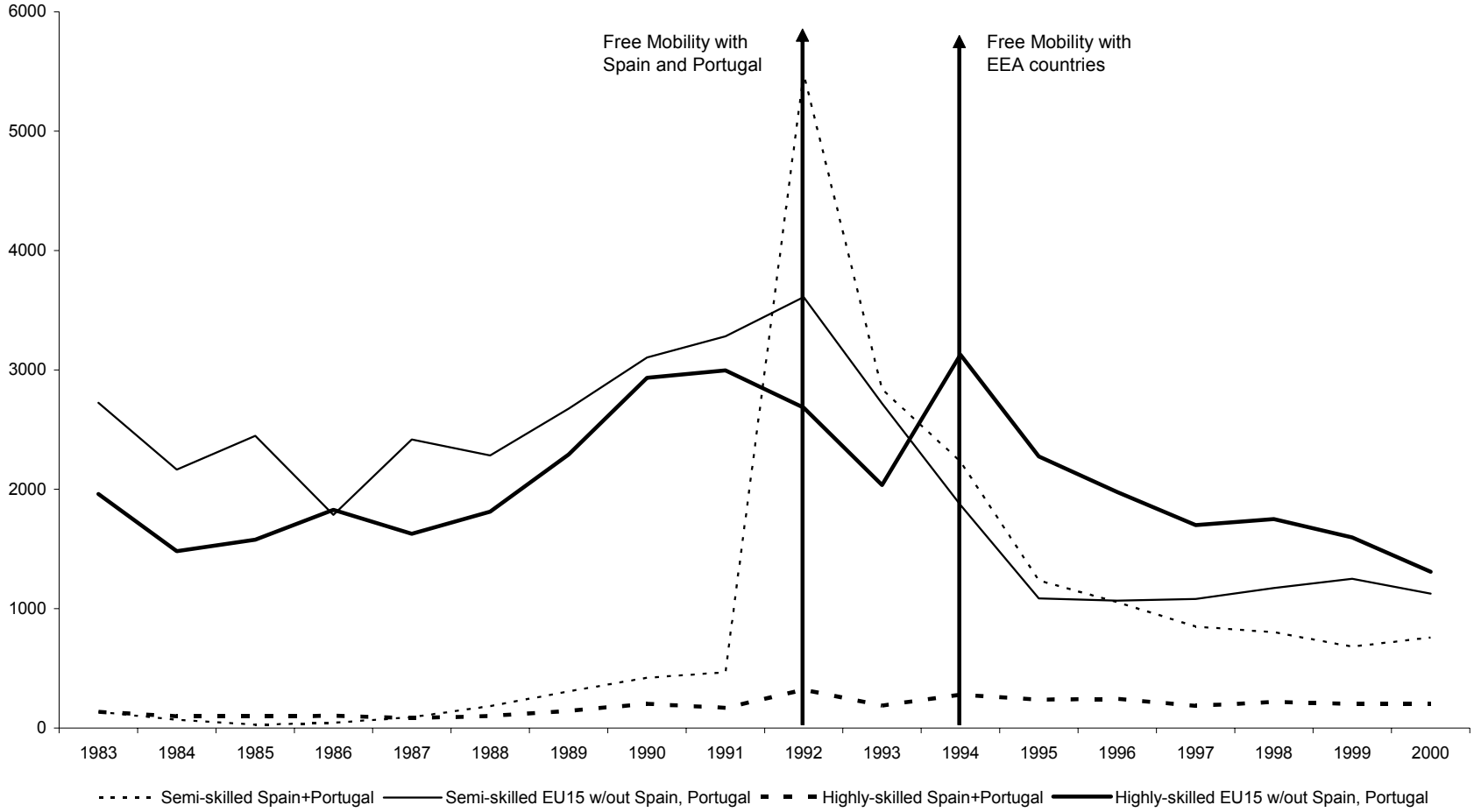

Figure 6: Flows of semi-skilled workers to France from developing countries

