

Highly skilled migrants in the Swiss labour market

With a special focus on migrants from developing countries

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I Introduction

After the Second World War, many industrialized countries – including Switzerland – resorted to procyclical exploitation of foreign workers, who were essentially low-skilled. The practice of such an immigration policy was initially used to satisfy the excessive internal labour demand during an economic boom, thereby sustaining growth (Salt *et al.*, 2004).

The determinants of economic growth have changed progressively since the oil crisis of the 1970s. According to the *new growth theory*, human capital¹ is one of the necessary bases for economic growth (Lucas, 1988). Indeed, the gross domestic expenditure on R&D increased significantly during the 1990s and the field of science and technology (referred to as S&T hereinafter)² grew considerably in the majority of developed countries, including Switzerland (Pastor, 2000). Moreover, the relative labour demand for highly skilled workers has increased at the expense of the less skilled, which is more commonly referred to as *skill bias technological change*. At the same time, we have observed an increase in the relative labour supply of qualified workers. Accordingly, the nature of migration flows, which was mainly characterized by a low-skilled labour force, has evolved in favour of highly skilled labour (Pecoraro, 2005).

The aim of this paper is to complete the existing literature concerning highly skilled migrants in Switzerland by offering new trends with a particular focus on developing countries as source countries, using a multitude of data set available nowadays. This paper is organized as follows. The first section has introduced the subject, whereas the second section describes the labour migrants in Switzerland and their characteristics.

¹ The human capital indicates any form of investment made by an individual to improve his knowledge, his culture, his health, even his social network.

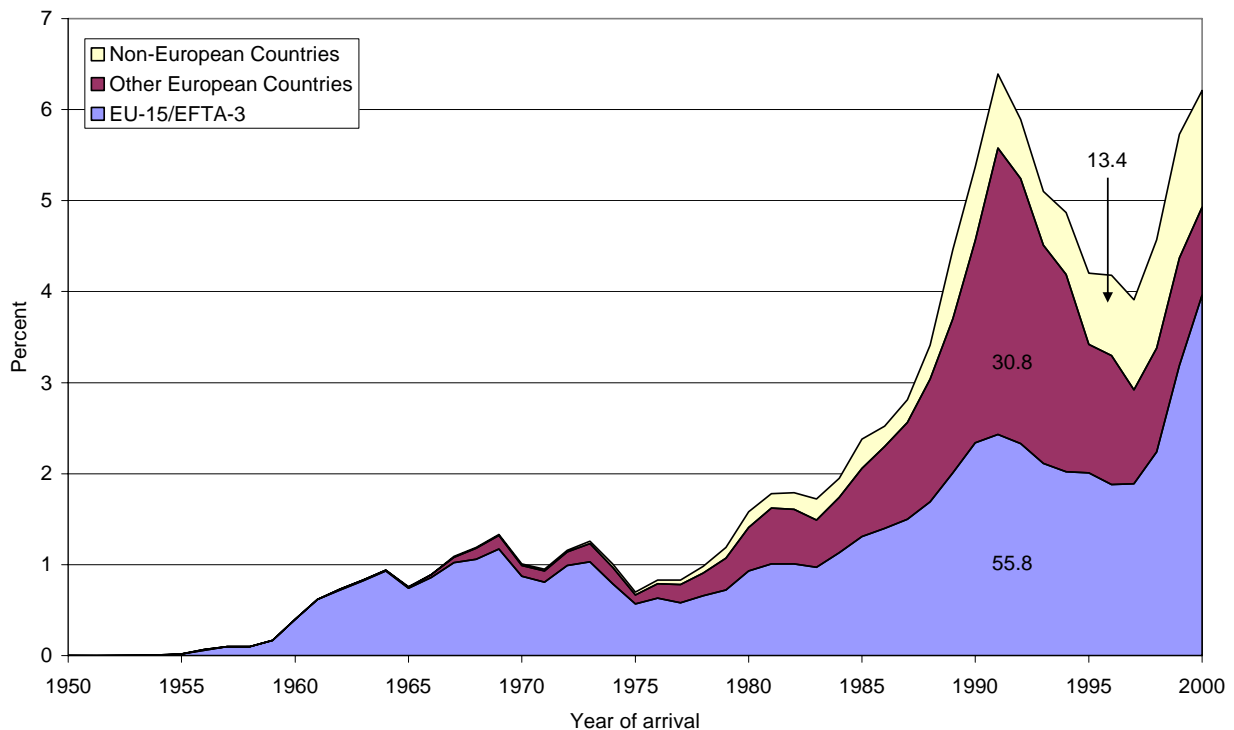
² The concept of « science and technology » is related to the activities for which a high-skill level is normally required.

II Immigrants in Switzerland: some descriptive statistics

II.1 Overview

Figure 1 outlines the historical pattern of immigration into Switzerland for the primary migrant labour force in 2000, using matched data taken from the Swiss population census 2000, the Central Register of Foreigners (ZAR) and the Automated Personal Registration System (AUPER). The primary migrants are the foreign-born persons who were at least 15 years old at the time of their entry into Switzerland. The graph shows that a large fraction of working-age primary migrants in 2000 are recent arrivals. At least 6% of all primary migrants arrived within the last year, around 12% arrived since 1999, and more than half arrived within the last ten years. The distinction between three groups of foreigners – those coming from the 15 (pre-enlargement) member countries of the European Union or the EFTA states, those coming from other European countries (including Eastern European countries, ex-Yugoslavia and Turkey), and those coming from the rest of the World – indicates major stylised facts of immigration to Switzerland.³ First, immigration fluctuates jointly with the business cycle, wars in ex-Yugoslavia and different policies intended to regulate this former. Secondly, the second half of the 1980s is characterized by a high growth rate of labour migration, especially coming from the other European countries. Thirdly, immigration from non-European countries significantly takes place from the 1990s (cf. Figure 2); during the same period, the Swiss government introduced a range of restrictive policies with respect to the admission of immigrants from outside the EU/EFTA area.

