

Impact of immigration on public finances in Switzerland

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Summary

The "Economic Analysis and Policy Advice" division of the Federal Finance Administration carries out studies on the long-term challenges of fiscal policy. A long-term outlook for public finances in Switzerland is drawn up every four years.¹ It takes into account demographic scenarios, as well as more detailed studies carried out in the area of health.² Immigration is an important topic that has not been analysed much up to now in this framework. After addressing the demographic impact of immigration, we will look at its economic impact and then focus on the core of this paper: its budgetary impact, be it direct or indirect.

Demographic impact in Switzerland

Since the 1980s, population growth has been due more to net migration than to an excess of births over deaths. The share of the permanent resident population of foreign nationality reached 25% in 2016. Almost 30% of the Swiss population was born abroad and the trend is increasing. Wanner (2013) found that, between 1980 and 2010, the population would have increased by only 180,000 people in the absence of migratory flows, instead of the 1.5 million observed. According to the UN, the Swiss population would remain approximately stable in the absence of migration, at least for the studied time horizon of 2045. According to Wanner, the number of elderly people per worker would have been about 40% higher in 2010 without immigration. However, immigration was not sufficient to maintain this ratio at its 1980 level. Typically, immigration initially makes the population younger, but it eventually reinforces its ageing (see box S.1). It nevertheless seems that immigration improves dependency ratios (number of elderly people per worker, non-workers per worker) even in the long term.

Gainful activity not subject to quotas is the main reason for immigration, followed by family reunification. It is difficult to quantify the migratory impact of the agreement on the free movement of persons between Switzerland and the European Union. Eritrea has long been the most common country of origin for asylum seekers. For third countries excluding the asylum procedure, family reunification prevails over arrivals within the framework of quotas. By international standards, Switzerland is among the countries which have experienced considerable immigration for a long time, and it thus has a large proportion of residents born abroad and foreign nationals. Consequently, migratory phenomena are particularly significant in Switzerland.

General principles concerning the economic impact

Immigration undoubtedly increases GDP. However, it is GDP per capita that reflects a country's prosperity. This depends on the proportion of workers in the population and the productivity of those workers. If the impact on unemployment is not negative (or is sufficiently small), immigration can increase the proportion of workers by raising the population's proportion of working-age people. Moreover, immigration has an

¹ See FDF (2016) for the last edition.

² For a recent projection concerning healthcare expenditure, see Brändle and Colombier (2017). Other studies are available at the following link:

https://www.efv.admin.ch/efv/de/home/themen/publikationen/oeko_grundlagenarb.html

impact on workers' productivity by modifying (at least in the short term) the relative proportions of the various production factors and by modifying the factors' total productivity (innovation).

There is a vast amount of international literature on the economic impact of immigration. The results differ from one study to the next. The impact of immigration on GDP per capita in the host country is generally considered to be low. Nevertheless, there may be redistributive effects between labour and capital, or between different types of workers.

Budgetary impact in Switzerland: direct effects

The direct budgetary impact is the difference between what immigrants pay in taxes and social contributions on the one hand and what they benefit from in terms of public expenditure and social benefits on the other. For Switzerland, the most recent and in-depth study on this topic is Ramel and Sheldon (2012). Specifically, this study has the merit of examining not only the present (2003-2009), but also the long term (see box S.1). It thus differs from short-term studies which take into account the old-age and survivors' insurance contributions paid by immigrants, for example, without considering the old-age and survivors' insurance pensions to which these contributions will entitle them. Ramel and Sheldon (2012) found that the budgetary balance is highly dependent on the origin of immigrants. For immigrants as a whole, the average budgetary balance is initially significantly positive (i.e. immigrants pay more than they receive), while the equilibrium population resulting from this immigration in the long term shows a significantly negative average budgetary balance.

