人口問題研究（J. of Population Problems）70－2（2014. 6）pp. 147～164

研　究　論　文

Migration Scenarios and Future Population Composition of Japan in Comparison with Europe

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This study quantifies the consequences of various assumptions about immigration on the composition of the future population of Japan and compares those results with European prospects. It is shown that, within the range of the currently foreseeable assumptions, only a migration inflow comparable to that currently taking place towards Europe would avoid excessive population decline and ageing in Japan, but with a relevant diversification of its composition of the population. Within five decades, the population of foreign background would be particularly important in the younger age groups, where its share could reach from 10 % to 30 % of the population, depending on future inflows.

Introduction

According to the projections from the Statistical Office of the European Union (Lanzieri 2011a) and from the National Institute of Population and Social Security Research of Japan (IPSS 2012), the ageing of the population may speed up in the near future, driven by the ageing of the baby boomer generation. This ageing may be accompanied by a shrinking of the population size, with further repercussions on the potential labour force, which may no longer be sufficient to support economic growth. The demographic solutions envisaged by the countries affected may differ in this regard, but essentially they are aiming to increase fertility levels and/or increase the flow of immigration.

Both these approaches have supporters and detractors. Decisions relating to childbearing are often considered as belonging to the private sphere of the individual, and therefore out of the reach of policy actions. On the other hand, national policies could be addressed to ensure favourable conditions for fertility, helping those who aspire to larger family sizes to meet their wishes. However, any increase in fertility would need at least a couple of decades before becoming 'visible' to the labour market. Migration is therefore often proposed as a quick and readily available solution

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to shortages in the labour force. A famous study issued by the United Nations Population Division (UNPD 2001) has showed that to contrast the projected (by then) population decline and/or ageing in low-fertility countries would require important volumes of immigration. Migratory flows may actually take place without any specific action or will by the host country. Historical events or contingent economic situations, in both the country of origin and the destination country, as well as particular geographical location, have seen some European countries experience sudden rises in the flow of immigration in the recent past. In fact, European Union (EU) Member States and Japan have different migration histories: over recent decades, the former have gradually transformed themselves from sending to receiving countries, migration becoming an — if not the most — important component of population change; the latter has always recorded low levels of migration, its population growth being supported by the vital events so far.

However, the impact of migration on the composition of their populations has not yet been thoroughly analysed. In fact, in addition to the arithmetical increase of the population size due to the arrival of immigrants, their contribution to demographic changes via fertility and mortality also needs to be considered. As migrants are usually younger than natives, such a contribution becomes more and more visible with the ageing of the host population. Many commentators highlight the benefits of migration for the economy and for the demographic dynamic in general. However, besides the contribution to the labour market, the impact of migration on the future composition of the population may actually be central to discussions about concrete implementation of population policies, as well as ways of ensuring a smooth integration of migrants into the host society. In Europe, migration and integration of migrants are definitely important items in the current political agenda. As a rapidly ageing country, Japan may also want to consider these issues, benefitting from the experiences in other areas of the world, comparable as for economic and demographic dynamics.

In comparison to fertility and mortality, studies of the demographic consequences of migration for Japan are less abundant in the international literature — if they exist at all. However, the need in Japan for a foreign labour force in consideration of demographic and economic trends has already been presented for some time (e.g. Yamanaka 1993), with some studies focusing on ethnic groups specific to Japanese migration history (Tsuda 1999a, 1999b, Takenaka 2014). At subnational level, the internal migration process can be very different between foreign residents and native Japanese (Ishikawa and Liaw 2009), which may lead to a concentration of ethnic groups in specific areas. As for Europe, the implications of significant immigration flows in low-fertility populations have been stressed since the 1980s (e.g. Espenshade 1986), when the effects of the decline in fertility after the post-World War II baby boom were becoming clearer, and it has been increasingly present in the scientific literature (e.g. Teitelbaum 2004, Coleman 2006). The issue has also received attention in formal demography, where studies have been performed dealing with the effects of including immigration in population models (e.g. Espenshade *et al*. 1982) and its impact

on composition of the population (e.g. Steinmann and Jäger 2000) or structure (e.g. Wu and Li 2003, Alho 2008).

This interaction between low fertility and immigration is considered essentially a 'Western issue', and it is also argued that these countries may follow a different pattern of ethnic diversification than East Asian countries (Coleman 2009). However, while drawing attention to this issue, no estimation of the impact of migration on the future composition of the population was usually provided, or it was done by assembling available projections (using different methodologies) carried out in single countries. Finally, a comparative quantitative study has been carried out on the EU Member States (Lanzieri 2011b), showing the relevant impact of migration on the future composition of the European population. These results were also recalled in the latest official demographic report of the European Commission (2011), which focused on the implications of migration on the composition of the population, highlighting how migration is contributing to the shape of *new* Europeans.