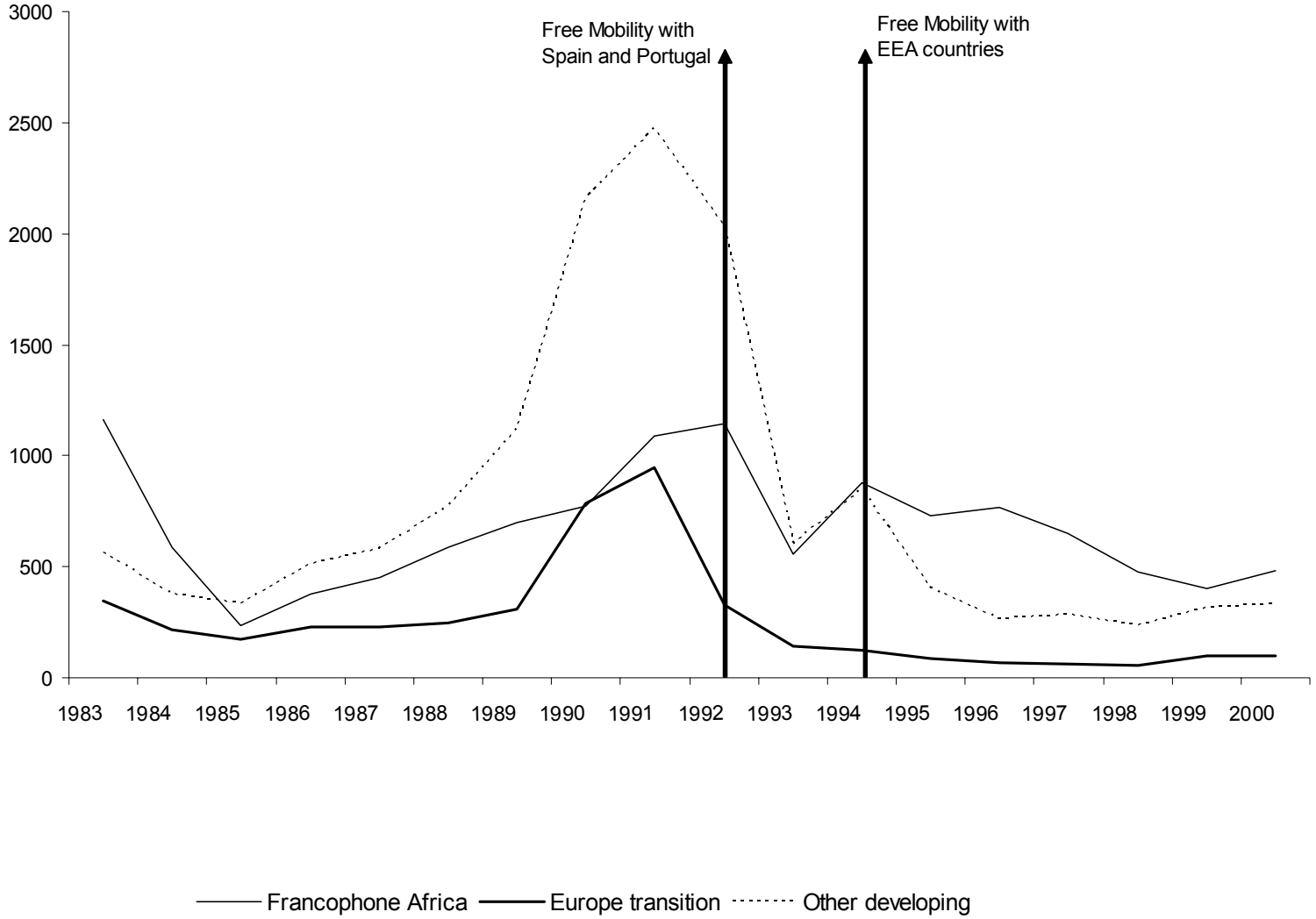

Figure 7: Flows of highly-skilled workers to France from developing countries