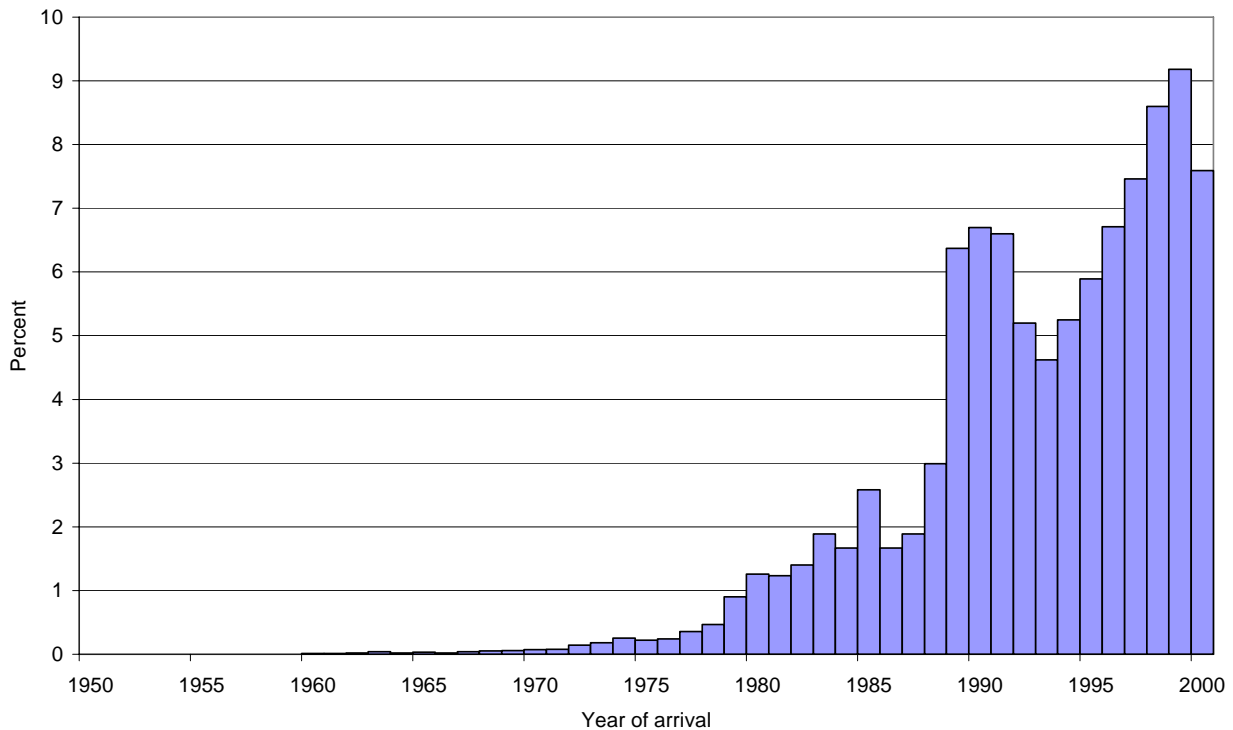
Figure 1: Distribution of primary migrants living in Switzerland in 2000 by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
Note: Men aged 15-64; women aged 15-61.

³ Notice that this graph illustrates the historical immigration pattern of immigrants who are resident in Switzerland in 2000, not the pattern of inflows, due to mortality and return migration.

Figure 2: Distribution of primary migrants from Non-European developing countries* and living in Switzerland in 2000, by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
 Note: Men aged 15-64; women aged 15-61. * Africa, Latin America and Asia without Japan, Taiwan, South Korea, Singapore and Israel.

According to these policies, which anticipate on free mobility with the EU countries, employers are advised to fill their needs with migrants from the latter countries; moreover, they can prospect worldwide for skilled workers. However, these hiring strategies are conceivable only if any native worker cannot be recruited to fill the vacant job⁴ (with some exceptions regarding intra-firm transfer and family regrouping⁵). Thereby, the transition to a knowledge-based economy combined with the Swiss legislation in terms of immigration, which is definitely based on the selective admission of immigrants according to the skill level by means of the national origin, have probably contributed to qualifications improvement among contemporary migration flows.

II.2 Highly skilled migrants on the Swiss labour market

There are at least two ways to measure the worker's skill level. The traditional method refers to the educational attainment; more precisely, the employed or unemployed workers with a tertiary-level education are defined as being high-skilled. The second method does not rely exclusively on the educational background, but it also takes into account the type of occupation; according to the "Canberra Manual" (1995), the highly skilled labour force either has successfully completed education at the tertiary level or else it is employed in a S&T occupation.⁶

Table 1 shows the proportion of the migrant labour force⁷ with a tertiary-level education in 1990 and 2000. For nearly all migrant groups (excepted the Latin America community taken as a whole), this share improved during the 1990s. For the total migrant population, it increased by almost two thirds (21.1% in 2000 as opposed to 12.8% ten years ago). In 1990, most labour migrants from North America and Oceania had completed a tertiary-level education,

⁴ According to the agreement on the free movement of persons between Switzerland and the EU (in force since 1st June 2002), the priority given to native workers does not prevail anymore towards citizens of the EU-15/EFTA since 1st June 2004.

⁵ The law project on foreigners adopted on 24 September 2006 by a majority of the Swiss population tightens from now on possibilities of family regrouping concerning non-European citizens.

⁶ The S&T occupations include a rather large group of jobs (corporate managers, specialists in their field of competences) and do not exclusively refer to scientific qualifications.

⁷ In all tables of this paper, the migrant population represents all foreign-born persons whatever the date of entry in Switzerland.

whereas only a minority of those from other origins had achieved such a qualification (the proportions ranged from 10% to 30%). In 2000, however, Chinese and Indian migrants showed higher shares of third-level educated workers than ten years before; moreover, these figures rise above 50% (also the case with South African migrants) while they remain below 30% in reports by regions of origin.

Table 1: Distribution of migrant labour force by the highest level of education attained

| Geographical origin | 1990 | | | 2000 | | |
|---------------------------------|--------------------------|----------------|---------|--------------------------|----------------|---------|
| | Education | | Total | Education | | Total |
| | Below the tertiary level | Tertiary level | | Below the tertiary level | Tertiary level | |
| Europe | 88.5 | 11.5 | 655'358 | 80.3 | 19.7 | 649'414 |
| <i>EU-15/EFTA-3</i> | | | | 75.3 | 24.7 | 413'665 |
| <i>Other European Countries</i> | | | | 89.9 | 10.2 | 235'749 |
| Africa | 76.9 | 23.1 | 15'168 | 75.4 | 24.6 | 24'013 |
| <i>North Africa</i> | | | | 70.7 | 29.3 | 9'323 |
| <i>Sub-Saharan Africa</i> | | | | 78.5 | 21.5 | 14'690 |
| <i>South Africa</i> | | | | 44.1 | 55.9 | 629 |
| North America | 32.3 | 67.7 | 7'088 | 20.4 | 79.6 | 9'607 |
| Latin America | 72.8 | 27.2 | 8'879 | 74.0 | 26.0 | 17'386 |
| <i>Colombia</i> | | | | 63.9 | 36.1 | 1'508 |
| Asia | 82.8 | 17.2 | 36'932 | 75.8 | 24.2 | 43'304 |
| <i>China</i> | 72.8 | 27.2 | 1'687 | 46.8 | 53.2 | 2'527 |
| <i>India</i> | 74.6 | 25.4 | 3'520 | 41.0 | 59.0 | 2'923 |
| Oceania/Other Countries | 45.3 | 54.7 | 1'296 | 36.5 | 63.5 | 1'797 |
| Total | 87.2 | 12.8 | 724'721 | 78.9 | 21.1 | 745'521 |

Source: Swiss population censuses data 1990-2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

Using the definitions included in the “Canberra Manual” (1995), Table 2.1 proposes similar trends. Since 1990, migrants to Switzerland have been more and more highly skilled, whatever the origins of population (apart from Latin America in aggregate terms). In 2000, highly skilled migrants represented 36.4% of the migrant labour force compared to 22.2% ten years previously. This proportion reaches 38.9%, 30.1%, 38.3% and 35.4% among migrants from North Africa, Sub-Saharan Africa, Latin America and Asia respectively. Again, migrants from South Africa, China and India are mainly high-skilled (73.1%, 61.7% and 79.5% respectively).