In this study, the focus is on future developments, and it is assumed that Japan will behave demographically in a similar manner to European countries or experience different migratory flows. What then would be its demographic perspective? In fact, considering alternative scenarios highlights the importance of attributing the right meaning to the projections, which are not pure forecasts. Projections have an important informative function for policy-makers, who should become used to being confronted with various scenarios, as in other domains where future developments are analysed. Therefore, the study focuses on the contribution of migrants to demographic changes, comparing the prospected composition of the population in Japan and in European countries, providing, probably for the first time, specific quantitative information to the discussion on migration policies in Japan.

I. Some Future Scenarios

It can be shown that, regardless of assumptions of vital rates, the population of Japan is expected to both decline and age due to its negative population momentum. However, the extent of these processes does depend on the future course of fertility, mortality and, last but not least, migration. Due to its inherent volatility and the difficulty to measure it, this latter component may be considered the hardest to predict. Sensitivity variants are useful tools to assess the impact of changes in the assumptions on the population dynamics, but the approach taken here is, instead, of thinking of different scenarios for the setting of assumptions.

On fertility and mortality, the easiest way to compare the structural differences between Japan and European countries is to assume that the former behaves demographically like the latter ones, and to incorporate Japan into the European convergence framework. The main assumption on which EU projections are based is that socio-economic differences between countries are fading in

the very long term. This may give rise to some scepticism about the incorporation of Japan in the (converging) mainstream, considering the cultural differences. However, whether or not in the future the socio-economic drivers of fertility and mortality are the most important explanatory factors, the convergence scenario may be an alternative way of thinking about future Japanese dynamics, especially considering that demographic convergence is never fully achieved (not even between European countries) and that this framework is used to control for the range of variation in fertility and mortality across countries, which may sound plausible. As a matter of fact, demographic convergence has occurred in past decades (Wilson 2001), and although the timing and pace of fertility may be debatable (Dorius 2008, Lanzieri 2010), on mortality such convergence may also concern forerunner countries as Japan (Wilmoth 1998).

As the European experience shows, migration is typically a very volatile component, and the one most influenced by policies and economic cycles. It is probably the easiest lever on which policy-makers can rely for population policies with an immediate impact, although in a global context the 'migration market' is becoming progressively competitive, at least for the skilled labour force. Immigration is not necessarily a controlled phenomenon, but considering the geographical characteristics of Japan, this is more likely to be the case than in Europe. Two theoretical cases are considered here: in the first, it is assumed that policy-makers will opt for action on immigration limited in time, such as an injection of demographic rejuvenation to boost population growth and avoid excessive decline and ageing in the future; in the second, future migration inflows are linked to the shrinking of the population of working age. As for historical comparisons, the former may be roughly thought of as the migration from Europe to the USA at the beginning of last century, stopped by the Immigration Act of 1924; the latter as the labour migration occurring in Western Europe in the 1960s until the economic crisis of 1973 (cf. Fassmann and Münz 1992).

Therefore, three theoretical alternatives to the official scenario (here named 'Standard') are considered below. The first scenario, named 'Convergence', only modifies the fertility and mortality assumptions. The latter two focus instead on the migration assumptions, as the real lever available to policy-makers to driving future population change in Japan, and migrants are assumed to settle permanently in the country. Although a policy aiming to attract temporary workers is more likely in Japan, the full demographic effect of migration cannot take place if those workers leave the country after a while. As Tsuda (1999a) shows for the case of the *nikkeijin* (Brazilians of Japanese origin), permanent settlement does not always come from a decision taken once at the beginning of the immigration; it may well be the final outcome of a prolonged temporary stay.