The fact that immigration has a positive budgetary impact initially but a permanent negative impact in the long term raises the following question: Should the initial surpluses be saved to at least partially offset future negative balances? The old-age and survivors' insurance fund could thus be increased during the transitional period when the balance is positive in anticipation of the negative impact to which these contributions will give a right (it is not a question of transforming a pay as you go system into a funded system, but rather of smoothing out fluctuations). That said, consideration must also be given to the fact that, with constant policies, the budgetary balance of natives will evolve negatively too. A change of fiscal policy will thus be necessary in any case (while Ramel and Sheldon's calculations are with constant policies).

Box S.1: Equilibrium population

A simple example makes it possible to understand the concept of "equilibrium population". Suppose a migration policy reform leads to an additional 10,000 immigrants per year. To simplify matters, let us assume that these immigrants all arrive in Switzerland at the age of 25 and remain there until they die at 85. In the first year after the reform, there will be 10,000 more 25-year-olds in Switzerland (relative to the scenario without the migration policy reform). In the second year, there will be 10,000 25-year-olds who have just arrived, as well as the 10,000 immigrants from the preceding year who are now 26 years old. The following year, there will be 10,000 immigrants aged 25, 10,000 aged 26 and 10,000 aged 27. And so on. 60 years later, there will be 10,000 immigrants in each age group (in addition to what there would have been without the reform). This is the equilibrium population, as within the framework of our assumptions, the last age group (85 years) dies and the group aged 25 is constantly renewed with new immigrants. The average age of this population is 55. If the host country has an average age lower than that, this permanent flow of young adults will eventually increase the average age of the population. It should be noted, however, that this average age is higher only because these immigrants were not in Switzerland during their childhood. Consequently, it does not necessarily have a negative impact on Swiss public finances, as children cost money in terms of public funds. In the equilibrium population in our example, there are two people of working age for every person over the age of 65. If this ratio is more favourable than that of the host country (which is typically the case if the host country's population is declining), the reform will improve this ratio.

This highly simplified example illustrates the concept of equilibrium population and provides an intuitive understanding of why immigration can eventually accentuate the ageing of the population while improving the old-age dependency ratio. A more realistic calculation should take account of the fact that immigrants do not necessarily arrive in Switzerland at the age of 25 and do not necessarily die at 85. They can also leave Switzerland. The age of arrival in Switzerland, as well as the mortality rate or the probability of leaving Switzerland can depend in particular on the country of origin. Moreover, it is not age per se that matters for public finances, but rather the budgetary balance. Budgetary balances by age group (and other immigrant characteristics) must therefore be taken into consideration. Ramel and Sheldon (2012) calculated the equilibrium population as well as the budgetary balances by age group to find the average budgetary balance of the equilibrium population.

Ramel and Sheldon (2012) and subsequent calculations by Sheldon yield the following results.

Table S.1 Budgetary balance for an average immigrant household by origin

Origin	Monthly budgetary balance [CHF]		Sum of discounted budgetary balances [CHF]		
	Short term (immigrants 2003-2009)	Long term (equilibrium population)	0%	Discount rate 2%	3%
EU 17/North EFTA	1,754	544	108,850	117,532	118,562
EU 17 South	424	-515	-104,594	-11,538	7,101
Rest of Europe	-937	-1,448	-770,683	-414,807	-328,039
Rest of the world	611	398	76,683	69,854	66,200
Total	729	-405	-106,050	-18,536	1,091

Source: Monthly budgetary balances: Ramel and Sheldon (2012)³

Sum of discounted budgetary balances: Sheldon communication

On arrival, the overall budgetary balance of immigrants is definitely positive (CHF 729 per month), but clearly becomes negative in the long term (minus CHF 405 per month), as this continuous immigration leads to an equilibrium population of older and less qualified immigrants (skilled immigrants tend to stay in Switzerland for shorter periods). Since budgetary balances are initially more favourable than in the long run, it is interesting to know the present value of budgetary balances. This value depends on the discount rate. If the sign is positive, investing the surplus at a return equal to the discount rate would more than compensate for the negative balances of the equilibrium population. However, surpluses do not make it possible to fully offset negative balances if the discounted sum is negative.

