CAN IMMIGRATION SAVE OUR SOCIAL PROTECTION SYSTEM?

In the early 2000s[1] , replacement immigration was advocated as an answer to the forecast population decline (in particular that of the working population). On top of this quantitative objective came, at the same time, the further ambition of qualitative control of inflows: selective immigration. One of the arguments put forward to support this change of direction in the migration policy was a bigger net contribution to public finance by skilled immigrants compared with that of unskilled immigrants[2]. Thus, by limiting the population ageing process, immigration could help reduce the associated tax burden, particularly if migration policy is selective.

Using a computable general equilibrium model, this letter assesses the contribution of migration policy to the reduction in social protection financing needs, in the context of the population ageing process. Stopping immigration from 2010 would lead to an increase in these financing needs of 1.3% by 2050. A more proactive migration policy (a doubling of the average net annual flow) would reduce the tax burden of ageing but at the expense of considerable demographic changes. The relative gain achieved by a selective migration policy is temporary and disappears over the long term.

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■ The social cost of population ageing

The new demographic pattern which is progressively taking shape in France displays an ageing process by the top (lengthening of life expectancy while the working-age population is maintained with a relatively high birth rate and large-scale net migration flows) and is temporarily amplified by the counter shock of the baby-boom generations. After causing transitory rejuvenation of the population, these generations are now accentuating ageing as they reach retirement age in large numbers. The old age dependency ratio (measured here as the population of 65 year olds and over compared with the population of 16-64 year olds) should increase from just over 25% in 2000 to nearly 45% in 2050.

Retirement pensions and health, which currently represent nearly 80% of social spending in France, will be the main branches affected by these demographic changes. Most reports and studies[3] agree on the extent of the financial burden that ageing will place on the pay-as-you-go retirement scheme. The percentage of GDP necessary to finance retirement pensions should rise from 11.6% in 2000 to over 14.6% in 2050, leading to a financing need of nearly 1.7 percentage points of GDP by 2050, if no further reform is undertaken. Health expenditure should also increase considerably over the same period, from 9.4% in 2000 to 13.7% in 2050[4]. Overall, the cumulative financing needs of these two branches could reach nearly 5%

1. United Nations Population Division (2000), "Replacement migration, Is it A Solution to Declining and Ageing Populations?", New York, (ESA/P/WP.160).
2. X. Chojnicki (2006), "Vieillissement démographique et immigration internationale : un modèle de comptabilité générationnelle appliquée à la France", Économie et Prévision, no. 174.
3. See, for example, COR (2010), "Retraites : Perspectives actualisées à moyen et long terme en vue du rendez-vous de 2010", Eighth report of the Conseil d'Orientation des Retraites, La documentation française.
4. The rise in health expenditure can also be explained, to a large extent, by changes in morbidity and practices (B. Dormont, M. Grignon & H. Huber (2006), "Health expenditure growth: reassessing the threat of ageing", Health Economics, 15: 947–963).

of GDP in 2050, whereas their accounts were balanced overall in the early 2000s. Forecasts for the other branches of social expenditure, over the same time period, are more optimistic and even expect surpluses, but these surpluses are manifestly insufficient to offset the deficits of the two biggest branches. The financing needs of social protection as a whole are thus evaluated at 3% in 2050 (see table 2, reference scenario).

◼ The weight of immigration in public finance

Before considering the contribution of the different conceivable migration policies to reducing the tax burden of ageing, some factual elements on the average net contribution of migrants to social accounts should be pointed out. Several recent[5] studies show that, on average, migrants contribute less to social protection revenues than the native population and receive more benefits. This difference in net contributions can be seen essentially during the period of working life (graph 1). It can be explained mainly by differences in contributions: the mandatory contributions paid by a 40 year old immigrant are, for example nearly 20% less than those paid by a native of the same age. The main explanation relates to the lower level of qualification of immigrant populations (for example, nearly 50% of immigrants aged 30 in 2006 had a diploma below the baccalaureate, against 34% of natives) and the insertion difficulties they may encounter on the labour market (their rate of unemployment is around twice as high as the rest of the population). At the same time, immigrants are over-represented in certain social risks such as unemployment and social security or family support, where social benefits concern essentially individuals of working age. However, after 60, the average transfers received by immigrants are lower than those of natives, because immigrants use the health service less (due to cultural and informational barriers, a less privileged economic and social position and less cover by supplementary health insurance[6]) and receive smaller retirement pensions (since their working life will have been shorter and more erratic).