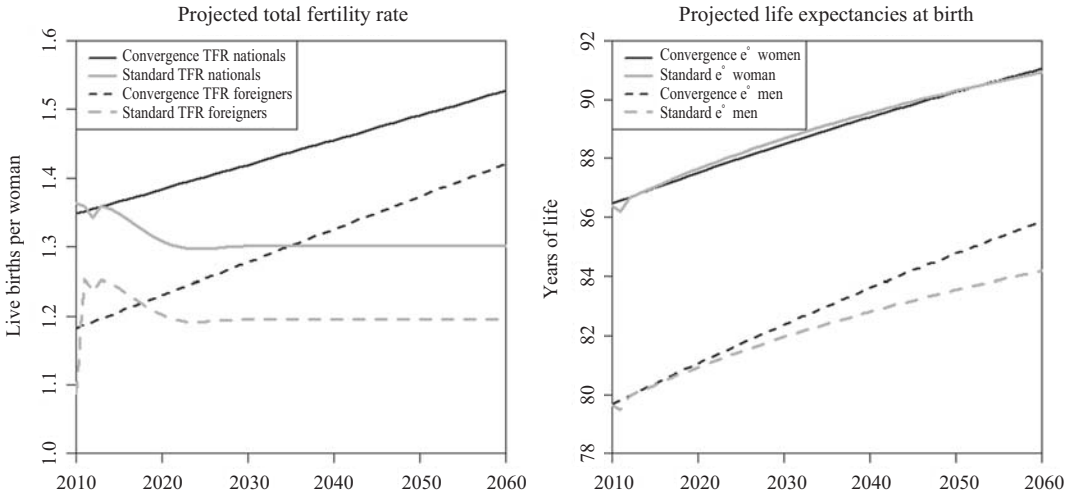
Initial estimates of the foreign population in Japan are based on the latest Census 2010 results. However, in any country, the exercise of taking a census may be confronted with population groups difficult to reach, and typically this is the case with the foreign population. Thus, it should not be surprising if this specific group were insufficiently covered by the Japanese census, and the effective size of the foreign population in Japan could be higher than that resulting from the census.

The outcomes presented in this study referring to the foreign population size should therefore be considered an underestimate.

1. Japan converging with European countries

In order to isolate the impact of fertility and mortality assumptions, the migration assumptions are left unchanged, thus as from the IPSS (2012) projections for Japan. The assumptions for fertility in the convergence scenario would point to a recovery of the TFR for both nationals and foreigners, as shown in the left panel of Figure 1, and to decreasing differences in fertility behaviour between these two population groups. As for mortality (right panel of Figure 1), there would not be much difference in the assumptions on female life expectancy at birth, but in the Convergence scenario male mortality would be assumed to catch up with improvements in female life expectancy, which gives an increasing difference for male life expectancy at birth between the two scenarios.

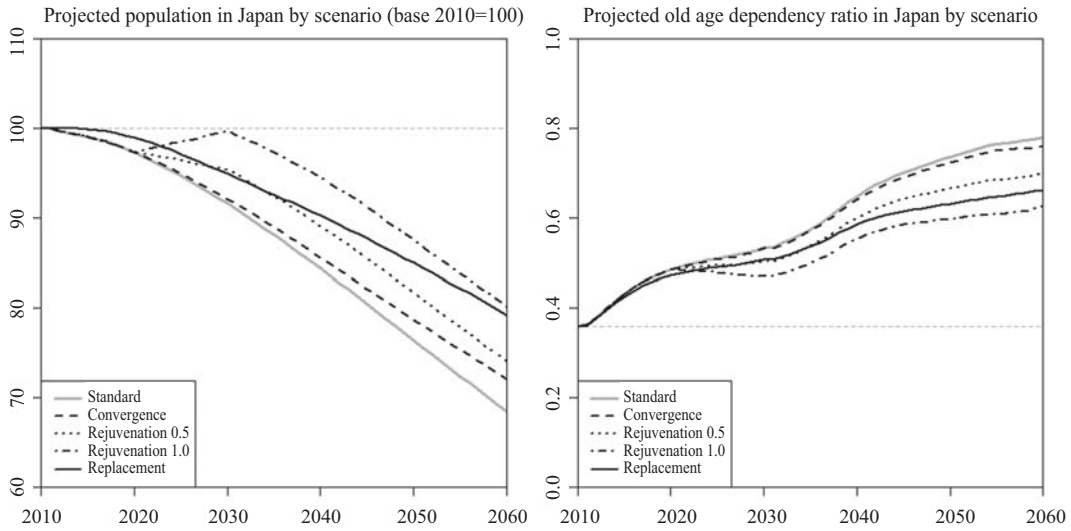
Figure 1. Fertility and mortality assumptions for Japan in the Standard and Convergence scenarios



The left panel of Figure 2 shows the projected populations according to the various scenarios for 2010 to 2060. As expected, the higher fertility as well as male mortality assumptions of the Convergence scenario (the dashed line) reduce the projected population decline to 18 % of the original size, a difference of about 4 p.p. from the IPSS (2012) projections (the solid grey line).

As for the ageing, showed in the right panel of Figure 2, the benefit of the more 'generous' assumptions of the Convergence scenario is little visible and can be quantified in a reduction of the old age dependency ratio (OADR) of about 0.02 by 2060, which would still place Japan 0.08 points above the European country with the highest projected OADR (Latvia by that time). This should

Figure 2. Projected population size and OADR in Japan by scenario



not come as a surprise, as the current age structure of Japan would not stop the population ageing even for a much more significant recovery of fertility than that assumed in the Convergence scenario. Moreover, there is higher male life expectancy which may partially offset the downsizing effect of fertility on the OADR. From this point of view, fertility assumptions for Japan are 'robust' as to what concerns the impact on population decline and ageing for the next five decades, in the sense that variations — to the extent foreseeable as of today — from the current set of assumptions in the IPSS (2012) projections would not radically modify the main messages.

