

Population & Societies

1914-2014 : A century of change in the French population pyramid

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A population pyramid and its changes over time provide a visual account of a country's history. The French population pyramid has changed continuously since the outbreak of the First World War. Here, we will stop the clock every 20 years, and focus on the situation in 1914, 1934, 1954, 1974, 1994 and 2014.

On 1 January 1914, on the eve of the First World War, the population pyramid of France had a regular bell shape (see page 2). The indent at age 42 corresponds to the birth deficit due to the Franco-Prussian war of 1870-1871, aggravated by a sudden increase in infant mortality: some 23% of babies born in 1871 died before age one, versus 17% on average in the second half of the nineteenth century. In 1911, a very hot summer produced another infant mortality peak due to severe infantile diarrhoea, and this explains the dent in the 1914 pyramid at age 2.

Twenty years later, on 1 January 1934, the pyramid bears the scars of the 1914-1918 War, with a narrowing on the male side at ages 38 to 55. There are 25% fewer men than women at these ages, in contrast to all ages up to 35, where the sexes are balanced. One and a half million French soldiers were killed in the Great War. It was men born in 1894, and who were aged 20 in 1914 who paid the heaviest tribute: 24% lost their lives while in uniform.[1, 2]

Box. Demographic situation in 2013: a smaller natural surplus

According to INSEE, the French statistical office, the population of France on 1 January 2014 totalled 66.0 million, of which 63.9 million in metropolitan France (mainland France and Corsica), and 2.1 million in the overseas *départements*. [4] Population growth was fuelled by natural increase, which totalled 219,000 in metropolitan France (780,000 births minus 561,000 deaths), and by net migration (arrivals minus departures), estimated by INSEE at +50,000 (Table p.4).

Natural increase is tending to slow down – it was 20% higher five years ago in 2008 (264,000) – and there were 10,000 fewer births in 2013 than in 2012. After reaching 2.02 children per woman in 2010, the total fertility rate has fallen slightly, and stood at 1.97 in 2013.

Life expectancy at birth has risen, reaching 78.7 years for men and 85.0 years for women in 2013, versus 78.5 and 84.9 years in 2012. The number of deaths increased slightly, however, in 2013 (2,000 more than in 2012) as the population is ageing.

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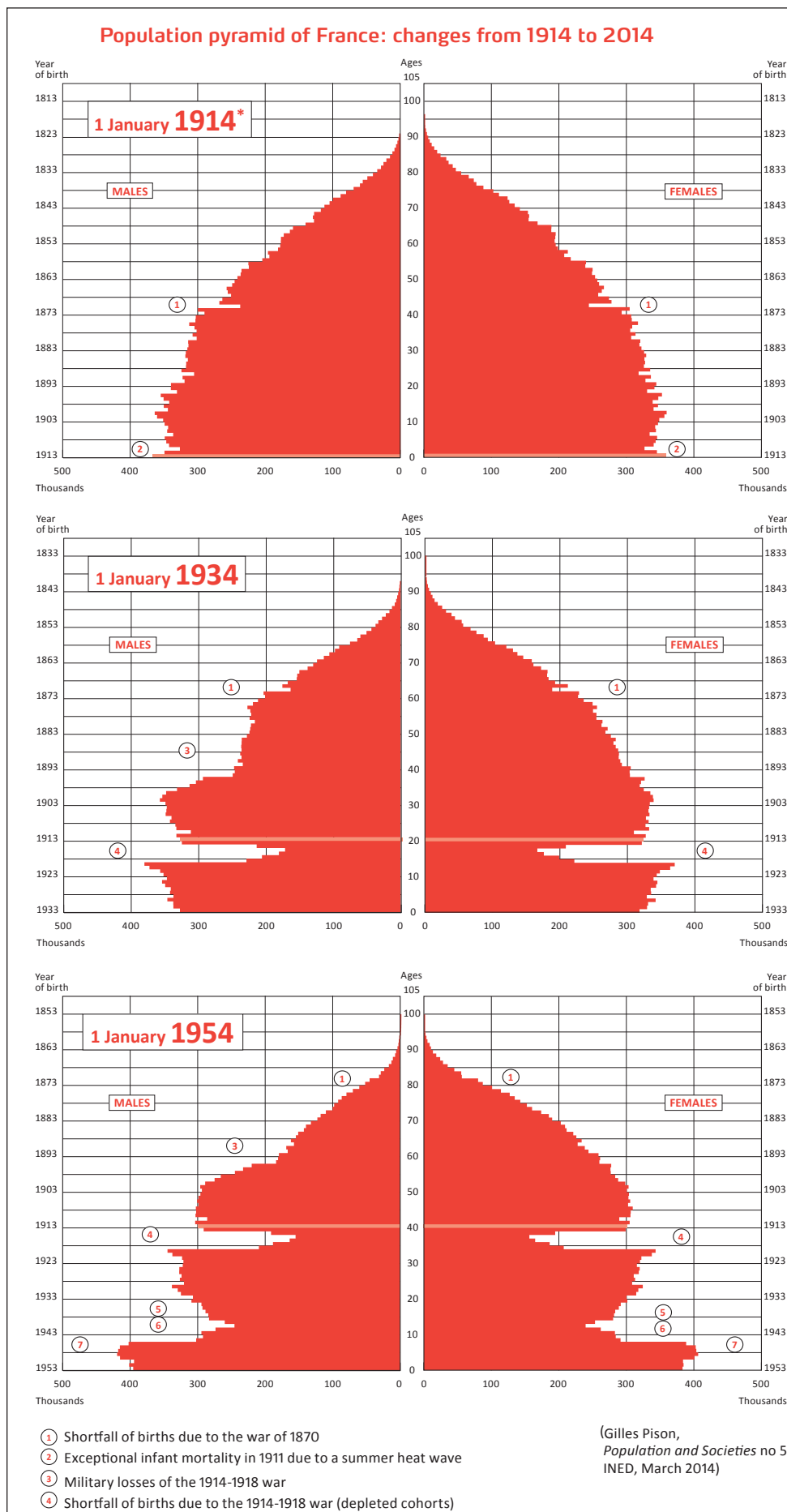
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The number of births halved between 1915 and 1919, and the 1934 population pyramid shows a large gash at ages 14-18, this time affecting both sexes.

