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Prospects of population decline in Japan

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As the number of births falls below replacement level in many countries, the developed world is living with the fear of demographic ageing and population decline. With one of the world's lowest fertility rates – 1.3 children per woman – and the highest life expectancy, Japan is an extreme illustration of this trend. Analysing the latest Japanese population projections, Jacques Véron explains the inevitable and possible consequences for the country's demographic future.

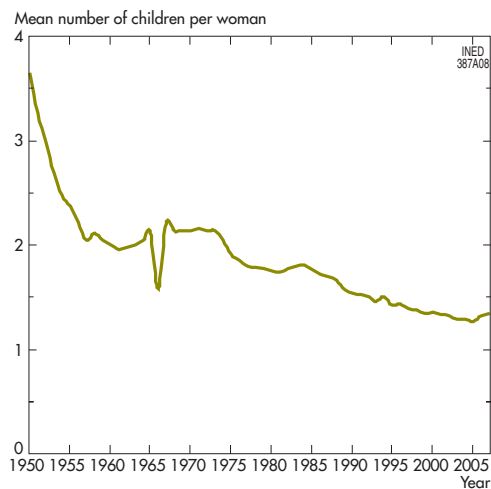
According to the demographic projections issued at the end of 2006 by the National Institute of Population and Social Security Research in Japan, the country's population will have dropped to just 95 million in 2050, down from 128 million in 2004, a decrease of 32 million [1,2]. This decline is explained by Japan's lowest-low fertility. Under the medium variant projection, the mean number of children per woman will continue to fall in the coming years, before picking up again slightly to reach 1.26 in 2055. Over the longer term, again under the medium projection, the population size will drop by half, to just 48 million in 2100. Reflecting the country's concerns over its future, the projections forecast the total extinction of the Japanese population by around 3000 if lowest-low fertility continues indefinitely. But even limiting the analysis to the next 50 years, this projected decline will lead to profound changes in the Japanese age structure and a marked decrease in the working-age population.

◆ Sustained low fertility and the world's highest life expectancy

After a very short-lived baby boom (just three years), Japanese fertility dropped sharply after the Second World War, from 3.65 children in 1950 to 2.04 in 1959,

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Figure 1 – Japanese fertility, 1950-2007



Note: 1966 is a Fire Horse year in the Chinese horoscope (see text).
Source: [1]

(Jacques Véron, *Population & Societies*, 449, INED, October 2008)

before returning to above-replacement level in the late 1960s and early 1970s (Figure 1). In 1966, fertility dropped exceptionally to 1.58 children due to an unlucky "Fire Horse" Chinese horoscope combination. According to a widely-held belief, girls born in such years bring misfortune upon their husband. As a result, many births were postponed, or registered in 1965 or 1967. The birth rate began falling again in 1974 and the downtrend has continued ever since. When, in 1990,

it dropped back to the level of 1.5 children observed in 1966, Japan experienced a sudden jolt, known as the “1.53 shock” as the country opened its eyes to the changes under way, notably the shrinking number of young workers and the ageing of its population [4]. Fertility nonetheless continued its decline over the next 15 years, with the mean number of children per woman dropping to 1.26 in 2005. It picked up slightly in 2006 (1.32) and in 2007 (1.34).

Over the last 50 years, the mean age at maternity, for all birth orders, has increased by just one year, from 28.9 years in 1955 to 29.9 years in 2004, though the first birth occurs much later (28.5 years today, compared with 25.1 years in the mid-1950s). In a society where births outside marriage are still rare – fewer than 2% of births in 2004 – the postponement of marriage and the increase in female celibacy have produced a mechanical decrease in fertility (1). Between 1950 and 2000, the proportions of women aged 20-40 who are still unmarried increased very sharply (Table 1). In 2005, 59% of women aged 25-29 were still single, compared with 15% in 1950, while the proportion in the 30-34 age group increased more than five-fold over the period, from 6% to 32%.

Mortality has also been steadily declining (Table 2). Life expectancy at birth rose by almost 20 years for men between the early 1950s and 2007, and by 23 years for women. With a mean length of life of 86.0 years in 2007, Japanese women hold the world record for longevity. The life expectancy gap between men and women has also widened, doubling from 3.4 to 6.8 years between the early 1950s and 2007. Life expectancy at age 65 also increased by almost 7 years for men and 10 years for women between the early 1950s and 2005. At that age, men can expect to live a further 18.1 years on average, and women 23.2 years.

