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Why is French life expectancy increasing more slowly?

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Life expectancy has progressed more slowly in France in recent years. Is this a temporary phenomenon, or does it signal a new long-term pattern of change? Gilles Pison analyses this question and examines how trends in France compare with those observed in other developed countries.

Metropolitan France gained around 184,000 inhabitants in 2018 (+0.3%), reaching a total population of almost 65 million in early 2019 (Table) [1]. Natural growth – the surplus of births over deaths – is continuing its downward trend. It has fallen by almost 150,000 (more than 55%) in the last ten years, from 264,000 in 2008 to 118,000 in 2018. This slowdown reflects a 75,000 decrease in the number of births and an increase of a similar scale in the number of deaths.

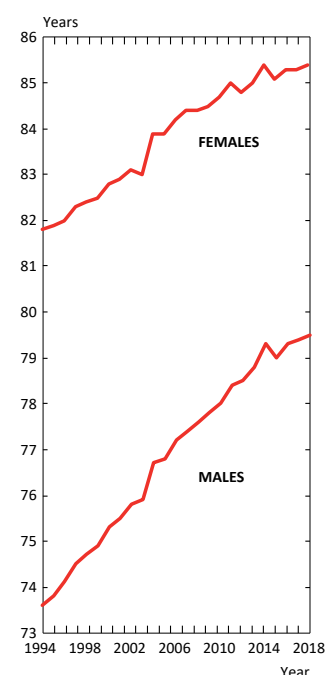
Deaths exceed 600,000 for the first time since 1945

There were 601,000 deaths in metropolitan France in 2018, topping the threshold of 600,000 for the first time since the Second World War. Numbers of deaths regularly exceeded this threshold in the past, notably throughout the nineteenth century and in the first half of the twentieth century. The last year when more than 600,000 deaths were recorded was 1945 (644,000). In 1946, the number plummeted by almost 100,000, to 546,000, then fluctuated from year to year between 500,000 and 550,000 [2]. It was not until 72 years later, in 2018, that deaths topped 600,000 once again. But the population has changed a great deal since then. To begin with, it has increased in size by more than half (65 million in 2018 versus 40 million

in 1945). It is also older, with a proportion of over-65s that has practically doubled, from 11% in 1945 to 20% in 2018 (Table).

Calculating life expectancy provides a means to eliminate components of mortality linked to variations in population size and age distribution, so that only fluctuations linked to changes in the risk of dying are taken into account. Returning to the situation today, life expectancy at birth reached 79.5 years for males and 85.4 years for females in 2018, versus 79.4 years and 85.3 years, respectively, in 2017. This represents an increase of 0.1 years for men and women alike, a very modest gain.

Figure 1. Life expectancy at birth in France since 1994



G. Pison, *Population & Societies* no. 564, INED, March 2019.

Source: INSEE [1]

* French Museum of Natural History and French Institute for Demographic Studies.

The increase in life expectancy has slowed in recent years (Figure 1), with a rise of just 0.7 years for males and 0.4 years for females over the last five years. What are the factors behind this slowdown in progress, affecting women especially?

Why is life expectancy increasing more slowly?

The last five years have been marked by three especially severe seasonal flu epidemics, each associated with around 20,000 excess deaths, mainly among older adults, of which 15,000 are directly attributable to flu [3]. Seasonal flu epidemics are nothing new, however. When they are particularly deadly, like those of recent years, they reduce life expectancy by 0.1 to 0.3 years, but the decrease is temporary and has no impact on long-term trends. However, the effect of the most recent flu epidemics on life expectancy seems to be associated with a slowdown in progress linked to other causes.

It is useful to examine recent changes in relation to more long-term trends. Since the mid-twentieth century, life expectancy at birth has increased by three months each year on average in France, rising from 66.4 years for both sexes in 1950 to 82.5 years in 2018. This upward trend is due mainly to progress in reducing adult mortality, especially at advanced ages when most deaths occur. Child mortality, whose decline was a key driver of life expectancy increase from the late eighteenth to the mid-twentieth centuries, has practically no effect today, as it has now reached an extremely low level.

In the mid-twentieth century, a large share of deaths in adulthood and old age were due to infectious diseases, whose decline has contributed strongly to the increase in adult life expectancy. But, as is the case for child deaths, the share of these diseases in overall mortality has fallen sharply, so any additional gains resulting from their further decline will be small. Cardiovascular diseases and cancers are now the leading causes of death (Figure 2). It is progress in combating these diseases that has reduced mortality levels among adults and older adults since the 1970s and driven the steady increase in life expectancy.