A way to interpret migration in time with the census is to distinguish migrants according to the place of residence five years before 2000 – in Switzerland or abroad. In the latter case, migrants are considered as recent. As can be seen in Table 2.2, the share of highly skilled labour among migrants recently arrived in Switzerland amounts to 54.9% – i.e. 18,5 points more than among the total migrant population. In other words, overall migration flows to Switzerland during the second part of the 1990s are increasingly related to a skilled labour force. However, this stylised fact is less straightforward according to some regions of origin; for instance, recent migrants from North Africa, Sub-Saharan Africa and Latin America are less likely to be skilled with respect to their total counterpart. So we need another criterion – such as the year of entry into Switzerland – in order to assess with greater rigour how the skill composition evolved among contemporary migration flows from different origins, with a particular focus on developing countries.

Table 2.1: Distribution of the migrant labour force by skill level

| | 1990 | | | 2000 | | |
|---------------------------------|----------------|-------------|---------|----------------|-------------|---------|
| | Highly skilled | Low-skilled | Total | Highly skilled | Low-skilled | Total |
| Geographical origin | | | | | | |
| Europe | 20.8 | 79.2 | 655'358 | 35.3 | 64.7 | 649'414 |
| <i>EU-15/EFTA-3</i> | | | | 41.6 | 58.4 | 413'665 |
| <i>Other European Countries</i> | | | | 20.2 | 79.8 | 235'749 |
| Africa | 32.2 | 67.8 | 15'168 | 33.7 | 66.3 | 24'013 |
| <i>North Africa</i> | | | | 38.9 | 61.1 | 9'323 |
| <i>Sub-Saharan Africa</i> | | | | 30.1 | 69.9 | 14'690 |
| <i>South Africa</i> | | | | 73.1 | 26.9 | 629 |
| North America | 82.1 | 17.9 | 7'088 | 90.5 | 9.5 | 9'607 |
| Latin America | 42.6 | 57.4 | 8'879 | 38.3 | 61.7 | 17'386 |
| <i>Colombia</i> | | | | 45.8 | 54.2 | 1'508 |
| Asia | 25.6 | 74.4 | 36'932 | 35.4 | 64.6 | 43'304 |
| <i>China</i> | 36.2 | 63.8 | 1'687 | 61.7 | 38.3 | 2'527 |
| <i>India</i> | 42.6 | 57.4 | 3'520 | 79.5 | 20.5 | 2'923 |
| Oceania/Other Countries | 69.1 | 30.9 | 1'296 | 78.3 | 21.7 | 1'797 |
| Total | 22.2 | 77.8 | 724'721 | 36.4 | 63.6 | 745'521 |

Source: Swiss population censuses data 1990-2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manuel (1995). The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

Table 2.2: Distribution of the migrant labour force in 2000, total vs. recent migrants

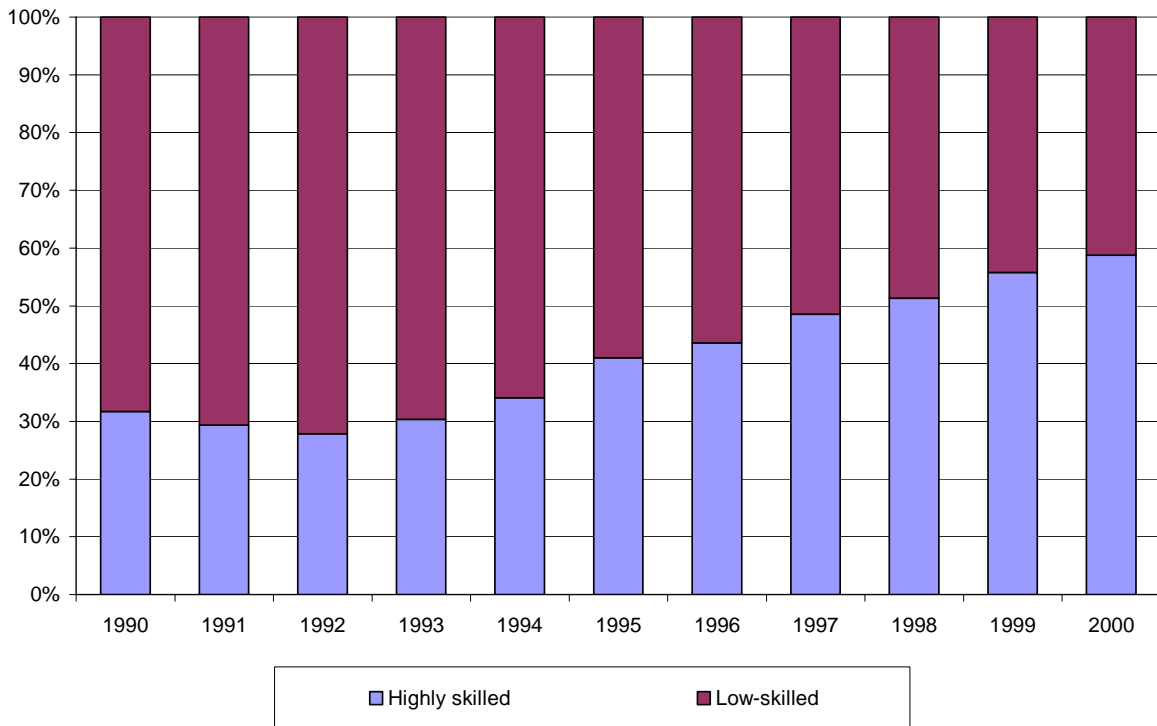
| | Migrant population | | Recent migrants* | |
|---------------------------------|-------------------------|---------|-------------------------|---------|
| | Share of highly skilled | Total | Share of highly skilled | Total |
| EU-15/EFTA | 41.6 | 413'665 | 66.0 | 76'064 |
| Other European Countries | 20.2 | 235'749 | 29.9 | 33'447 |
| North Africa | 38.9 | 9'323 | 35.7 | 4'038 |
| Sub-Saharan Africa | 30.1 | 14'690 | 28.4 | 6'050 |
| <i>South Africa</i> | 73.1 | 629 | 78.7 | 424 |
| North America | 90.5 | 9'607 | 91.4 | 5'316 |
| Latin America | 38.3 | 17'386 | 37.7 | 7'760 |
| <i>Colombia</i> | 45.8 | 1'508 | 41.3 | 894 |
| Asia | 35.4 | 43'304 | 41.3 | 13'370 |
| <i>China</i> | 61.7 | 2'527 | 65.4 | 1'257 |
| <i>India</i> | 79.5 | 2'923 | 83.6 | 1'227 |
| Oceania/Other Countries | 78.3 | 1'797 | 82.4 | 1'076 |
| Total | 36.4 | 745'521 | 54.9 | 147'121 |

