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Low fertility: context, causes and consequences

Dermot Grenham



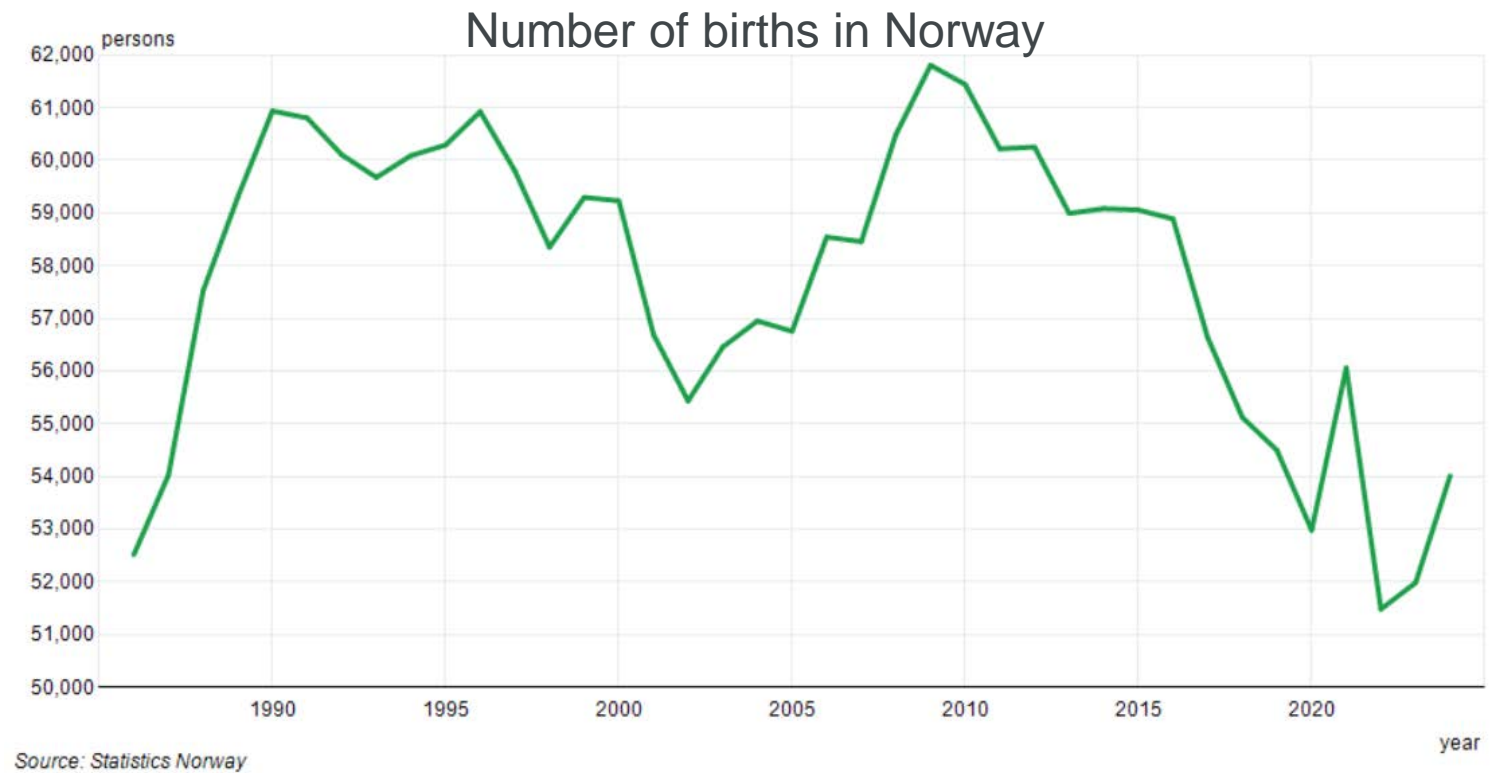


"Make more children," the Norwegian Prime Minister asked in her 2019 New Year's speech.