Mortality from diseases of the heart and circulatory system has plummeted in the last half century thanks to the “cardiovascular revolution”, with major advances in the prevention and management of these pathologies [4]. Previously on the increase, cancer mortality is now declining thanks to earlier diagnosis, improved treatments, and a reduction in risk behaviours such as smoking. The slower increase in life expectancy over the last decade is perhaps a sign that the benefits of the cardiovascular revolution have now reached a plateau and that future progress may depend increasingly on the fight against cancers, now the leading cause of death. While progress has indeed been achieved, the effects in terms of life

expectancy have been less spectacular than those linked to the cardiovascular revolution. Male cancer mortality has dropped substantially, and the decrease is ongoing. Female cancer mortality is lower than that of males, but it has fallen more slowly and even levelled off in recent years. This is partly due to an increase in smoking-related cancers among the generations of women now aged 50 and above who took

up smoking between 1950 and 1980 and who are paying the price several decades later [4].

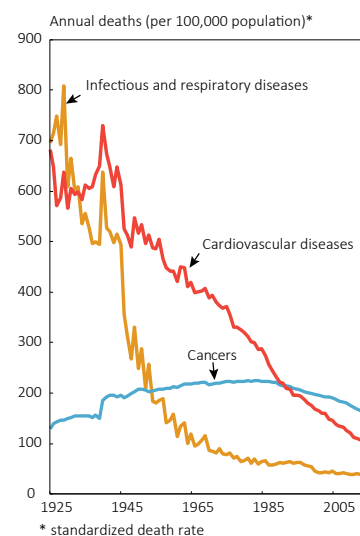
French women remain high in the European rankings

A similar pattern of slower life expectancy increase is occurring elsewhere in Northern and Western Europe (see Figure 3 for Sweden, Denmark, Germany, and the United Kingdom). As in France, the slowdown is more marked for females than for males. Among Swedish women it began some time ago; in 1980, their life expectancy was among the highest in Europe, but they have since been overtaken by French, Spanish, and Italian women, who now top the rankings. This is partly because Scandinavian women began smoking earlier than women elsewhere, so they were affected earlier by an increase in smoking-related cancer mortality.

French women are following the same pattern but with a time lag that corresponds to their later mass adoption of smoking. With a life expectancy of more than 87 years, Japanese women are the current world-record holders (Figure 3). They show that scope for further progress still exists before reaching a possible biological limit. As for French men, they remain low in the rankings despite the substantial progress achieved.

In the United States, life expectancy has levelled off and even decreased in recent years, for both sexes. Here again, the decline is due to increased smoking-related mortality, but also to public health issues, such as widespread obesity and an epidemic of adult opioid

Figure 2. Mortality trends by cause of death in France, 1925–2015



G. Pison, *Population & Societies* no. 564, INED, March 2019.

Sources: INSERM-CepiDc; Breton et al., 2018 [4]

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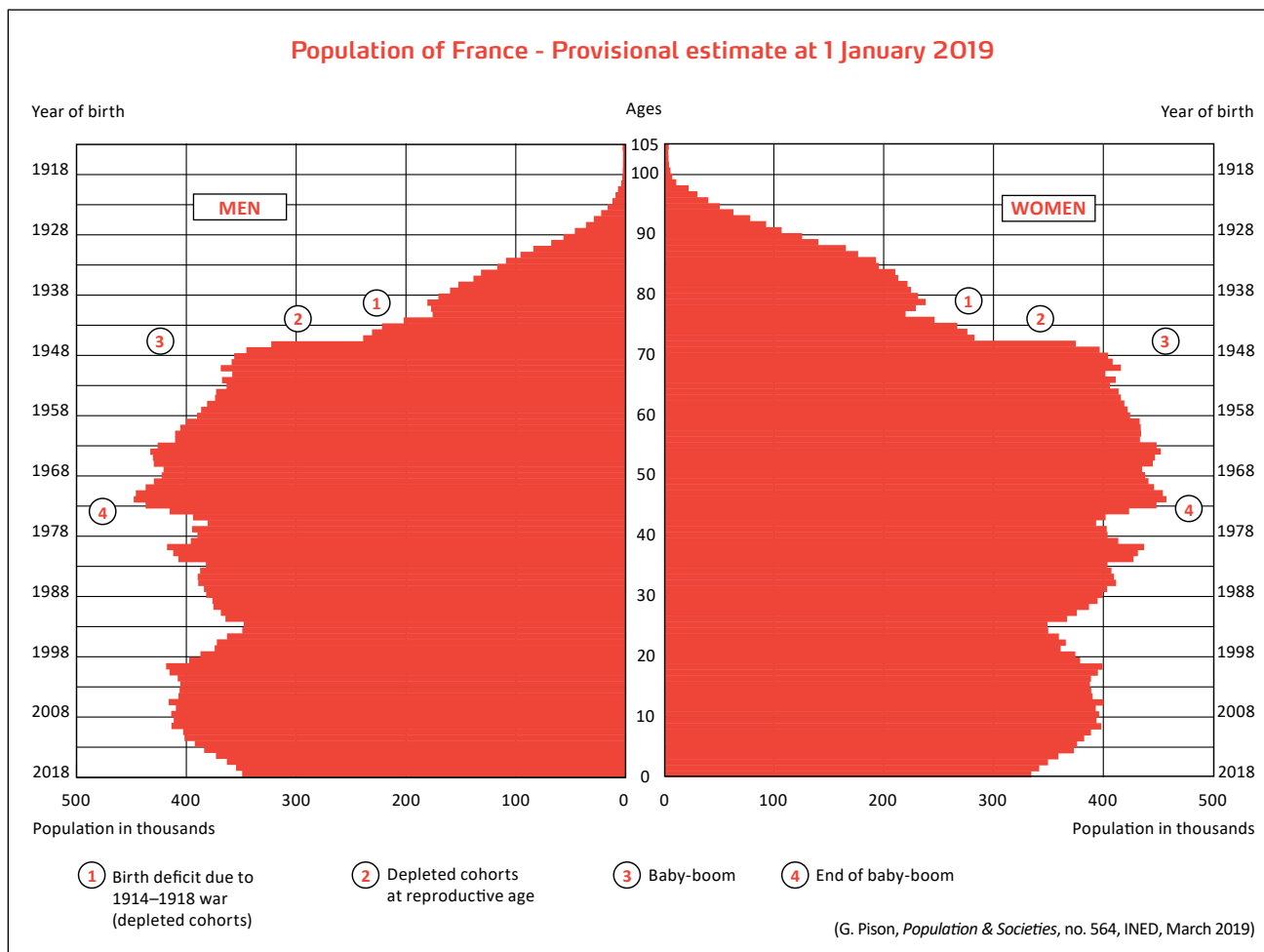