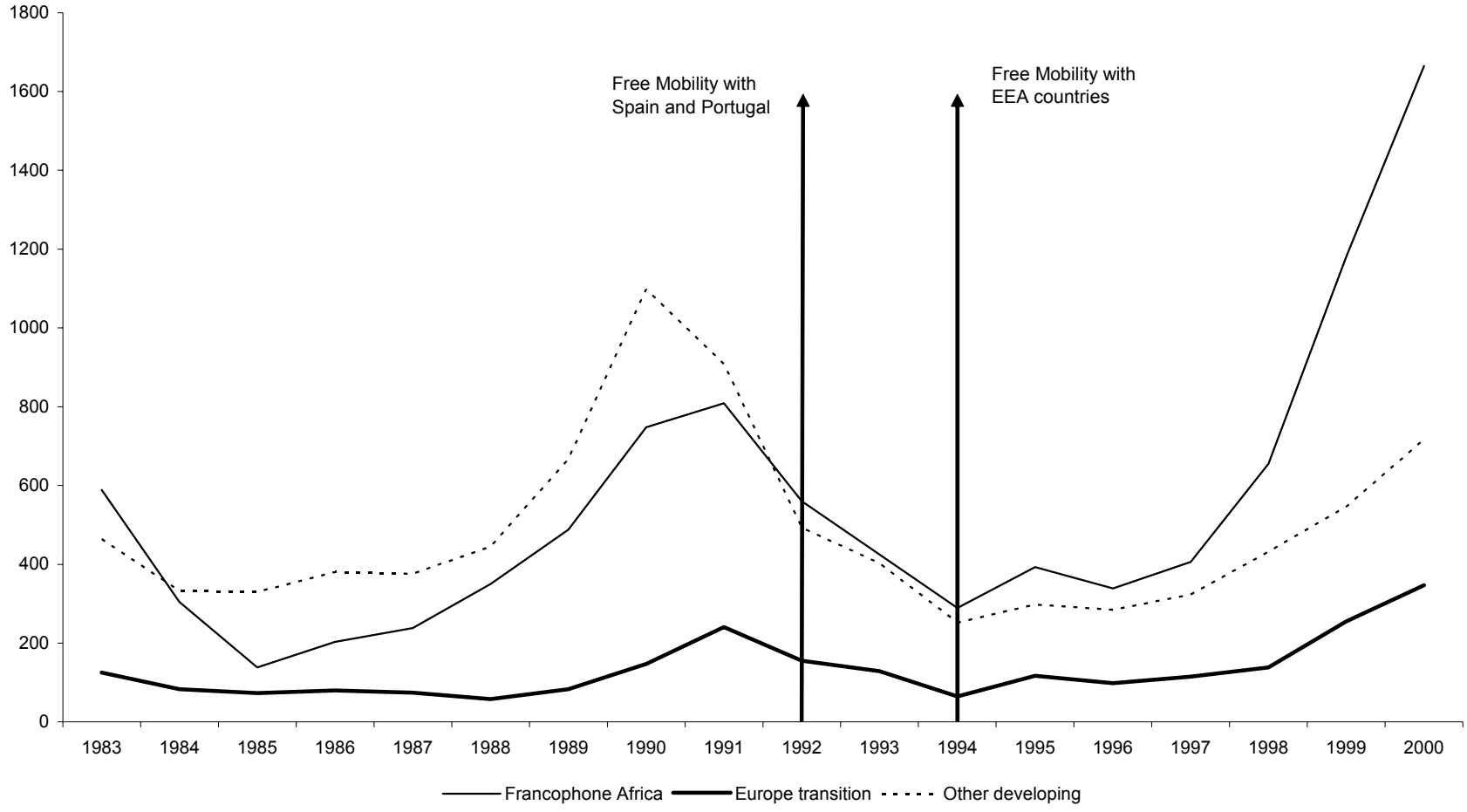

Figure 8: Total flows of immigrant workers to Switzerland: 2000-04