2. A short-term rejuvenation input

The case of a temporary opening up to immigration to offset the negative population trends in Japan, the 'Rejuvenation' scenario, is here presented in two variants to highlight the relevance of the inflow size. In both variants, this exceptional migration inflow is assumed to take place in the period 2020-2029, when the effects of ageing may start to be more acute and in consideration of the time necessary to implement such a policy.

Assuming a net inflow of half a million foreigners each year per 10-year period, equally split by sex, this corresponds to a crude rate of about four persons per 1,000 inhabitants (not taking into account the migration of Japanese nationals), a proportion below that projected for several European countries in the same period [1)]. A more extreme hypothesis would be to consider a net inflow of one million foreigners each year over the same period, which would instead be a bit

1) In fact it is just above the average of the values of the 3rd quartile of the distribution of European countries in the period 2020-29, whose rates however include the migration of nationals. Including the migration of Japanese nationals, the average rate is actually below the European value.

above the rates assumed for European countries [2]. For all years before and after the 'opening' period, net migration of foreigners is set to the same level as the Standard scenario. Likewise, all the other assumptions (including migration of Japanese nationals) are as from the IPSS (2012) projections, in which foreigners are assumed to have lower fertility than nationals. Therefore, in both variants, immigrants are assumed to be *imin*, i.e. permanent settlers, and not *dekasegi*, i.e. temporary workers who leave the country after a while.

In the first variant (named 'Rejuvenation 0.5', the black dotted line in both panels of Figure 2), the decrease in the number of women of reproductive age slows down after 2020 to then begin declining again at the same pace as in the Standard scenario after 2030, and getting progressively closer to that case. In the higher variant (named 'Rejuvenation 1.0', the black dot-dashed line in both panels of Figure 2), the shrinking of the cohorts of women of reproductive age is instead stopped after 2020, and a positive trend is projected to take place over that decade. However, afterwards that number would start again to decline down to a value 40 % less than the original size by 2060, but still about 10 p.p. higher than in the Standard scenario. In both variants, the number of births is then boosted in the decade 2020-29, and this 'bubble' propagates as a wave in the future, with the oscillations of the number of births getting progressively smaller in amplitude and closer on average to the number of births in the Standard scenario. By 2060, the number of live births in Japan would be about 44-50 % (depending on the variant) less than in 2010, thus 6-12 p.p. higher than in the Standard scenario.

Those waves of births are not visible in the projected total population size, but the overall effect can be seen. In the lower immigration variant, the population decline is stopped, while in the higher variant it is inverted (see left panel of Figure 2). However, that effect does not last long and the population re-starts its decline after 2030, keeping the same pace as the Standard scenario but with values shifted upwards. In the long term, those temporary deviations would be completely absorbed and the decline would be equal to that projected in the Standard scenario.

As for the ageing (right panel of Figure 2), the impact of the migration opening is much more interesting, as the OADR is projected to be at much lower levels, closer to the European values, within the time horizon of the projections. However, as immigrants age as well, when the generations which immigrated in the 2020s reach older ages, the OADR is likely to climb very rapidly, up to — if not higher than — the levels of the Standard scenario. Depending on the age profile of the immigrants, such an effect would probably take place after 2060, and it is therefore not visible in the current analysis.

Therefore, a *temporary* action generates a *temporary* outcome as well. The benefits of a migration limited in time have a shorter duration for the population decline, and a longer one for

2) European countries are assumed to have shrinking immigration flows after 2020, which contributes to explaining the high ranking of Japan under this scenario.

the ageing of the population [3]. This may be understood as the effect of a baby boom, where the new-borns have the average age of the immigrants [4]: there is a time window in which the demographic conditions are more favourable, but later on all cohorts arrive at older ages. For immigration, the demographic benefit is closer to the date of the event (immigration) than for fertility. From a purely demographic perspective, immigrants could be seen as new-borns in their twenties.

3. Partial replacement migration

In this last scenario, named 'Replacement', it is again the case of immigrants who become permanent settlers in Japan, but the size of the inflows is this time determined by demographic conditions and not by a quota-like migration policy. It is assumed that approximately [5] one quarter of the projected shrinking of the population of working age from the IPSS (2012) projections is replaced by foreign immigrants, and all other assumptions are as in the Standard scenario. This gives an average annual number of net foreign migrants below 250,000, a level far below the one assumed for Italy, which has a population size less than half that of Japan. Compared to the population, this assumptions corresponds to an average crude net migration rate (always restricted to foreigners) of about 2.1 net migrants per 1,000 inhabitants, a level which is even below the median of the European countries.