Table. Demographic indicators 1950 to 2019, metropolitan France

	1950	1960	1970	1980	1990	2000	2010	2011	2012	2013	2014	2015(p)	2016(p)	2017(p)	2018(p)
Births (m)	862	820	850	800	762	775	802	793	790	782	781	760	745	730	719
Deaths (m)	534	521	542	547	526	531	540	535	559	558	547	582	581	594	601
Natural increase (m)	328	299	308	253	236	244	262	258	231	223	234	179	164	137	118
Net migration (m)	35	140	180	44	80	70	43	47	91	107	39	52	66	79	66
Total growth (m)	363	439	488	297	316	314	305	305	322	331	273	231	230	216	184
Adjustment ⁽¹⁾ (m)	-	-	-	-	-	94	-	-	-	-	-	-63	-80	-96	-97
Birth rate (t)	20.6	17.9	16.7	14.9	13.4	13.1	12.8	12.5	12.4	12.2	12.2	11.8	11.5	11.3	11.1
Death rate (t)	12.8	11.4	10.7	10.2	9.3	9.0	8.6	8.5	8.8	8.7	8.5	9.0	9.0	9.2	9.3
Infant mortality rate (r)	52.0	27.4	18.2	10.0	7.3	4.4	3.5	3.3	3.3	3.5	3.3	3.5	3.5	3.6	3.6
Total fertility rate (e)	2.95	2.74	2.48	1.94	1.78	1.87	2.02	2.00	1.99	1.97	1.97	1.92	1.89	1.86	1.84
Life expectancy:															
Males (a)	63.4	67.0	68.4	70.2	72.7	75.3	78.0	78.4	78.5	78.8	79.3	79.0	79.3	79.4	79.5
Females (a)	69.2	73.6	75.9	78.4	81.0	82.8	84.7	85.0	84.8	85.0	85.4	85.1	85.3	85.3	85.4
Marriages ⁽²⁾ (m)	331	320	394	334	287	298	245	231	240	233	235	230	227	228	229
Marriage rate (t)	7.9	7.0	7.8	6.2	5.1	5.0	3.9	3.7	3.8	3.6	3.7	3.6	3.5	3.5	3.5
Population ⁽³⁾ (m)	42,010	45,904	51,016	54,029	56,841	59,267	63,070	63,376	63,698	64,028	64,301	64,469	64,618	64,725	64,812
Under 20 ⁽²⁾ (m)	12,710	14,991	16,772	16,380	15,605	15,068	15,440	15,458	15,513	15,589	15,652	15,646	15,598	15,536	15,445
65 and over ⁽²⁾ (m)	4,796	5,347	6,598	7,466	8,039	9,561	10,667	10,973	11,302	11,649	11,989	12,311	12,595	12,876	13,133
Under 20 ⁽²⁾ %	30.3	32.7	32.9	30.3	27.5	25.4	24.5	24.4	24.4	24.3	24.3	24.3	24.1	24.0	23.8
65 and over ⁽²⁾ %	11.4	11.6	12.9	13.8	14.1	16.1	16.9	17.3	17.7	18.2	18.6	19.1	19.5	19.9	20.3

(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 2000 and for the years 2015–2018 were adjusted to establish accounting consistency between the 1999 and 2006 censuses (for 2000) and between the censuses of 2014 and the following years for the years 2015–2018 (see Sylvain Papon and Catherine Beaumel, 2019 [1]).