Finally, even if, for a given age, the net contribution by migrants is always less than that of natives (except after 60), the fact that they are on average younger (70% of immigrants are between 20 and 60, against 53% for natives), and therefore fall into the categories of net contributors to the public budget, will fully counterbalance any "excessive expenditure" for certain branches of social protection. Thus, the net overall contribution of immigration to public administrations will be positive and of the order of 3.9 thousand million euros for 2005[7]. Is this potential gain resulting from

Graph 1 – Structure by age of mandatory contributions and transfers (*in euros*)
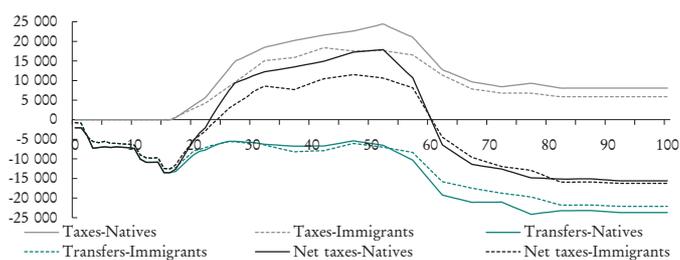
Source: X. Chojnicki (2011).

immigration reason enough to drive migration policy in response to the challenge of population ageing? To answer this question, we use the results of a computable general equilibrium model applied to the case of France. The economic impact of immigration does not consist merely of the effects on public finance but also affects the economy as a whole (see Box 1). In addition, a simple static approach does not give an accurate picture of the extent of the net contribution of migrants to the system of social transfers. We know, for example, that the income of a family of immigrants grows over time while the services they receive decrease; that a certain percentage of immigrants will later claim their retirement pensions like the native population, that another significant percentage will return to their countries of origin when they give up work. Thus, the proper level of analysis can only be inter-generational so as to incorporate life-cycle effects.

◼ A France without immigration

In order to quantify the potential contribution of immigration to reducing the burden of population ageing, we will begin by assessing the impact of migration flows as they are anticipated and projected in the official INSEE demographic projections (net flows of 100,000 people). For this, the simplest method is to compare the results of a computable general equilibrium model simulated using these official flows (reference scenario) with the results obtained by a counterfactual simulation in which all the flows are nil as from 2010 (non-immigration scenario). Stopping immigration would have considerable effects on French demography (table 1). The total population would be reduced by around 10% in 2050 compared with the reference scenario. The effect is even more marked for the working age population with a drop of around 11.5%. The percentage of immigrants in the French population aged 15 and over would decrease continuously, not very surprisingly. They would only represent 3.8% of this population in 2050, against 10.7% in the reference scenario. The

5. See O. Monso (2008), "L'immigration : quels effets sur les finances publiques ?", Revue Française d'Économie, 23(2) or X. Chojnicki, C. Defoort, C. Drapier, L. Ragot & H. Rapoport (2010), "Migrations et protection sociale : étude sur les liens et les impacts de court et long terme", Report for Drees-MiRe.
6. See, for example Dourgnon *et al.* (2009), "Le recours aux soins de ville des immigrés en France", Questions d'économie de la santé, IRDES.
7. See Chojnicki *et al.* (2010), *op. cit.*, or Chojnicki (2011), "Impact budgétaire de l'immigration en France", Revue Économique, 62 (3).

age structure of inflows being relatively young (70% of new immigrants in 2005 were under 30), the dependency ratio would deteriorate noticeably in the non-immigration scenario (46.9% in 2050 against 43.4 in the reference scenario). In macroeconomic terms, the most noteworthy effect resides in the reduction of GDP: stopping immigration boils down to applying a negative demographic shock, which noticeably affects the working age population and therefore the labor factor. This reduction in GDP, combined with the increase in the dependency ratio, would result in a rise in social protection expenditure as a percentage of GDP. Compared to the reference scenario, the non-immigration option would lead to an increase of 1.3 per centage points of GDP in this expenditure in 2050 and would result in a mechanical increase, of practically the same amount, in financing needs (table 2).