With the decrease in mortality, the number of Japanese centenarians is growing very rapidly. There were fewer than 1,000 in 1980, but more than 32,000 in 2007, of whom over 85% were women.

In 1950, there were 2.6 times more births than deaths. In 2006 the numbers were around equal, and by 2050 deaths are forecast to outnumber births by 2.4 to one.

◆ Fewer extended families, more people living alone

As mortality declines, the proportion of households including a person aged 65 or over is increasing. Their number was multiplied by 2.5 between 1975 and 2004.

(1) A reverse effect can also be imagined, i.e. a lesser desire for children resulting in greater disinterest in marriage, but surveys show that this does not appear to be the case; young adults still want to have children.

Table 1 – Proportions of never-married among women aged 20-40 in 1950 and 2005 (%)

Age group	Year	
	1950	2005
20-24	55.3	88.7
25-29	15.2	59.0
30-34	5.7	32.0
35-39	3.0	18.4

Sources: [1] and [2]

(Jacques Véron, *Population & Societies*, 449, INED, October 2008)

Table 2 – Male and female life expectancy at birth, Japan, 1950-2007 (in years)

	Males	Females
1950-1952	59.6	63.0
1960	65.3	70.2
1970	69.3	74.7
1980	73.3	78.8
1990	75.9	81.9
2000	77.7	84.6
2007	79.2	86.0

Source: [2]

(Jacques Véron, *Population & Societies*, 449, INED, October 2008)

In 1975, the majority of such households (54%) were three-generation families, but by 2006 the proportion of three-generation families among households with at least one person aged over 65 had dropped to just 21%. Instead of falling, it could have increased, since, in theory, fewer children and a longer life expectancy increase the likelihood for a child of living in a three-generation family [5]. Perhaps three-generation families function less effectively, especially in terms of role distribution, when the probability for the grandparents of reaching an advanced age is increasing. Perhaps, also, the modern urban habitat is poorly suited to large families of this kind.

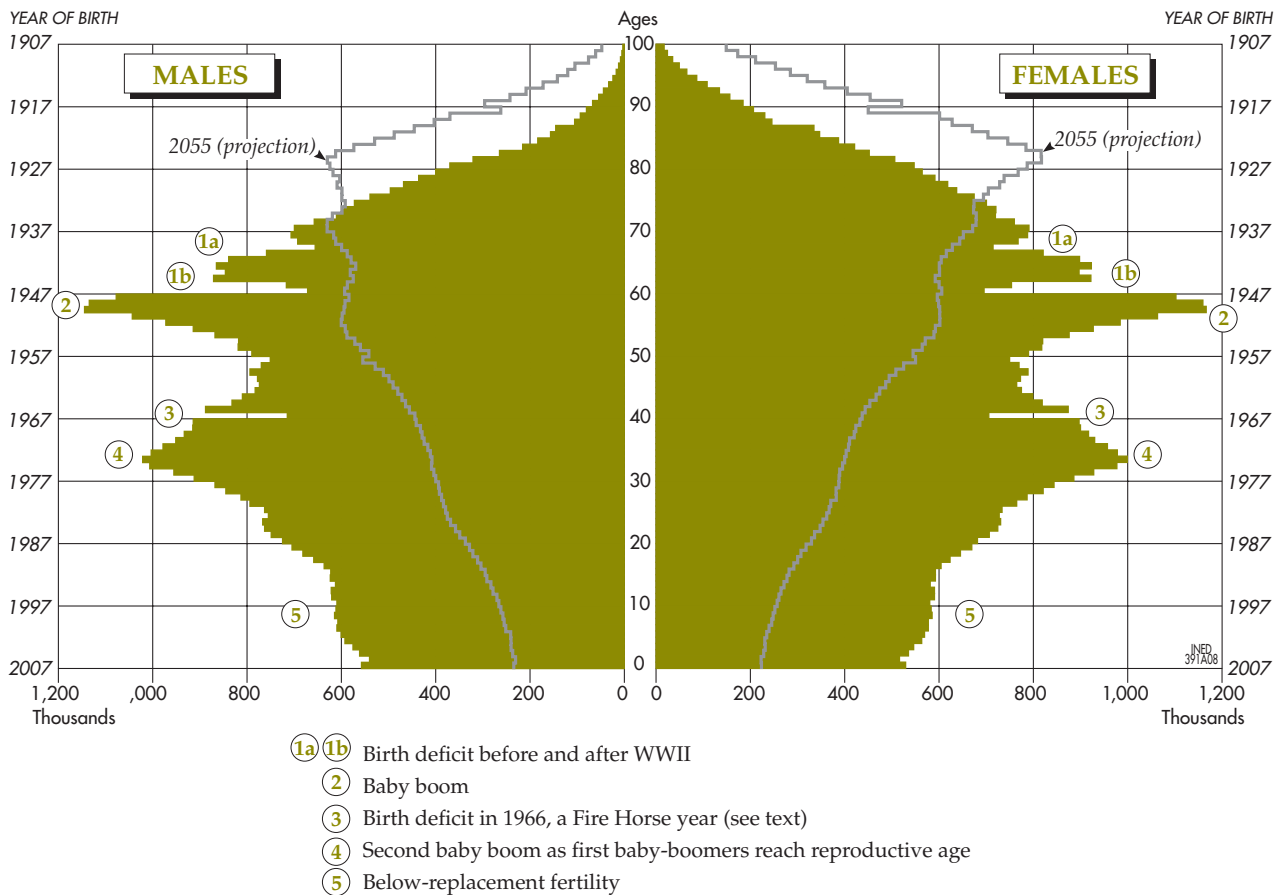
◆ Radical changes in the age structure and a smaller labour force