(2) Including same-sex marriages from 2013.

(3) At year-end.

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

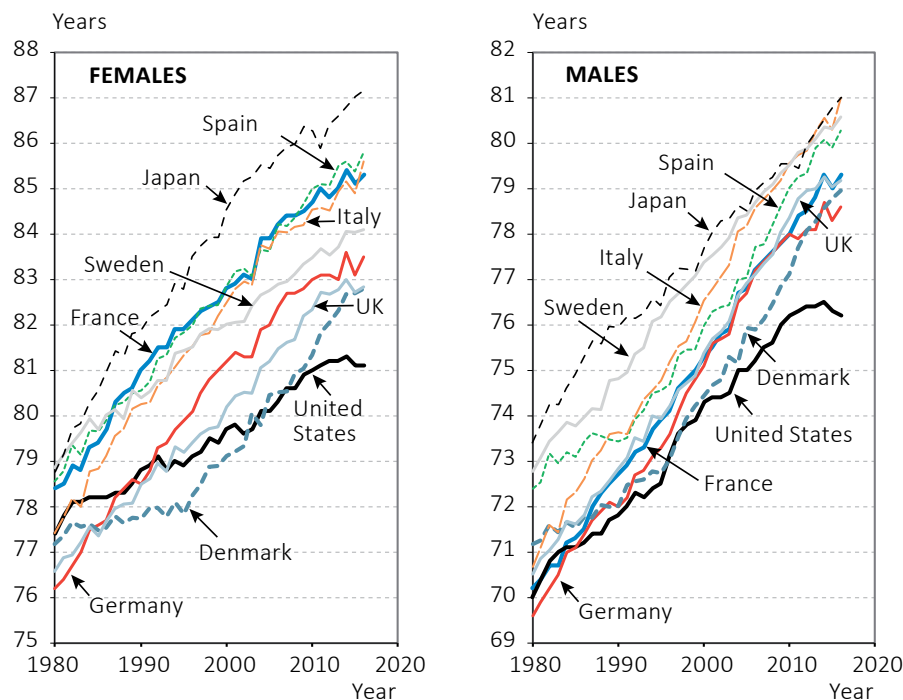
drug abuse. The United States also has an inequalitarian healthcare system that makes it difficult for the poorest people to access the care they need. Although it ranked among the world leaders in the 1960s, many other developed countries – European countries especially – have now overtaken the United States in terms of life expectancy. In 1980, life expectancy in France and the United States were identical for males, with a one-year advantage for French females; by 2017, the US lag had reached more than four years for females and above three years for males.

It is unlikely that the countries of Europe, France in particular, will experience a similar decline in life expectancy, as their healthcare systems are more protective and egalitarian than that of the United States. But if life expectancy is to increase in France in the coming years, cancer mortality must continue to fall for males and resume its decline for females. Over the longer term, as was the case for infectious mortality, progress in combating cardiovascular diseases and cancers will eventually reach a ceiling. Beyond that point, further progress will depend upon new therapeutic advances to treat neurodegenerative diseases (Alzheimer’s disease, Parkinson’s disease, etc.) and upon new medical and social approaches to ill health.

References

- [1] Papon S., Beaumel C., 2019, “Bilan démographique 2018. La fécondité baisse depuis quatre ans”, *Insee Première*, 1730, January.
- [2] Pison G., Toulemon L., 2016, “The number of deaths in France will increase over the coming years”, *Population & Societies*, 531, March.

Figure 3. Life expectancy trends since 1980 in selected European countries, Japan, and the United States



G. Pison, *Population & Societies* no. 564, INED, March 2019.

Sources: INSEE, CDC, Human Mortality Database

[3] Équipes de surveillance de la grippe [flu monitoring teams], 2018, “Surveillance de la grippe en France, saison 2017-2018”, *Bulletin épidémiologique hebdomadaire*, 34, pp. 664–674.

[4] Breton D., Barbieri M., d’Albis H., Mazuy M., 2018, “Recent demographic developments in France: Seasonal patterns of births, deaths, unions, and migration”, *Population, English Edition*, 73(4), forthcoming.

Abstract

The seasonal flu epidemics have been especially severe in recent years, but the slower increase in life expectancy may also signal a more long-term pattern of change. Cancers have become the leading cause of death in France, and cancer mortality is declining more slowly than mortality from cardiovascular diseases, which has fallen very quickly in recent decades, thereby contributing strongly to increased life expectancy.

Keywords

France, population, mortality, cancers, cardiovascular diseases, flu epidemic, life expectancy, international comparisons



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