These calculations are of course subject to uncertainties. Our analysis of Ramel and Sheldon's (2012) hypotheses suggests that treating immigrants' children born in Switzerland as immigrants tends to result in overly negative budgetary balances. The fact that the reference period (2000-2005) for calibrating budgetary balances by foreigner category currently appears rather negative for public finances (whereas it had been considered rather balanced) also tends to lead to budgetary balances that are overly negative. Conversely, various public expenditure amounts have been assumed to be independent of immigration, whereas they probably increase at least proportionally with the population. This tends to result in budgetary balances that are too favourable. Moreover, the authors indicated that they were unable to factor in old-age and survivors' insurance/disability pensions paid abroad, which also tends to result in overly favourable budgetary balances. Furthermore, we would have thought it preferable not to take account of the 2nd pillar (neither contributions nor pensions). Ramel (2013) calculated the budgetary balance of Swiss households during the period 2003-2009, but not their long-term balance. With constant policies, the budgetary balance of natives will evolve negatively too. Consequently, the study

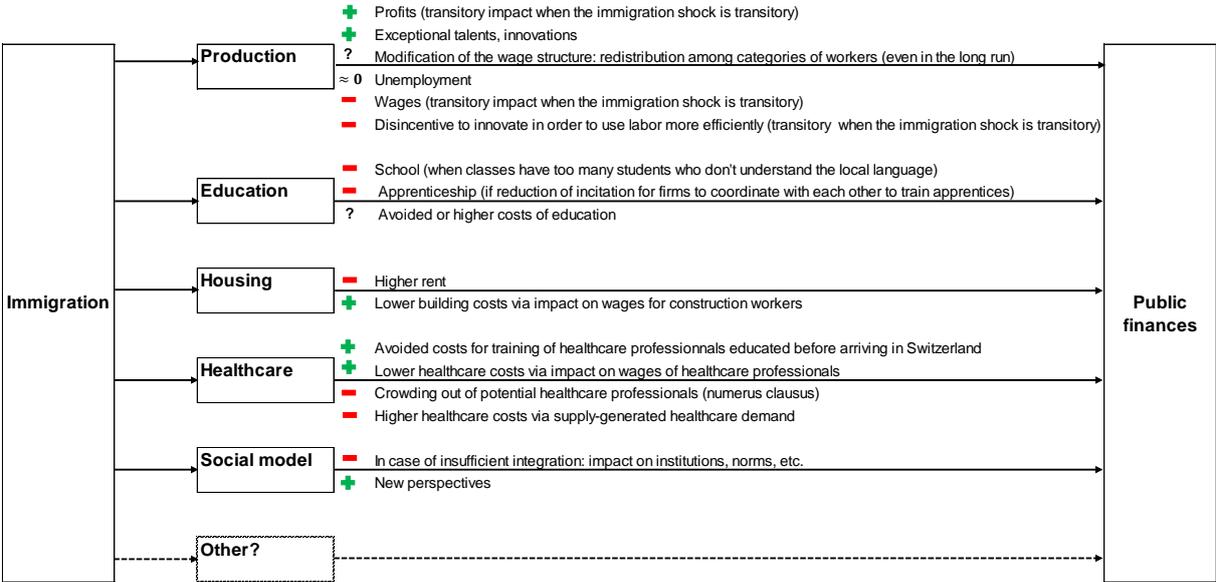
³ Since it is a question of studying the impact of immigration, all immigrants are taken into account, irrespective of whether they acquired Swiss citizenship.

does not make it possible to know whether the budgetary balance of immigrants will be more favourable or more unfavourable than that of the Swiss in the long term.

Budgetary impact in Switzerland: indirect effects

An indirect impact through the effect of immigration on the budgetary balances of other residents has to be added to this direct impact. Ramel and Sheldon (2012) do not calculate this indirect effect, which is very difficult to quantify. We will just give some qualitative indications here. The indirect budgetary impact can pass through various channels.