This gives a progressive slowing down of the decline of the cohorts of women of reproductive age and a similar pattern for the number of births. The increase in births in 2060 is estimated to be as high as 13 p.p. from the Standard scenario, again under the assumption of lower fertility among foreigners than Japanese women. This is a differential comparable to that obtained in the Convergence scenario, where fertility is assumed to increase, and higher than that based on a Rejuvenation input.

The final impact (in 2060) in terms of population size and ageing is similar to the previous migration scenario, but the path is smoother and progressive, and likely to also continue beyond that time horizon. As shown in the left panel of Figure 2, the population decline by 2060 estimated under the Replacement scenario is about 20 %, a result almost equal to that obtained with a high inflow of immigrants in a short period (variant Rejuvenation 1.0). As for the ageing (the right panel of Figure 2), the impact on the OADR for the next three decades is almost similar to the case of the variant Rejuvenation 0.5, but then it departs from it, being at lower levels ending at 0.66, a

3) For population size, the objective would be to avoid population decline, while for the ageing of the population it would be to soften the increase: the durations mentioned in the sentence should be read from this perspective. Otherwise, the extent of the population decline is reduced throughout the projected period, which could also be considered a benefit of temporary immigration.

4) For the sake of precision, immigrants are likely to have different fertility (and mortality) than the host population, at least in the short term, and therefore they are not exactly the same as a baby boom shifted backwards by 20-30 years.

5) The 'replacement' migration is not applied year by year, which would indeed imply a replacement; instead, it is computed once for all from the Standard scenario and added to its migration assumption.

value below the European maximum projected for that year (taken by Latvia). Here, the real difference between the migration assumptions is probably not visible, but it is likely that, after 2060, the OADR would remain almost stable in the Replacement scenario, contrary to what is expected in the Rejuvenation case.

Hence, this Replacement scenario would see Japan as a 'European' country, though penalised by lower fertility. Migration levels would be comparable to those in Europe, and generated by the needs of the national labour market, therefore without necessarily a pro-active migration policy. As in Europe, continuing immigration flows in a low-fertility context is likely to contribute an important component to the shape of the future population of Japan. This issue is addressed in the following section.

II. The Contribution of Migration to the Composition of the Future Population

1. The states space

To control for future changes in the composition of the population, the projection methodology used here is based on the transitions between states (see van Imhoff and Keilman 1992). The population is classified according to a combination of characteristics, namely age, sex and citizenship background. For this latter, four states are here used: natives, immigrants, second-generation migrants and new citizens. The first category includes all nationals with Japanese parents, the second the foreign immigrants, the third the offspring of these immigrants, and the last all persons who acquire Japanese citizenship as well as the offspring of mixed Japanese-foreign marriages. The persons classified either as immigrants or as second-generation migrants are then the *foreign population* or *population with foreign citizenship*, and adding the new citizens gives the *population with foreign background* (see Table 1).

Table 1. States space and its aggregations

Aggregation by citizenship	*Citizenship background*	*Aggregation by background*
Nationals	Natives	National background
	New citizens	Foreign background
Foreigners	Immigrants	
	Second generation migrants	

For the sake of simplicity and due to the lack of information, the stock of second-generation migrants, as well as that of new citizens, is assumed to be null at the beginning of the projected period. It is also assumed that they are closed to migratory flows: therefore, migrants can only enter either the state of natives or that of immigrants. As for births, those from natives are considered to be natives as well, and likewise the offspring of new citizens are classified as new citizens. Births

from immigrants can instead be classified either as a 'new citizen' (births from mixed unions with one Japanese parent) or as second-generation migrants, according to a predefined probability distribution depending on the age of the mother (average percentage of Japanese babies born to non-Japanese mother = 45.8 %). Births from second-generation migrants are instead assumed to be new citizens. This latter assumption makes those new-borns disappear from the 'statistical view' of the foreign population, but it is considered that either the degree of integration of the second-generation migrants would increase their chances of union with nationals or the development of legislative settings recognising *jus soli* [6] for the descendants of foreign background from the third generation onwards may be implemented. Anyway, the full contribution of migration to the composition of the population can be recovered from the breakdown by background, which groups all persons with at least one foreign ancestor. All the other assumptions are taken from the IPSS (2012) projections. In particular for fertility, second-generation migrants are assumed to have the same demographic behaviour as (first-generation) immigrants, and the new citizens that of the natives. In fact, this implies that the fertility of the population with foreign backgrounds converges on the fertility of the natives as time passes. As for transitions between states, migrants of any of the two generations are assumed to acquire Japanese citizenship based on fixed age- and sex-specific rates, while Japanese people are assumed to never change their citizenship and transitions between immigrant and second-generation states are impossible by definition.