Source: Swiss population census data 2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manuel (1995). The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland. * Recent migrants correspond to the migrants arrived in Switzerland after 1995.

Figure 3 presents the share of high-skilled labour by year of entry during the 1990s for the overall primary migrant population living in Switzerland in 2000. This share did not cease growing from the cohort arrived in 1992 and rose above 50% among cohorts arrived since 1998. The maximum share is reached among primary migrants arrived in 2000 (about 60% of this cohort). Hence, these trends confirm previous findings regarding the strong reorientation of migration flows towards more skilled personnel.

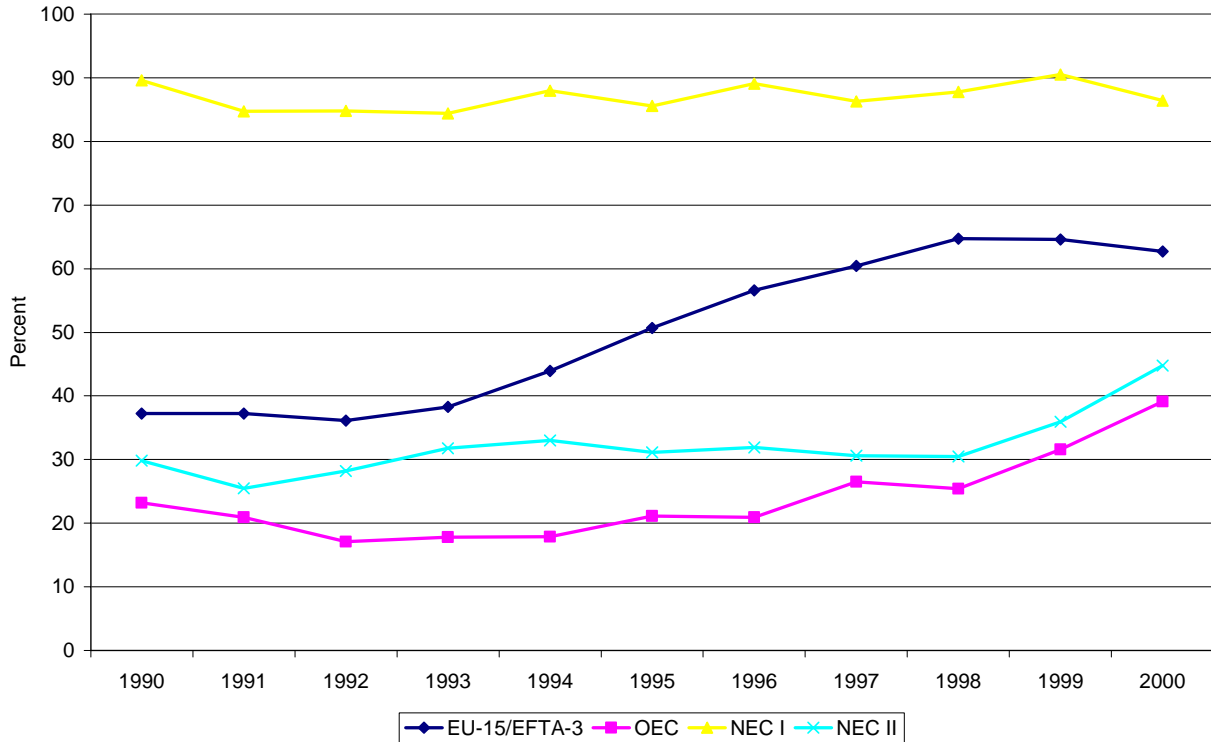
Figure 3: Distribution of primary migrants living in Switzerland in 2000 by skill level, according to cohort of entry (since 1990)



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manuel (1995).

Figure 4 displays the same information according to four main regions of origin. In comparison with Figure 3, we have also an increase in the proportion of highly skilled labour from the cohorts arrived at the beginning of the 1990s, excepted in the case of those coming from non-European developed countries (i.e. NEC I) whose cohorts remain by a great majority highly skilled (proportions ranging between 85% and 90%). However, the “speed” (= slope) of progression differs according to national origin. While the maximum share is reached among EU/EFTA cohorts arriving in 1998 and 1999 (two thirds in each cohort), the share growth rate increased strongly among cohorts from non-EU/EFTA countries (North America, Japan, Taiwan, South Korea, Singapore, Israel and the countries of Oceania excluded) arriving during the same period (steeper slopes). When only non-European developing countries (i.e. NEC II) are considered, the share of highly skilled labour remains stable (around 30%) among the cohorts arriving between 1990 and 1998, then increases for cohorts who arrived after 1999 and reaches the maximum value (about 45%) among the cohort arriving in 2000.