Figure S.1: Channels for indirect budgetary impact



Production

Let us consider a transitory migration shock. It is generally accepted that immigration does not have a long-term impact on the general level of salaries in that case, but it penalises workers competing with immigrants in favour of workers who are complementary to them. Even if it is only a transfer from one category to another, it can have a budgetary impact. Consequently, if the winning group does not have the same average income as the losing group initially, this transfer may alter tax receipts (because of progressive taxation) and social expenditure. A difference in the propensity to save can also modify indirect tax receipts.

In the short term, i.e. before the stock of capital has adjusted, the impact on the general level of salaries is negative: a fall relative to a scenario with less immigration (not necessarily relative to the past). This decline in salaries is offset by an increase in profits of about the same magnitude. This transfer can have a budgetary impact for different reasons: i) the proportion of capital holders living abroad is not necessarily equal to the proportion of workers living abroad (cross-border commuters); ii) the tax rate on capital income is not necessarily the same as that on labour income (capital gains are not taxed in Switzerland, for example); iii) the holders of capital are typically better off than workers and have a higher income tax rate (progressive taxation); iv) a difference in the propensity to save changes VAT receipts; v) the fall in salaries

implies an increase in social expenditure which is not likely to be offset by a corresponding fall in social expenditure for the holders of capital.

We discussed the impact of a transitory migration shock above. A permanent increase in immigration as a result of higher (still binding) quotas corresponds to an accumulation of transitory shocks: the impact of each shock on the general level of salaries and profits always disappears in the end, but it is continually replaced by the impact of new shocks. The free movement of persons implies a total opening up of the labour market towards the European Union: wages converge towards a balance where they are permanently lower than they would have been with less immigration, but they remain higher than salaries in the European Union. The balance depends on the relative mobility of labour and capital.

Whatever the nature of the migration shock, there can be an impact on the productivity of other workers that is difficult to evaluate. An effect on productivity also has an indirect budgetary impact insofar as this effect is not already included in the remuneration of immigrants (e.g. transfer of knowledge from immigrants to indigenous workers).

The impact of immigration on unemployment is generally low in Switzerland, although there may be exceptions in specific cases.

Education

The education of indigenous students may be adversely affected in classes where the proportion of students who do not understand the local language exceeds a certain threshold. Young people may also have difficulty finding apprenticeships if the possibility of hiring immigrants ultimately reduces the incentive for businesses to coordinate themselves to train apprentices. If immigrants are better trained than natives, this implies that more natives would have had to be trained to replace them in the absence of these immigrants. In that case, immigration enables the state to avoid training costs. The effect is reversed if immigrants are less well trained than natives. It must be taken into account in both cases that a change in the level of education of natives also has an impact on their income and the taxes they pay.

Housing

Immigration increases the demand for housing and therefore prices. Without immigrants, construction salaries would be higher, which would increase costs. Rising housing prices increase capital gains tax receipts in the property sector. If the rental value is adjusted, it also increases the imputed rental value tax paid by those who live in their own home. However, the money spent on the increase in rent would have been saved or spent on the consumption of goods and services subject to VAT (as opposed to rent). The taxes that would have been paid by these producers of goods and services depend on whether they are produced in Switzerland or abroad. In terms of public expenditure, higher rents tend to increase social expenditure.

Healthcare

The number of foreigners in the healthcare workforce is disproportionately high. Without them, the salaries of medical workers would have to be increased in order to

attract natives to these professions, which would lead to higher healthcare costs for the state and households. The shortage of Swiss doctors is partly due to the *numerus clausus*. This can have an indirect budgetary impact via natives who could have become doctors and have been replaced by immigrants (crowding out), but account must also be taken of the significant training costs thereby avoided. As the medical services on offer create their own demand to some extent, the influx of foreign specialists tends to increase healthcare costs.

Social model

Economic prosperity, and thus the health of public finances, is largely due to what Collier (2013) calls the "social model": a combination of institutions, rules, standards and organisations. Acemoglu and Robinson (2012) demonstrate the central role of institutions. The long-term impact of immigration on our social model should be studied more carefully. It will depend on the gap between our social model and that of the countries from which immigrants come, on the integration policy pursued and, probably non-linearly, on the scale of immigration.

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