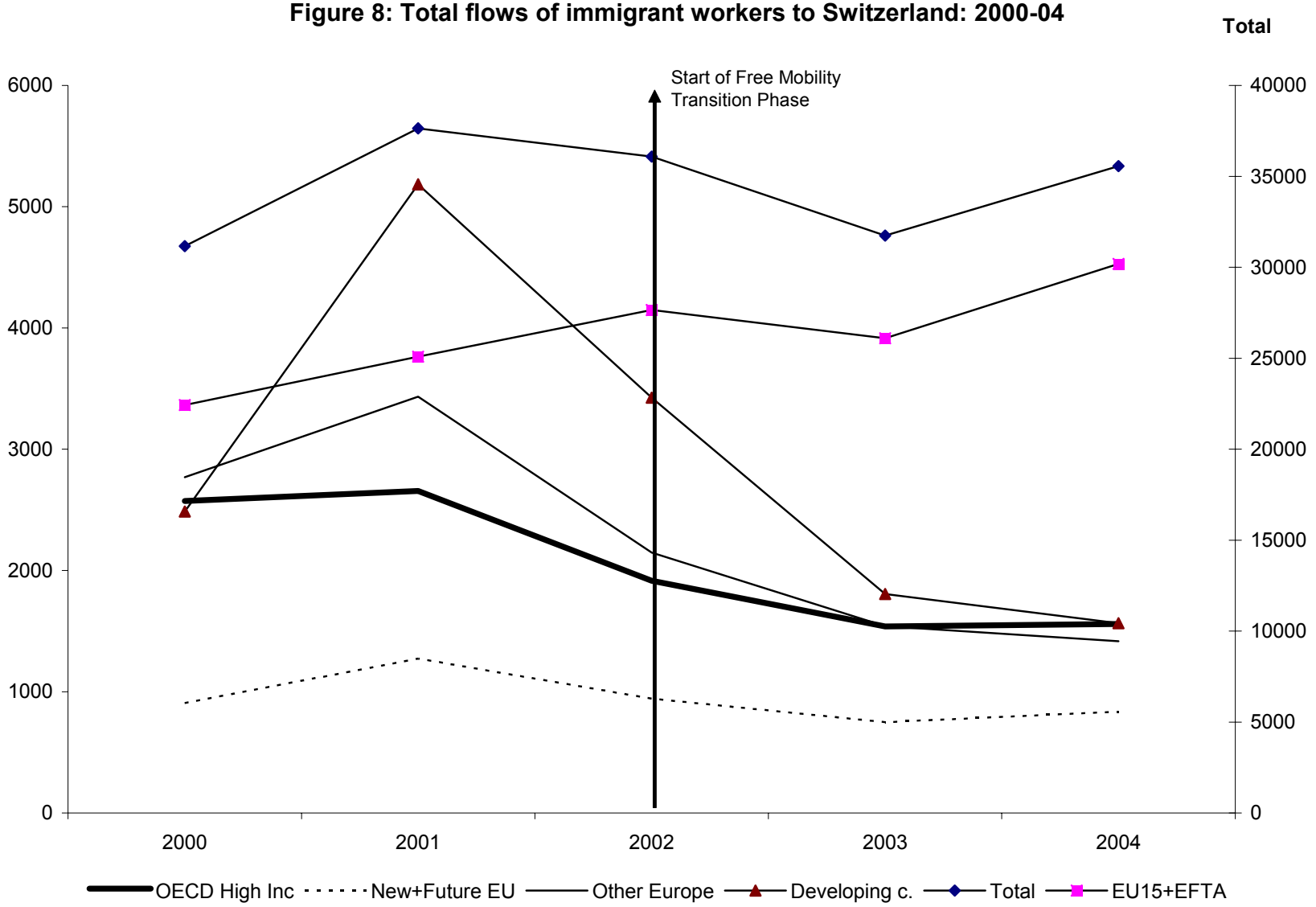

Figure 9: Flows of semi-skilled (minus) workers to Switzerland: 2000-04