When these depleted cohorts reached child-bearing age 25-30 years later, they produced a second gash which, while smaller than the first, is still highly visible on the 1954 pyramid. Fertility declined during the Second World War, between 1940 and 1942, and there is a dent in the 1954 pyramid at ages 11-13, although much smaller than that of 25 years earlier. This pyramid also shows the impact of another major change first observed eight years earlier: 1946 saw the start of the baby boom, with 200,000 more births in that year than in 1945. This surge in births lasted for almost 30 years, with annual births totalling 800-900,000, compared with 600-700,000 before the war. As the baby boomers grew older, the corresponding bump moved up the pyramid, but its effect was gradually reversed: after rejuvenating the population, it contributed to its ageing.

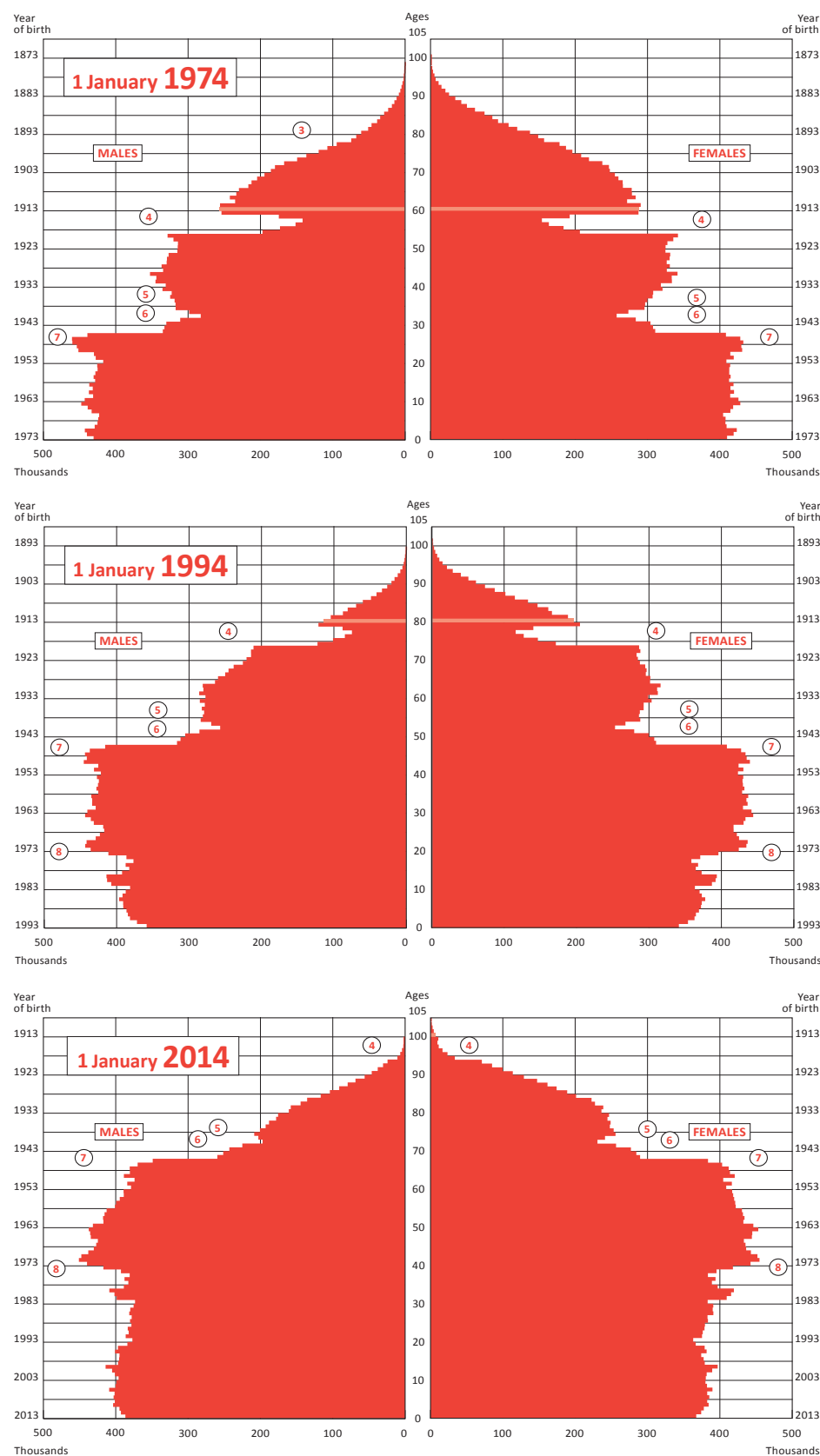
The number of births remained high until 1973, although the number of children per woman began falling from the mid-1960s. This was because the large baby-boom generations born 20 years earlier were now reaching reproductive age. After falling by around 20% from 1974, births then levelled off, and were later marginally offset by



migration (Table and Box on p.4).

The bottom half of the 2014 pyramid has a remarkably vertical profile, reflecting the relatively stable annual numbers of births over the last 40 years. The French situation is unique in the world, since the population pyramids of most developed countries – such as Germany for example – now have a very narrow base. In France, barring future catastrophe, this vertical base should eventually result in a pyramid as regular as that of 1 January 1914, at the eve of the First World War.

The effects of direct military losses in WWI disappeared from the pyramid after 80 years, and the shortfall in births after a century. It will be another few decades before the traces of WWII are effaced, and a half century before the last baby-boom cohorts born in the early 1970s die out and the corresponding bulge disappears from the pyramid.



- ⑤ Depleted cohorts reach childbearing age
- ⑥ Shortfall of births due to the war of 1939-1945
- ⑦ Start of baby boom
- ⑧ End of baby boom

Note: — : 1913 birth cohort aged below one on 1 January 1914, and aged 20, 40, 60, 80 and 100, respectively, on 1 January 1934, 1954, 1974, 1994 and 2014.

Source: INSEE [3]

(1) The population pyramid of 1 January 1914 published by INSEE corresponds to the population of France as defined by its borders of 1871, i.e. the current French territory minus Alsace and Moselle, which formed part of Germany at that time.[3] The pyramid for the current territory was obtained by increasing all cohorts by 5.6%, the ratio between the population of Alsace-Moselle and the rest of France in 1914.