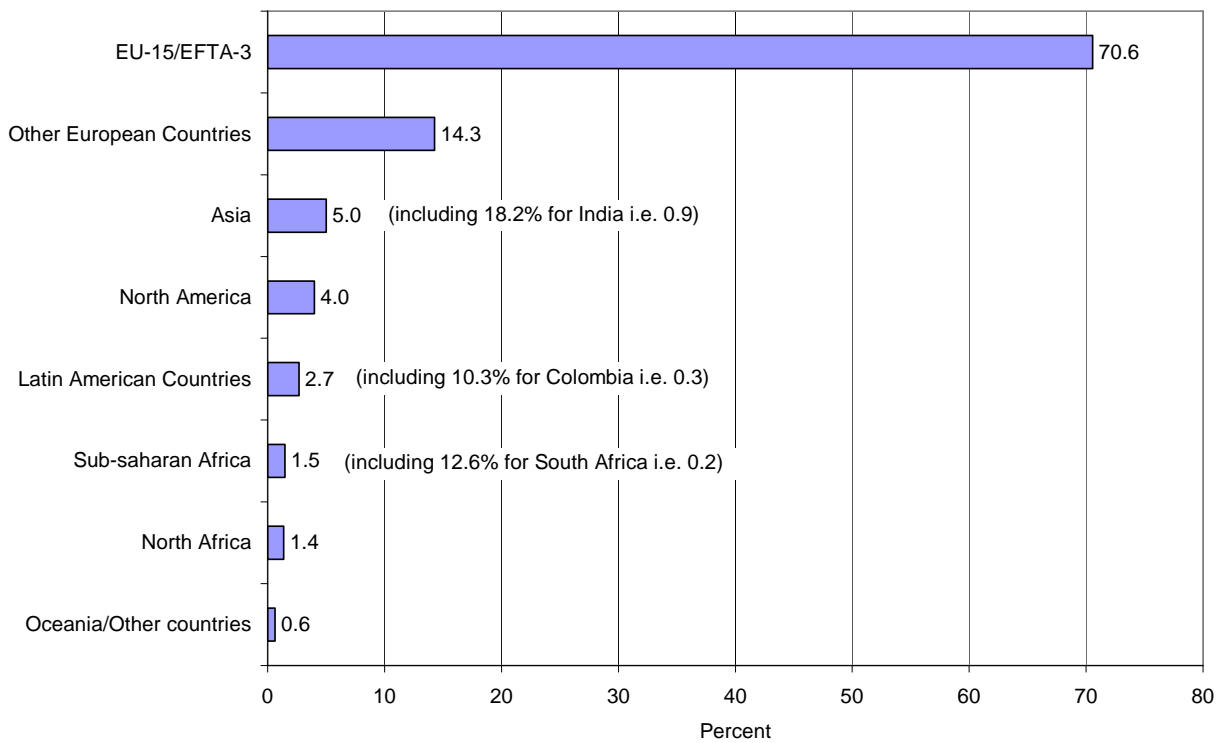
Figure 4: Share of high-skilled primary migrants living in Switzerland in 2000, according to region of origin (four main groups) and cohort of entry (since 1990)



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
 Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manual (1995). OEC = Other European countries; NEC I = Non-European developed countries (i.e. North America, the countries of Oceania, Japan, Taiwan, South Korea, Singapore and Israel); NEC II = Non-European developing countries (i.e. Africa, Latin America and Asia without Japan, Taiwan, South Korea, Singapore and Israel).

Figure 5 shows how the location of Switzerland within Europe plays an important role in attracting highly skilled labour from the EU countries (especially the border countries). In 2000, close to three quarters of all the highly skilled migrants come from the pre-enlarged European Union and the EFTA states; besides, it is worth noting that most of them are Germans, Italians and Frenchmen (47% of all the highly skilled migrants). On the other hand, non-Europeans constitute only 15% of all the highly skilled migrants; proportions reach 5%, 4%, 2.9%, 2.7% and 0.6% among migrants from Asia, North America, Africa, Latin America and Oceania respectively. Moreover, the distinction between developed vs. developing non-European countries establishes that migrants from the latter origin account for less than 10% of all the highly skilled migrants. Lastly, we note that the share of Indians among highly skilled migrants is below 1% whereas this share is below 0.5% for Colombians or South Africans; accordingly, the likelihood that these particular populations exert any macroeconomic influence (e.g. through remittances) on economic growth in their respective countries of origin should be relatively small, even insignificant.

Figure 5: Distribution of high-skilled migrant labour force in 2000 by geographical origin



Source: Swiss population censuses data 1990-2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manuel (1995). The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.

Finally, Table 3 gives a better presentation with regard to the distribution of high-skilled migrants by branch of economic activity. Highly skilled migrants, considered as a whole, hold down jobs related to manufacturing and energy in a greater proportion. European nationals – 17.6% of high-skilled migrants from the EU/EFTA countries and 19.9% of those from the rest of Europe – are the most involved in this branch. They are in health and social activities too: they account for 15.6% of high-skilled migrants from the EU/EFTA countries and 21.2% of those from the rest of Europe. By focusing on the three selected countries chosen for the Case Study, we clearly see that the field of real estate and other business activities presents the most important shares of highly skilled migrants from South Africa and Colombia (19.6% and 16.1% respectively). We have however a rather different trend for high-skilled Indians; at least one fourth of them are occupied in the sector of health and social work.

Table 3: Distribution of high-skilled migrant labour force in 2000 by branch of economic activity

| | Branch of economic activity | | | | | | | | | | | | Total |
|---------------------------------|-----------------------------|--------------------------|--------------|-------------|------------------------|---------------------|-----------------------|---|-----------------------|-----------|------------------------|-------------------|-------|
| | Agriculture and fishing* | Manufacturing and energy | Construction | Trade | Hotels and restaurants | Transport and comm. | Finance and insurance | Real estate and other business activities | Government services** | Education | Health and social work | Other services*** | |
| Geographical origin | | | | | | | | | | | | | |
| EU-15/EFTA | 0.7 | 17.6 | 2.6 | 13.3 | 5.6 | 3.7 | 8.7 | 16.2 | 2.5 | 8.1 | 15.6 | 5.3 | 100.0 |
| Other European Countries | 1.1 | 19.9 | 5.6 | 12.8 | 8.3 | 4.2 | 4.3 | 10.8 | 2.3 | 4.5 | 21.2 | 4.9 | 100.0 |
| North Africa | 0.5 | 13.0 | 1.6 | 15.9 | 12.1 | 7.3 | 5.8 | 13.4 | 6.8 | 7.8 | 9.5 | 6.4 | 100.0 |
| Sub-Saharan Africa | 1.0 | 12.5 | 1.6 | 10.2 | 8.5 | 7.6 | 6.3 | 14.8 | 9.0 | 7.9 | 11.8 | 8.7 | 100.0 |
| <i>South Africa</i> | 0.4 | 12.2 | 0.4 | 12.5 | 5.1 | 9.8 | 18.0 | 19.6 | 1.6 | 9.8 | 4.3 | 6.3 | 100.0 |
| North America | 0.4 | 10.2 | 0.4 | 10.9 | 2.7 | 3.4 | 11.5 | 20.7 | 5.2 | 14.5 | 11.4 | 8.7 | 100.0 |
| Latin America | 0.8 | 12.8 | 1.5 | 11.2 | 7.5 | 5.0 | 7.1 | 14.5 | 7.2 | 9.0 | 14.7 | 8.9 | 100.0 |
| <i>Colombia</i> | 0.6 | 14.5 | 0.9 | 10.4 | 5.4 | 4.1 | 6.6 | 16.1 | 7.9 | 12.0 | 13.6 | 7.9 | 100.0 |
| Asia | 0.7 | 12.3 | 0.6 | 11.8 | 11.0 | 5.6 | 9.5 | 13.0 | 6.2 | 6.2 | 17.8 | 5.2 | 100.0 |
| <i>China</i> | 0.0 | 14.3 | 0.3 | 8.7 | 13.2 | 3.9 | 11.2 | 12.2 | 8.7 | 10.4 | 12.6 | 4.7 | 100.0 |
| <i>India</i> | 0.7 | 11.0 | 0.2 | 7.1 | 4.6 | 5.5 | 12.8 | 17.1 | 5.7 | 4.0 | 27.6 | 3.6 | 100.0 |
| Oceania/Other Countries | 0.5 | 12.3 | 0.5 | 9.5 | 3.9 | 9.3 | 13.3 | 20.2 | 5.6 | 12.3 | 4.8 | 8.0 | 100.0 |
| Total | 0.7 | 17.1 | 2.7 | 13.0 | 6.3 | 4.0 | 8.2 | 15.4 | 3.0 | 7.8 | 16.1 | 5.5 | 100.0 |