Under the 2006 medium variant projections, Japanese population decline will be associated with a radical change in its age structure (Figure 2). The share of over-65s in the total population, which rose from below 5% in 1950 to 25% in 2007, could reach 32% by 2030 and almost 40% in 2050 (Figure 3). The over-75s, barely 1% of the Japanese population in 1950, could represent more than one-fifth of the total in 2050.

After a long period of decline – from 72% in 1920 to 43% in 1990 – the dependency ratio (2) had moved back up to 54% in 2007 and could increase very sharply in

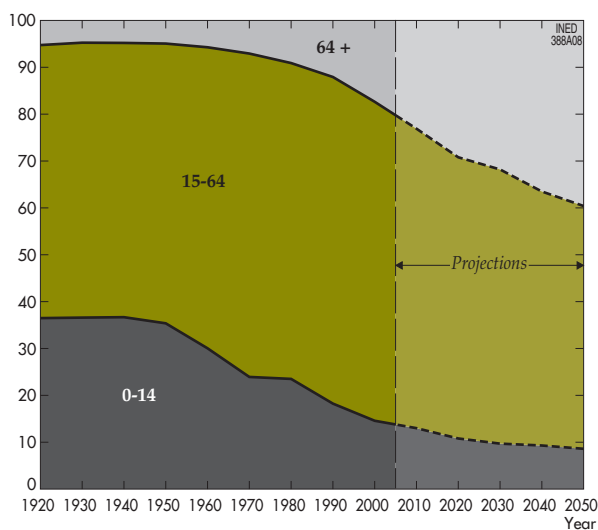
(2) Ratio of persons aged under 15 or over 65 to persons aged 15-64.

Figure 2 – Population pyramid of Japan on 1 January 2007 and in 2055 (projection)

(Jacques Véron, *Population & Sociétés* n° 449, Ined, octobre 2008)

Source : [1]

Figure 3 – Age-distribution of the Japanese population (%)



Source : [2]

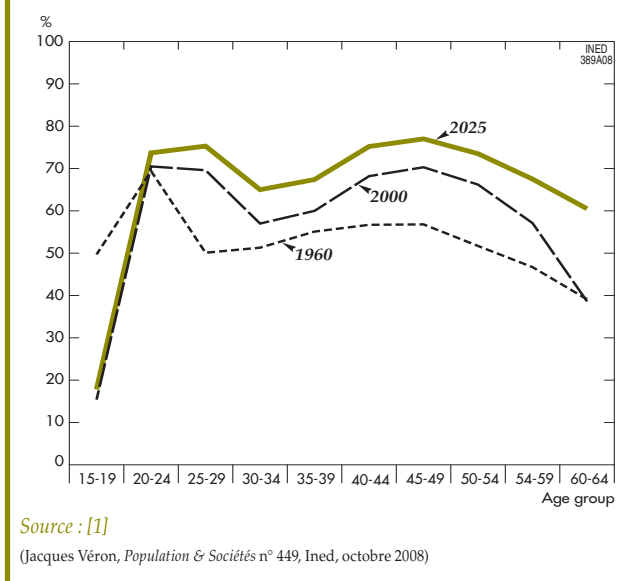
(Jacques Véron, *Population & Sociétés* n° 449, Ined, octobre 2008)