The beneficial effects of immigration on social protection accounts are thus essentially due to the age structure of net flows, generally younger than the French population as a whole and, not surprisingly, mainly affect the two branches of social protection the most sensitive to population changes (retirement pensions and health).

Table 1 – Structure of the French population for the different scenarios

		2000	2010	2030	2050	2100
Working age population	Reference scenario	38 318	40 530	40 353	40 351	43 052
(in thousands)	No immigration [b]	0.0	-1.0	-6.0	-11.5	-24.1
	Non-selective Immigration [i]	0.0	0.6	6.4	11.5	19.0
	Neutral immigration [b]	0.0	0.5	6.3	11.2	17.3
	Selective immigration [b]	0.0	0.5	6.2	10.9	16.1
Percentage of immigrants	Scénario de référence	8.6	9.7	10.5	10.7	9.8
(as % of the population	No immigration [a]	0.0	-0.7	-3.9	-6.9	-9.8
15 years old and over)	Non-selective Immigration [i]	0.0	0.4	4.0	6.9	8.2
	Neutral immigration [a]	0.0	0.4	4.0	7.0	8.5
	Selective immigration [a]	0.0	0.4	4.1	7.1	8.7
Dependency ratio	Scénario de référence	25.2	25.3	38.1	44.2	42.8
(Pop 65+ / Pop 15-64 as %)	No immigration [a]	0.0	0.3	2.3	3.6	3.9
	Non-selective Immigration [e]	0.0	-0.1	-1.9	-1.9	-0.2
	Neutral immigration [a]	0.0	-0.1	-1.9	-1.7	0.6
	Selective immigration [a]	0.0	-0.1	-1.8	-1.6	0.9

[a] Deviation in percentage points from the reference scenario
[b] Deviation as percentage of the reference scenario
Source: X. Chojnicki & L. Ragot (2011).

■ Selected immigrants

This positive effect of migration flows as projected by INSEE leads us on quite naturally to consideration of the contribution of a more ambitious migration policy whose aim would be to reduce the financial expense of population ageing. The question is then immediately posed of defining the volumes of migration flows desired. A demographic target seeking to counteract the ageing process is unthinkable. Convincing proof is that the migration flows necessary to maintain a constant dependency ratio would result in doubling the French population approximately every forty years[8]. Conversely, a goal of replacement migration, consisting of using immigration for the purposes of stabilising the size of the working age population, no longer makes sense in France where this population is expected to remain stable overall according to the last two INSEE[9] population projection exercises. A simple way of defining a more ambitious migration policy is then to consider an increase in flows which can be deemed realistic. The simulated options are thus based on migration flows, as a percentage of the French population, identical to those observed during the last great wave of immigration in the late 50s (around 0.35% of the total population) which practically comes down to doubling net flows by 2050 (+200,000 instead of the +100,000 resulting from INSEE projections). On the basis of this quantitative impact, three options are simulated, which are only distinguished by how selective the migration policy is. We can thus measure the effects of a selective migration policy based on qualification level, given that the more highly working age immigrants are qualified, the bigger the immediate net contribution to social protection finance. In the non-selective immigration option, the characteristics of migration flows are identical to those of reference scenario migrants. In the neutral immigration option,

8. D. Blanchet (2002), "Immigration et avenir démographique", in Immigration, marché du travail, intégration, Commissariat Général du Plan report.
9. I. Robert-Bobée (2006), "Projections de population 2005-2050 pour la France métropolitaine : méthode et résultats", Insee Working Paper F0603 and N. Blanpain & O. Chardon (2010), "Projection de population 2007-2060 pour la France métropolitaine", INSEE Résultats - Société 117.