Table. Demographic indicators 1950 to 2013, metropolitan France

	1950	1960	1970	1980	1990	2000	2005	2006	2007	2008	2009	2010	2011	2012(p)	2013(p)
Births (m)	858	816	848	800	762	775	774	797	786	796	793	802	793	790	780
Deaths (m)	530	517	540	547	526	531	528	516	521	532	538	540	535	559	561
Natural increase (m)	328	299	308	253	236	244	247	280	265	264	255	262	258	232	219
Net migration (m)	35	140	180	44	80	70	95	115	75	67	44	43	50	50	50
Total growth (m)	363	439	488	297	316	314	342	395	340	331	299	305	308	282	269
Adjustment ⁽¹⁾ (m)	-	-	-	-	-	94	94		-	-	-	-	-	-	-
Birth rate (t)	20.5	17.9	16.7	14.9	13.4	13.1	12.7	12.9	12.7	12.8	12.7	12.7	12.5	12.4	12.2
Death rate (t)	12.7	11.3	10.6	10.2	9.3	9.0	8.6	8.4	8.4	8.5	8.6	8.6	8.5	8.8	8.8
Infant mortality rate (r)	51.9	27.4	18.2	10.0	7.3	4.4	3.6	3.6	3.6	3.6	3.7	3.5	3.3	3.3	3.5
Total fertility rate (e)	2.93	2.73	2.47	1.94	1.78	1.87	1.92	1.98	1.96	1.99	1.99	2.02	2.00	1.99	1.97
Life expectancy:															
Male (a)	63.4	67.0	68.4	70.2	72.7	75.3	76.8	77.2	77.4	77.6	77.8	78.0	78.4	78.5	78.7
Female (a)	69.2	73.6	75.9	78.4	80.9	82.8	83.8	84.2	84.4	84.4	84.5	84.7	85.0	84.9	85.0
Marriages (m)	331	320	394	334	287	298	276	267	267	259	245	245	231	240	225
Marriage rate (t)	7.9	7.0	7.8	6.2	5.1	5.0	4.5	4.3	4.3	4.2	3.9	3.9	3.7	3.8	3.5
Population ⁽²⁾ (m)	42,010	45,904	51,016	54,029	56,893	59,267	61,400	61,795	62,135	62,466	62,765	63,070	63,379	63,660	63,929
Under 20 ⁽²⁾ (m)	12,556	14,665	16,748	16,419	15,632	15,068	15,280	15,315	15,338	15,369	15,407	15,440	15,485	15,534	15,606
65 and over ⁽²⁾ (m)	4,727	5,288	6,174	7,541	8,036	9,561	10,163	10,208	10,301	10,421	10,540	10,667	10,978	11,295	11,619
Under 20 ⁽²⁾ %	29.9	31.9	32.8	30.4	27.5	25.4	24.9	24.8	24.7	24.6	24.5	24.4	24.4	24.4	24.4
65 and over ⁽²⁾ %	11.3	11.5	12.1	14.0	14.1	16.1	16.6	16.5	16.6	16.7	16.8	16.9	17.3	17.7	18.2

(a) years – (e) children per woman – (m) in thousands – (p) provisional – (r) per 1,000 live births – (t) per 1,000 population.

(1) Population estimates for 1990-2005 were adjusted to establish accounting consistency between the 1990, 1999 and 2006 censuses (see Vanessa Bellamy and Catherine Beaumel, 2014 [4]).

(2) At year-end.

Source: INSEE. Division des enquêtes et études démographiques (<http://www.insee.fr>).

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Net migration remains low in France (0.8‰), below the level of many other European countries: it stood at 3‰ in the United Kingdom in 2012, 5‰ in Germany and Austria, 6‰ in Italy, 9‰ in Switzerland and 10‰ in Norway.

Natural increase (3.4‰ in 2013) should continue to slow in coming years, and the population pyramid already gives the shape of future trends: the number of women of childbearing age will remain stable, and the number of births probably likewise. Conversely, as the baby-boom generations grow old, the number of deaths will increase, eventually converging with the number of births.[5]

Trends in net migration are difficult to predict, but whatever its future level (even moderate), it is likely to overtake natural increase within a generation, becoming the main contributor to population growth. This will not be the result of high immigrant fertility or of a specific migration policy, but rather the countershock of the baby-boom era, as the large baby-boom generations reach old age and death.

References

- [1] Jacques Vallin, *La mortalité par génération en France depuis 1899*, Paris, INED, Cahier, 63, 1973, 484 p.
- [2] François Héran, "Lost generations: the demographic impact of the Great War", *Population and Societies*, 510, April 2014, 4 p. (forthcoming).
- [3] Fabienne Daguët, *Un siècle de démographie française*, Paris, Insee Résultats, 434-435, 1995, 306 p.
- [4] Vanessa Bellamy and Catherine Beaumel, "Bilan démographique 2013 : trois mariages pour deux Pacs", *Insee Première*, 1482, January 2014.
- [5] Olivier Chardon and Nathalie Blanpain, *Projections de population 2007-2060 pour la France métropolitaine*, Insee Résultats, 117, Société, 2010.

Abstract

On 1 January 1914, the population pyramid of France had a regular bell shape. It was then dented by military losses and a shortfall of births during the First World War. Today, the French population pyramid is returning to a more regular shape, and the century-long scars of WWI have practically disappeared.