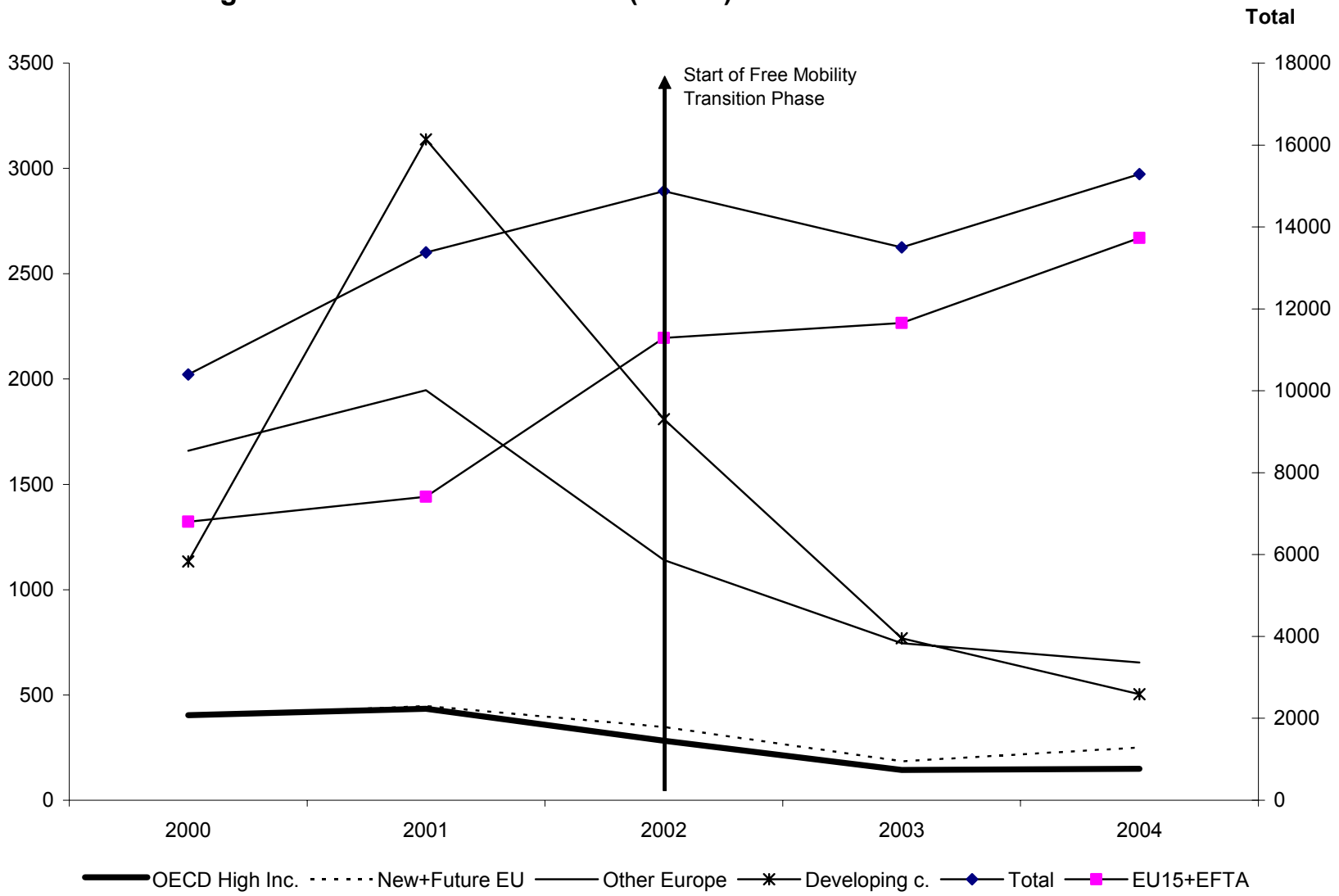

Figure 10: Flows of highly-skilled workers to Switzerland: 2000-04