The above-mentioned study of population by foreign/national background in EU countries (Lanzieri 2011b) is used here for the sake of comparison with the Japanese case. However, that study uses the variable 'country of birth' to identify national or foreign background, and therefore comparability with the current analysis is not absolute. Moreover, it obviously does not include the case of a change of state due to the acquisition of citizenship, and thus the 'new citizens' category does not exist there. Of the four models there presented, the closest to the present study is Model 3, where there is a fertility differential between foreign- and native-born and all descendants of a foreign-born mother (regardless of the generation) are considered of foreign background, here used for comparisons with the projected population with a foreign background in Japan. The results of Model 1 in Lanzieri (2011b) are instead closest to the projected foreign population in Japan, if one ignores the fertility differentials between nationals and foreigners. The results of Models 1 and 3 in Lanzieri (2011b) are then used here to represent the projected situation for Europe, but the reader should bear in mind the conceptual differences between the two studies.

6) The principle of *jus soli* states that newborns (can) take the citizenship of the country in which they were born, as opposed to *jus sanguinis*, where instead newborns take the citizenship(s) of their parent(s), regardless of the country of birth. The legislative setting of a country may well have a mix of the two principles, sometimes also depending on the generation.

2. Population of foreign citizenship

Under the IPSS (2012) assumptions above specified, the size of the population of foreign citizenship is estimated to be about 3.5 million at the end of the projected period (1 January 2060), corresponding to 4 % of the total population of Japan (see Table 2). However, its presence is more relevant in the younger population of working age (15-39 years old), where they almost reach 6 %. Compared to European countries, these values appear very moderate. According to the results of Model 1 in Lanzieri (2011b), within the EU, only Poland and Romania would have proportions of

Table 2. Age-specific percentages of the population of foreign citizenship in Japan in selected years by scenario and major age group

(%)

Standard						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	1.4	2.1	2.4	2.5	2.5
15-39	2.2	3.5	4.3	5.1	5.7	5.9
40-64	1.1	1.5	2.4	3.6	4.7	5.3
65+	0.4	0.5	0.7	1.0	1.5	2.4
Total	1.3	1.7	2.3	2.9	3.5	4.0
Convergence						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	1.4	2.0	2.3	2.4	2.4
15-39	2.2	3.5	4.3	5.1	5.4	5.5
40-64	1.1	1.5	2.4	3.6	4.7	5.2
65+	0.4	0.5	0.7	1.0	1.5	2.4
Total	1.3	1.7	2.3	2.9	3.4	3.9
Rejuvenation 0.5						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	1.4	5.0	7.1	5.5	3.1
15-39	2.2	3.5	15.8	13.7	8.1	8.4
40-64	1.1	1.5	2.5	6.9	13.4	13.5
65+	0.4	0.5	0.6	0.8	1.4	3.2
Total	1.3	1.7	5.8	6.6	7.1	7.6
Rejuvenation 1.0						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	1.4	8.1	11.4	8.4	3.8
15-39	2.2	3.5	25.9	21.7	10.6	10.7
40-64	1.1	1.5	2.7	10.5	21.3	20.9
65+	0.4	0.5	0.4	0.5	1.2	4.1
Total	1.3	1.7	9.5	10.4	10.9	11.2
Replacement						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	2.6	5.1	6.8	8.1	8.5
15-39	2.2	8.6	11.7	15.7	18.9	18.7
40-64	1.1	1.6	3.8	8.4	12.7	16.0
65+	0.4	0.4	0.6	0.8	1.6	4.7
Total	1.3	3.3	5.0	7.6	9.9	11.8

foreigners that low, and together with Bulgaria, Estonia, Latvia and Slovakia below 10 % of the total population.

Some of the alternative scenarios would change this picture. As shown in Table 2, the proportion of foreigners in the respective age-specific populations makes almost no difference in the Convergence scenario. In fact, the difference there was in fertility and mortality assumptions, and the effect of the former requires some time before it becomes visible. The impact is much more visible in the scenarios based on alternative migration assumptions. In the two variants of the Rejuvenation scenario, the effect of the migration opening after 2020 is visible in the age group 15-39, moving up to the age group 40-64 by the end of the projected period, due to the progressive ageing of those special generations which immigrated in the 2020s. At that time, the share of foreigners is projected to reach between 13 % and 21 %, a level a few times higher than in the Standard scenario. The overall percentage of foreigners would be over 11 % in the higher variant, again a level which is quite modest compared to European countries.