Source: Swiss population census data 2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manual (1995). The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland. * This heading corresponds to the primary sector. ** This heading includes the extra-territorial organizations and bodies. *** This heading includes the domestic services (i.e. private households).

III Bibliography

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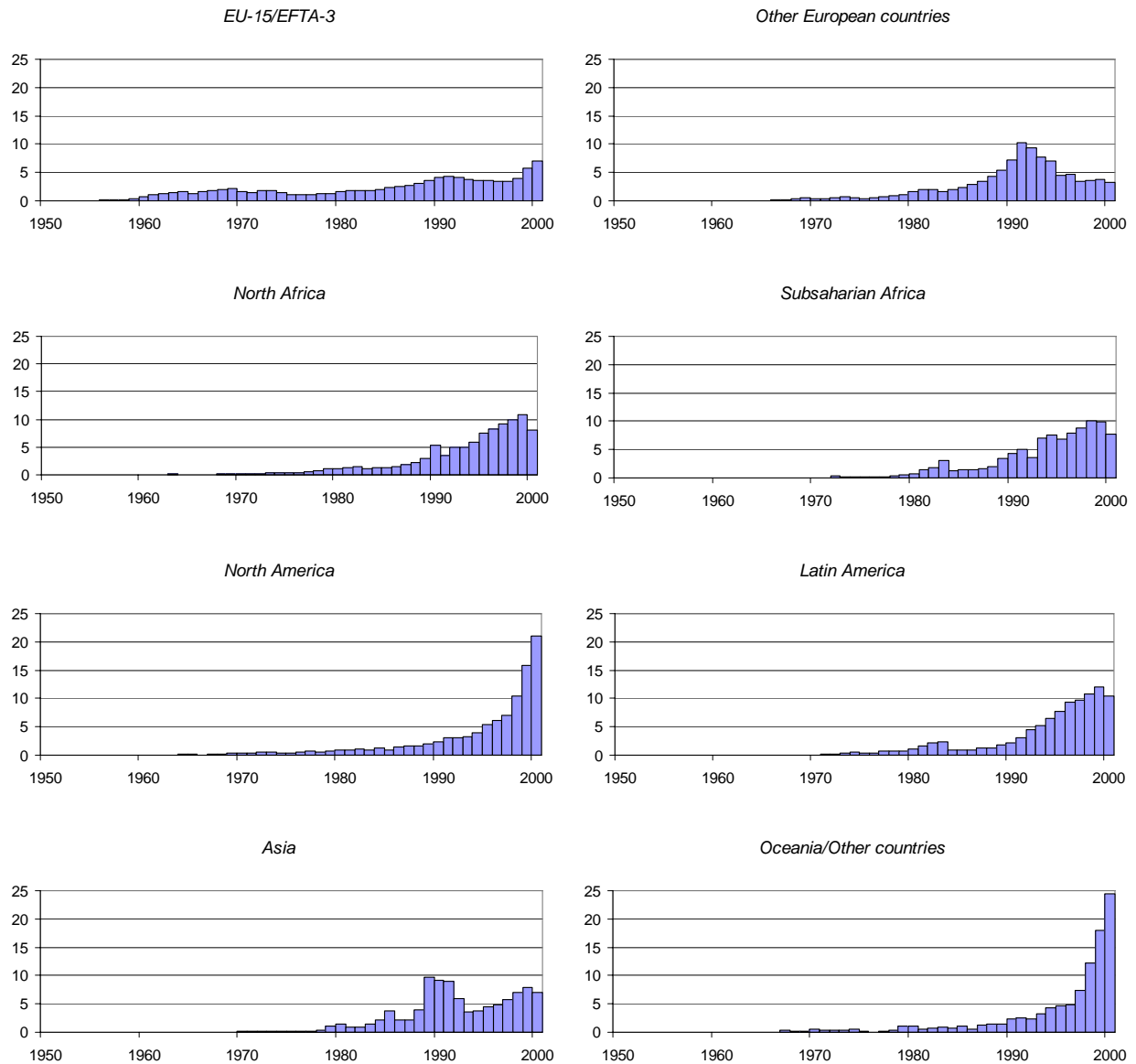
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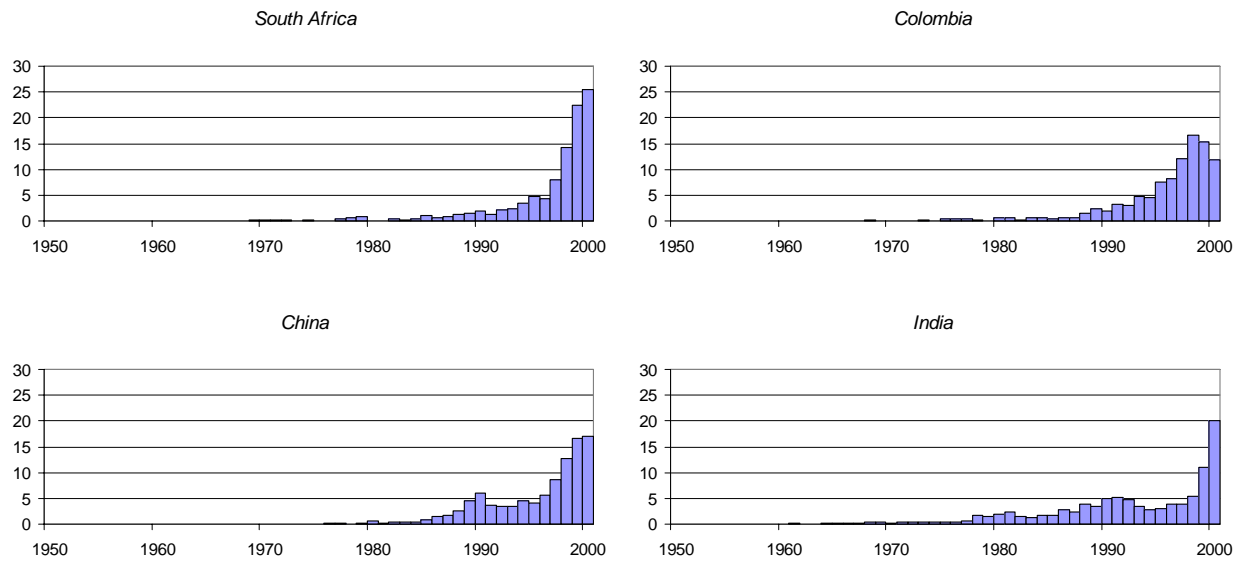
IV Appendix

Figure A.1: Distribution of primary migrants living in Switzerland in 2000 by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
 Note: Men aged 15-64; women aged 15-61.