Table 2 – Social protection financing needs

As % of GDP	2000	2010	2020	2030	2050	2100
Retirement pensions						
Reference scenario	0.0	-0.5	-1.1	-1.7	-1.7	-1.7
No immigration[a]	*0.0*	*-0.2*	*-0.5*	*-0.7*	*-1.1*	*-1.8*
Non-selective immigration[a]	*0.0*	*0.1*	*0.4*	*0.8*	*0.7*	*0.5*
Neutral immigration[a]	*0.0*	*0.1*	*0.5*	*0.8*	*0.8*	*0.3*
Selective immigration[a]	*00*	*0.1*	*0.5*	*0.8*	*0.7*	*0.2*
Health						
Retirement pensions	0.0	0.0	-1.0	-2.0	-3.2	-3.1
No immigration[a]	*0.0*	*-0.1*	*-0.2*	*-0.1*	*-0.2*	*-0.7*
Non-selective immigration[a]	*0.0*	*0.0*	*-0.1*	*0.2*	*0.0*	*0.3*
INeutral immigration[a]	*0.0*	*-0.1*	*0.0*	*0.0*	*0.2*	*0.4*
Selective immigration[a]	*0.0*	*-0.1*	*0.0*	*0.0*	*0.3*	*0.3*
Total social protection						
Retirement pensions	0.0	-0.5	-0.8	-1.8	-3.0	-3.0
No immigration[a]	*0.0*	*-0.2*	*-0.6*	*-1.0*	*-1.3*	*-1.9*
Non-selective immigration[a]	*0.0*	*0.1*	*0.6*	*0.6*	*0.8*	*0.5*
Neutral immigration[a]	*0.0*	*0.2*	*0.7*	*1.1*	*1.1*	*0.1*
Selective immigration[a]	*0.0*	*0.3*	*0.8*	*1.2*	*1.1*	*0.0*

[a] Deviation in percentage points from the reference scenario
Source: X. Chojnicki & L. Ragot (2011).

the policy becomes selective and imposes a qualification structure of immigrants identical to that of the French population as a whole in the reference scenario. In the last scenario, selective immigration, the qualification structure of immigrants is similar to that of the generation of most highly qualified natives of each period (the 25-34 year old generation).

The noticeable increase in flows would lead to continuous growth in the percentage of immigrants in the population of 15 year olds and over, reaching nearly 18% in 2050, whatever the option simulated, against 10.7% in the reference scenario (table 1). Given the age structure of the incomers (ranging essentially from 25 to 64), these migration impacts would result in a noticeable increase in the working age population, between +10.9% and +11.5% in 2050 depending on the type of migration policy considered. Growth would also be higher, the less selective the migration policy, since the ferti

lity rate declines with the level of qualification. Overall, the population impact is symmetrical to that set out in the no-immigration option. However, the effects differ somewhat depending on the timescale used, due to the temporary nature of the positive impact on the dependency ratio, very sensitive to the qualification structure of incomers. In any case, the fall in the dependency ratio, compared with its value in the reference scenario, would be at its maximum in 2040, and then the difference would decrease and even become positive by the end of the century for more selective policies. The positive effect is therefore only temporary. Fairly logically, the reduction in retirement scheme financing needs reaches its peak in 2040. Additional immigrant flows, whatever the qualification structure, increase in the short-medium term the number of contributors and have little impact on the structure of the non-working population, and so, ultimately, on the total amount of pensions. In the longer term, these migrants age, causing an increase in the volume of pensions, which gets higher the more highly qualified these incomers are. With selective policies, contributors' incomes are higher, but in the medium term the combination of a lower birth rate and longer life expectancy wins out and reduces the financial gains offered by a more selective policy.

More generally, a more ambitious migration policy would reduce the tax burden of ageing in 2050 by a little over 20% without selection criteria and around 30% with a very selective policy. This is not negligible but is still relatively modest when these results are compared with the demographic changes implied by these migration flows. This is especially true as, in the very long term, (by 2100), these gains will virtually disappear for the very selective policy and remain slightly positive for the non-selective policy (a fall in financing requirements of 0.5 of a percentage point of GDP, according to our model).

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