In the Replacement scenario, that overall percentage does not change much (less than 12 %), but the age distribution of the foreign population is more equilibrated than in the Rejuvenation scenario, and the age group in which there is the larger presence of foreigners is always the younger population of working age (15-39 years old).

3. Population of foreign background

In the breakdown of the population by background, the group of new citizens is moved to the persons with a foreign background, which inflates the figures reported above in the classification by citizenship. In Table 3 it can be seen that, based on the assumptions of the IPSS (2012) projections, the share of persons with a foreign background (regardless of their actual citizenship) by 2060 would be about 10-11 % in the younger population: in other words, one student out of ten would have a foreign background. Again, compared to European countries as in the results of Model 3 in Lanzieri (2011b), this would be a very modest percentage, below even the lowest share among the countries for which such information is available, projected for Estonia.

If alternative migratory flows take place in future decades, those percentages must be substantially revised upwards. However, in none of the alternative scenarios will the proportion of the total population with a foreign background in 2060 exceed 20.1 %, a level which is instead projected to be crossed by many European countries in the coming decades, some of them even currently. The highest shares by age group are projected in the Replacement scenario, where by the end of the projected period almost one out of three of either students or young workers will have a foreign background. Unlike in the Rejuvenation scenario, in the Replacement scenario the percentages of persons with a foreign background increase progressively over time within each age group.

Table 3. Age-specific percentages of the population of foreign background in Japan in selected years by scenario and major age group

(%)

Standard						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	2.6	4.9	6.2	8.1	10.4
15-39	2.2	3.8	5.1	7.1	9.2	10.8
40-64	1.1	1.7	2.9	4.6	6.3	7.9
65+	0.4	0.5	0.8	1.3	2.0	3.5
Total	1.3	2.0	3.0	4.1	5.5	6.9
Convergence						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	2.6	4.7	6.1	8.0	10.0
15-39	2.2	3.8	5.1	7.0	8.9	10.3
40-64	1.1	1.7	2.9	4.6	6.3	7.8
65+	0.4	0.5	0.8	1.3	2.0	3.5
Total	1.3	2.0	3.0	4.1	5.5	6.9
Rejuvenation 0.5						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	2.6	9.8	17.8	17.1	16.0
15-39	2.2	3.8	17.0	17.0	15.0	19.6
40-64	1.1	1.7	3.0	8.5	17.2	19.2
65+	0.4	0.5	0.7	1.0	1.9	4.5
Total	1.3	2.0	6.8	9.1	11.2	13.5
Rejuvenation 1.0						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	2.6	14.9	28.3	25.7	21.9
15-39	2.2	3.8	27.6	26.2	21.0	28.0
40-64	1.1	1.7	3.2	12.6	27.1	29.3
65+	0.4	0.5	0.5	0.7	1.7	5.8
Total	1.3	2.0	10.9	14.3	17.1	20.1
Replacement						
Age group	2010	2020	2030	2040	2050	2060
0-14	0.8	4.7	11.6	16.2	22.5	29.1
15-39	2.2	9.1	13.2	19.6	26.5	30.0
40-64	1.1	1.7	4.5	10.5	16.6	22.2
65+	0.4	0.5	0.6	1.0	2.2	6.8
Total	1.3	3.7	6.4	10.3	14.6	19.2

4. The challenge of the integration of migrants

The permanent settlement of relevant immigration flows brings new challenges to the host populations, and policy-makers may wish to implement policies to ease the integration or assimilation of the immigrants. Along with the immigrants themselves, a new community also emerges, that so-called 'second generation' of migrants who, despite being born in the host country, may feel the influence of their parents' country of origin and face particular difficulties in integration. Or, at the other extreme, they may be much more assimilated than their parents, even

refusing any reference to the culture of origin, which may create conflict situations within families. Between these two extremes lie, of course, the cases of unproblematic integration/assimilation in the host countries.

Table 4 shows the composition of the population in Japan by single citizenship background. Due to the assumptions applied here about second-generation migrants, their proportion grows very slowly over time, only 'fed' by migration. Nevertheless, depending on the scenario, that little quota means a group size of between half a million and a bit less than two million people. If the

Table 4. Composition of the population in Japan by citizenship background and scenario

(%)