the future. Under the 2006 medium variant projections, based on very low fertility, it could reach 93% by 2050. While the youth dependency ratio should remain rela-

tively stable, the old-age dependency ratio could more than double by that year. Between 2000 and 2050, the number of over-65s per 100 under-15s could increase dramatically, from 119 to 458.

The economically active population – in employment or seeking employment – doubled in size between 1920 and the late 1960s, when it topped 52 million. It continued to increase rapidly over the three following decades, reaching 67 million in 2001. Since that year, the labour force has contracted and this trend is forecast to continue, down to a figure of 63 million in 2025. Over the last 30 years, the overall labour force participation rate has fallen rapidly, with a trend towards earlier retirement, for men especially. While female participation is increasing, age-specific trends in participation show that women still follow a traditional cycle (Figure 4). Although more women are working at ages 35-55, the curve still has two clear humps. The labour-force participation projections for 2025 do not foresee a major change in female behaviour, though they expect participation rates at intermediate ages to increase further.

Figure 4 – Female labour force participation rate, 1960, 2000 and 2005 (%)



◆ Are these changes inevitable?

Low fertility results in population decline. Combined with low mortality, it produces rapid demographic ageing. But are such consequences truly inevitable?

If mortality levelled off from 2006 and fertility rose immediately to replacement level in the same year and remained stable from then on, the Japanese population would show a short-lived increase, following by a fall, before stabilizing from 2070 at around 110 million inhabitants. This scenario is clearly unrealistic, however, even though surveys conducted at the time of the “1.53 shock” showed that the Japanese still ideally wanted 2.1 children. To achieve that ideal, however, they considered that measures were needed to develop a more child-oriented environment, to reduce their economic cost, to improve housing conditions and provide financial support such as parental leave [4]. In his analysis of the role of value changes on fertility, based

on a series of surveys, Makoto Atoh [6] observed the development of more liberal attitudes towards sexuality, marriage (women are not necessarily obliged to marry, for example) and divorce, though he saw no signs of stronger individualism since the mid 1970s. It would appear that fertility decline does not reflect a refusal to have children, but rather a change in attitude towards relations between parents and children, between husband and wife, and between men and women in general [6]. Late marriage, which brings a mechanical decline in fertility, is due, above all, to changes in the role and status of women. In theory, a future upturn in fertility remains possible. Are the slight increases in 2006 and 2007 the first signs of a more lasting trend?

If the recent projections provide an accurate forecast of demographic change, can the effects on the labour force be offset by changes in labour force participation? Room for manoeuvre is limited, with the projections already assuming that participation in the 60-64 age group will increase. For the over-65 age group, it is difficult to imagine a scenario very different from that used for the working-age population projections. If, in 2025, the overall female participation rate was equivalent to that of men (71% instead of 47% today), the number of active women would increase by 1.35 million, but the labour force would continue to shrink nonetheless.

The last resort is migration. Japan had around 2 million registered foreign residents in 2006, of whom 29% were Koreans, 27% Chinese, 15% Brazilians and 9% Philippines. The Japanese government is planning to introduce a less restrictive immigration policy, but as massive recourse to immigration appears out of the question, its demographic consequences will be limited.

Japan will thus have to adapt to demographic decline. Yet the greatest challenge in the years ahead will be the dramatic change in its population age structure.

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ABSTRACT

Under the medium variant of the demographic projections issued in 2006 by the National Institute of Population and Social Security Research in Japan, the Japanese population is set to fall more than 30 million by 2050. Rapid population ageing will also occur due to increasing life expectancy – already the world’s longest – and lowest-low fertility: 1.3 children per woman on average in 2006. The economically active population will continue to decline and the dependency ratio will rise dramatically as the proportion of over-65s increases. A limited upturn in fertility, measured opening of the Japanese borders or marginal behavioural changes in the working population are unlikely to have much impact on these projected trends.