Figure A.2: Distribution of primary migrants living in Switzerland in 2000 by year of entry



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
 Note: Men aged 15-64; women aged 15-61.

Table A.1: Distribution of migrant labour force with a tertiary-level education by gender

| Geographical origin | 1990 | | | 2000 | | |
|---------------------------------|--------|------|-------|--------|------|-------|
| | Gender | | Total | Gender | | Total |
| | M | F | | M | F | |
| Europe | 76.4 | 23.6 | 100.0 | 65.0 | 35.0 | 100.0 |
| <i>EU-15/EFTA-3</i> | | | | 66.4 | 33.6 | 100.0 |
| <i>Other European Countries</i> | | | | 58.6 | 41.4 | 100.0 |
| Africa | 86.9 | 13.1 | 100.0 | 74.3 | 25.7 | 100.0 |
| <i>North Africa</i> | | | | 74.9 | 25.1 | 100.0 |
| <i>Sub-Saharan Africa</i> | | | | 73.8 | 26.2 | 100.0 |
| <i>South Africa</i> | | | | 63.8 | 36.2 | 100.0 |
| North America | 69.7 | 30.3 | 100.0 | 58.6 | 41.4 | 100.0 |
| Latin America | 71.3 | 28.7 | 100.0 | 45.2 | 54.8 | 100.0 |
| <i>Colombia</i> | | | | 42.9 | 57.1 | 100.0 |
| Asia | 79.2 | 20.8 | 100.0 | 59.5 | 40.5 | 100.0 |
| <i>China</i> | 73.1 | 26.9 | 100.0 | 49.6 | 50.4 | 100.0 |
| <i>India</i> | 82.1 | 17.9 | 100.0 | 70.6 | 29.4 | 100.0 |
| Oceania/Other Countries | 75.0 | 25.0 | 100.0 | 64.8 | 35.2 | 100.0 |
| Total | 76.5 | 23.5 | 100.0 | 64.1 | 35.9 | 100.0 |

Source: Swiss population censuses data 1990-2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. The migrant population represents all foreign-born persons irrespective the date of their entry into Switzerland.

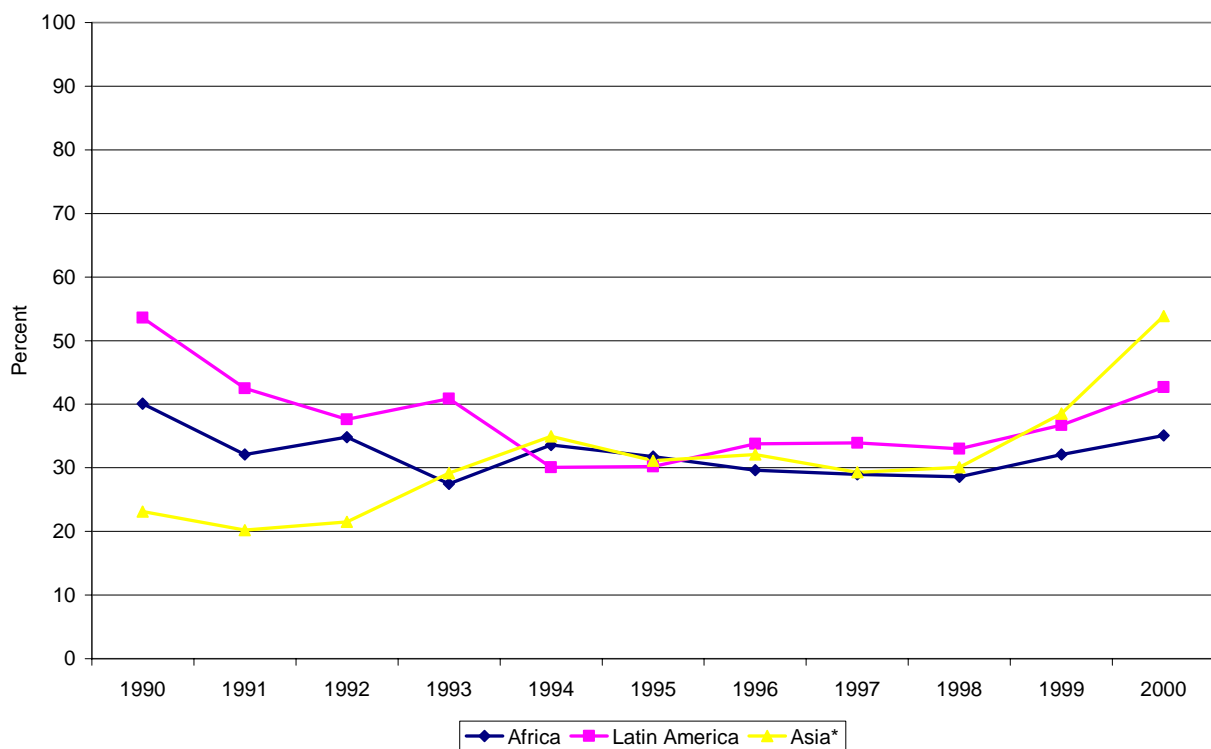
Table A.2: Distribution of high-skilled migrants by gender