Standard						
State	2010	2020	2030	2040	2050	2060
Natives	98.7	98.0	97.0	95.9	94.5	93.1
New citizens	0.0	0.3	0.7	1.2	2.0	2.9
Immigrants	1.3	1.6	2.1	2.6	3.0	3.4
2nd-generation	0.0	0.1	0.2	0.4	0.5	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Convergence						
State	2010	2020	2030	2040	2050	2060
Natives	98.7	98.0	97.0	95.9	94.5	93.1
New citizens	0.0	0.3	0.7	1.2	2.0	3.0
Immigrants	1.3	1.6	2.1	2.5	2.9	3.3
2nd-generation	0.0	0.1	0.2	0.4	0.5	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Rejuvenation 0.5						
State	2010	2020	2030	2040	2050	2060
Natives	98.7	98.0	93.2	90.9	88.8	86.5
New citizens	0.0	0.3	1.0	2.5	4.1	5.9
Immigrants	1.3	1.6	5.4	5.7	6.0	6.4
2nd-generation	0.0	0.1	0.4	0.9	1.1	1.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Rejuvenation 1.0						
State	2010	2020	2030	2040	2050	2060
Natives	98.7	98.0	89.1	85.7	82.9	79.9
New citizens	0.0	0.3	1.4	3.9	6.3	8.9
Immigrants	1.3	1.6	8.9	8.9	9.1	9.4
2nd-generation	0.0	0.1	0.6	1.5	1.8	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Replacement						
State	2010	2020	2030	2040	2050	2060
Natives	98.7	96.3	93.6	89.7	85.4	80.8
New citizens	0.0	0.4	1.4	2.7	4.7	7.4
Immigrants	1.3	3.1	4.5	6.7	8.6	10.1
2nd-generation	0.0	0.2	0.5	0.9	1.3	1.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

assumption about the naturalisation of third-generation migrants does not apply and/or the current stock was much different from zero, then those figures would definitely be higher.

Those who become Japanese citizens may be seen as successful cases of integration. Their share is quite relevant in the alternative migration scenarios (between 6 % and 9 % of the total population), although part of it comes from the assumption about the births from second-generation migrants. Further, those shares depend as well on policies regarding the acquisition of citizenship, which may of course change over time.

Conclusions

The issues of population decline and ageing in Japan are already well known and the subject of many analyses. However, besides generic conclusions about the importance of fertility recovery and/or opening up immigration flow to counteract these processes, there has so far been no detailed study in the international literature about the implications for the future composition of the population in Japan of these demographic options. This latter point is instead actually central to an assessment of their feasibility by the policy-makers.

Current projections for Japan continue to assume very little migration over the coming decades. Even with these conservative assumptions, the population with a foreign background may become 'visible', especially in selected age groups. Further, the prospective size of the foreign population is likely to be an underestimate, as it is based on the assumption that the fertility of immigrants would continue to be lower than natives in the long run, and with a base population in which there may be under-coverage of the current stock of foreigners.

Alternative scenarios about future migration inflow show that immigration comparable to that predicted for Europe would indeed help, but Japanese society would undergo a (relatively) rapid change in its composition, although to a much lesser extent than in many European countries. For the positive contribution of migration to population dynamics to be long-lasting and not just occasional, a migration limited in time would perhaps not be the best solution. It is also likely that a slow and progressive increase in immigration would be easier to integrate/assimilate than a sudden inflow — though controlled — of immigrants. In any case, the permanent settlement of immigrants generates a new population group, the 'second generation', whose integration may require special attention.

Therefore, while for Europe the current projections return a long-term picture of aged, multicultural populations (not necessarily in decline), for Japan the demographic situation is prospected to be more homogeneous as for the composition of a (much) smaller and (much) more aged population. The composition of the population and the extent of its ageing would then be the real elements of difference in the diverging demographic paths of Japan and Europe.

Acknowledgements and disclaimer

The study was carried out during my stay at the Department of Population Dynamic Research of the National Institute of Population and Social Security Research in Tokyo, in the framework of an Invitation Fellowship Program for Research of the Japan Society for the Promotion of Science.

I am grateful for the large and ready access to data on Japan and particularly on the latest projections exercise, as well as for the kind support from Ryuichi Kaneko, Futoshi Ishii, Miho Iwasawa and Kenji Kamata.

The views here expressed are exclusively those of the author and do not necessarily represent those of the European Commission / Eurostat.

（2014年1月29日査読終了）

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国際人口移動シナリオと将来人口の構造：日欧比較

ジアンパオロ・ランツィエリ

本論文では，国際人口移動に関する様々な仮定に基づく将来人口の構成に関する結果を定量的に示し，それらを欧州各国の見通しと比較した．蓋然性の高い仮定の範囲で言えば，現在の欧州地域と同レベルの国外からの移入が起こったときのみ，日本の極端な人口減少と高齢化を回避できるが，人口構成は多様化する．今後50年の間において，外国生まれ人口は，若年人口において極めて重要な位置を占め，将来の移入水準にもよるが，人口にしめる比率が10%～30%に達する可能性がある．