| Geographical origin | 1990 | | | 2000 | | |
|---------------------------------|--------|------|-------|--------|------|-------|
| | Gender | | Total | Gender | | Total |
| | M | F | | M | F | |
| Europe | 69.4 | 30.6 | 100.0 | 62.6 | 37.4 | 100.0 |
| <i>EU-15/EFTA-3</i> | | | | 64.4 | 35.6 | 100.0 |
| <i>Other European Countries</i> | | | | 53.8 | 46.2 | 100.0 |
| Africa | 83.9 | 16.1 | 100.0 | 71.3 | 28.7 | 100.0 |
| <i>North Africa</i> | | | | 73.7 | 26.3 | 100.0 |
| <i>Sub-Saharan Africa</i> | | | | 69.0 | 31.0 | 100.0 |
| <i>South Africa</i> | | | | 59.2 | 40.8 | 100.0 |
| North America | 67.0 | 33.0 | 100.0 | 57.6 | 42.4 | 100.0 |
| Latin America | 62.2 | 37.8 | 100.0 | 45.3 | 54.7 | 100.0 |
| <i>Colombia</i> | | | | 43.5 | 56.5 | 100.0 |
| Asia | 69.8 | 30.2 | 100.0 | 57.4 | 42.6 | 100.0 |
| <i>China</i> | 69.8 | 30.2 | 100.0 | 47.1 | 52.9 | 100.0 |
| <i>India</i> | 59.1 | 40.9 | 100.0 | 62.0 | 38.0 | 100.0 |
| Oceania/Other Countries | 72.7 | 27.3 | 100.0 | 65.2 | 34.8 | 100.0 |
| Total | 69.6 | 30.4 | 100.0 | 61.9 | 38.1 | 100.0 |

Source: Swiss population censuses data 1990-2000 (SFSO).

Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manuel (1995). The migrant population represents all foreign-born persons irrespective the date of their entry into Switzerland.

Figure A.3: Share of high-skilled primary migrants from non-European developing countries and living in Switzerland in 2000, according to region of origin (three groups) and cohort of entry (since 1990)



Source: Swiss population census data 2000 (SFSO), Central register of foreigners (ZAR) and Automated Personal Registration System (AUPER).
 Note: Men aged 15-64; women aged 15-61. Human resources defined according to the Canberra Manuel (1995). * Excluding Japan, Taiwan, South Korea, Singapore and Israel.

Table B.1: Distribution of tertiary-level students in 2000 by high level academic institution

| | Tertiary-level education | | | Total |
|---------------------------------|--------------------------|------|------------|-------|
| | Other tertiary level** | HES* | University | |
| Geographical origin | | | | |
| EU-15/EFTA-3 | 18.8 | 14.6 | 66.7 | 15053 |
| Other European Countries | 25.5 | 11.1 | 63.5 | 4297 |
| North Africa | 12.3 | 18.4 | 69.3 | 903 |
| Sub-Saharan Africa | 17.8 | 14.8 | 67.4 | 1099 |
| <i>South Africa</i> | 35.7 | 16.7 | 47.6 | 47 |
| North America | 16.5 | 12.0 | 71.5 | 819 |
| Latin America | 20.0 | 14.7 | 65.3 | 1468 |
| <i>Colombia</i> | 15.1 | 15.7 | 69.2 | 209 |
| Asia | 26.8 | 29.4 | 43.8 | 3996 |
| <i>China</i> | 30.3 | 34.8 | 35.0 | 1674 |
| <i>India</i> | 22.7 | 32.3 | 45.0 | 325 |
| Oceania/Other Countries | 10.1 | 16.0 | 74.0 | 134 |
| Total | 20.7 | 16.2 | 63.1 | 27154 |

Source: Swiss population census data 2000 (SFSO).

Note: The number of persons is obtained by extrapolation. The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland.* HES = Universities of Applied Sciences. ** Higher Vocational Education and Training (including Higher Technical Schools).

Table B.2: Distribution of tertiary-level students by gender, according to high level academic institution

| | Tertiary-level education | | | | | | | | | | | |
|---------------------------------|--------------------------|------|-------|--------|------|-------|------------|------|-------|--------|------|-------|
| | Other tertiary level** | | | HES* | | | University | | | Total | | |
| | Gender | | Total | Gender | | Total | Gender | | Total | Gender | | Total |
| | M | F | | M | F | | M | F | | M | F | |
| Geographical origin | | | | | | | | | | | | |
| EU-15/EFTA-3 | 54.7 | 45.3 | 100.0 | 58.5 | 41.5 | 100.0 | 51.9 | 48.1 | 100.0 | 53.4 | 46.6 | 100.0 |
| Other European Countries | 59.2 | 40.8 | 100.0 | 51.9 | 48.1 | 100.0 | 42.9 | 57.1 | 100.0 | 48.0 | 52.0 | 100.0 |
| North Africa | 85.4 | 14.6 | 100.0 | 79.0 | 21.0 | 100.0 | 68.1 | 31.9 | 100.0 | 72.2 | 27.8 | 100.0 |
| Sub-Saharan Africa | 52.8 | 47.2 | 100.0 | 68.7 | 31.3 | 100.0 | 69.8 | 30.2 | 100.0 | 66.6 | 33.4 | 100.0 |
| <i>South Africa</i> | 46.7 | 53.3 | 100.0 | 42.9 | 57.1 | 100.0 | 50.0 | 50.0 | 100.0 | 47.6 | 52.4 | 100.0 |
| North America | 46.0 | 54.0 | 100.0 | 46.7 | 53.3 | 100.0 | 41.7 | 58.3 | 100.0 | 43.0 | 57.0 | 100.0 |
| Latin America | 42.9 | 57.1 | 100.0 | 45.0 | 55.0 | 100.0 | 44.1 | 55.9 | 100.0 | 44.0 | 56.0 | 100.0 |
| <i>Colombia</i> | 50.0 | 50.0 | 100.0 | 37.0 | 63.0 | 100.0 | 44.5 | 55.5 | 100.0 | 44.2 | 55.8 | 100.0 |
| Asia | 49.8 | 50.2 | 100.0 | 51.4 | 48.6 | 100.0 | 49.4 | 50.6 | 100.0 | 50.1 | 49.9 | 100.0 |
| <i>China</i> | 40.4 | 59.6 | 100.0 | 45.5 | 54.5 | 100.0 | 45.6 | 54.4 | 100.0 | 44.0 | 56.0 | 100.0 |
| <i>India</i> | 79.7 | 20.3 | 100.0 | 80.2 | 19.8 | 100.0 | 77.2 | 22.8 | 100.0 | 78.7 | 21.3 | 100.0 |
| Oceania/Other Countries | 66.7 | 33.3 | 100.0 | 42.1 | 57.9 | 100.0 | 48.9 | 51.1 | 100.0 | 49.6 | 50.4 | 100.0 |
| Total | 54.4 | 45.6 | 100.0 | 56.1 | 43.9 | 100.0 | 50.7 | 49.3 | 100.0 | 52.4 | 47.6 | 100.0 |

Source: Swiss population census data 2000 (SFSO).

Note: The migrant population represents all foreign-born persons irrespective of the date of their entry into Switzerland. * HES = Universities of Applied Sciences. ** Higher Vocational Education and Training (including Higher Technical Schools).