Too few children are born in this country for the Norwegian welfare model to continue, according to Prime Minister Erna Solberg (Conservative Party). She asked Norwegians to have more children.

"I don't think I need to explain how this is done. Nor will I make any orders," said Prime Minister Erna Solberg.







Meloni's government has proposed several measures to encourage families to have more children, aiming for at least 500,000 births every year by 2033. She has highlighted the importance of addressing the underlying issues, such as affordable childcare, low pay, and unstable work, which contribute to the declining birth rate.

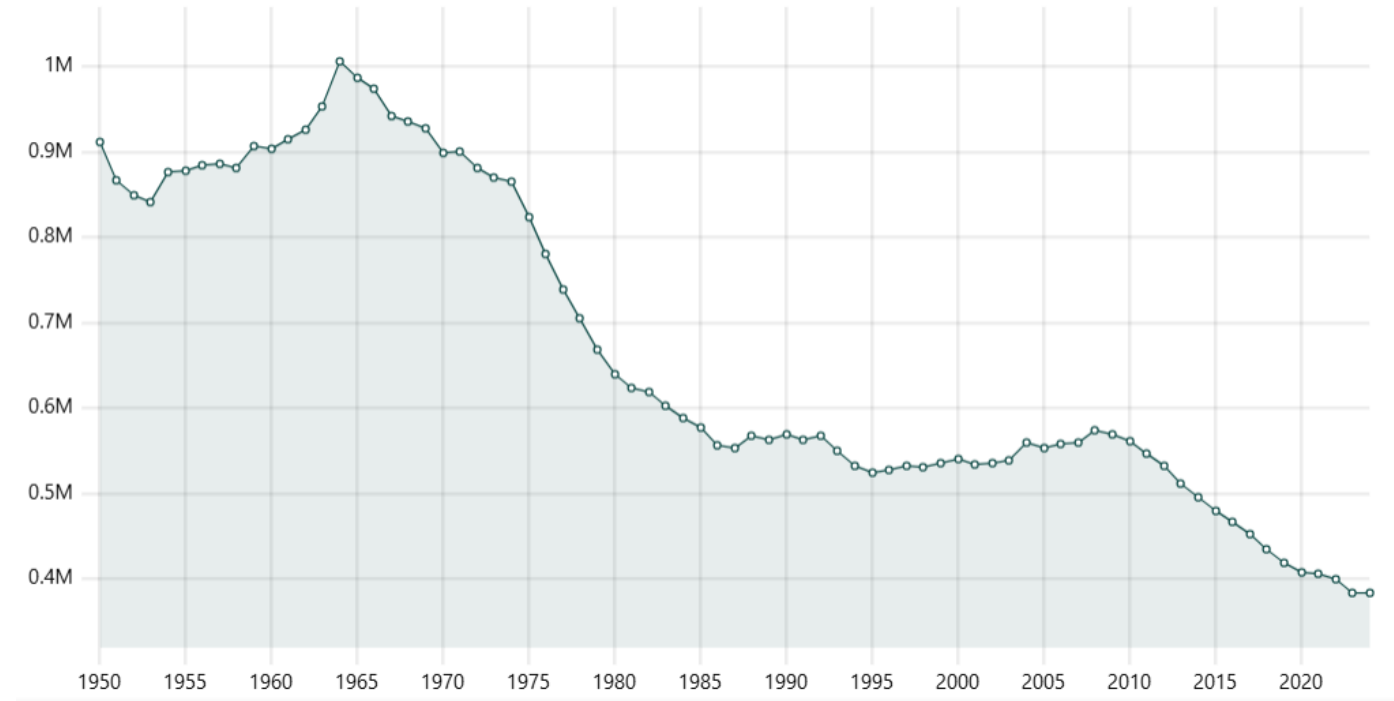
It is a priority for her government to increase the birth rate and encourage women to have more babies “for the simple reason that we want Italy to have a future again”.





Historic Population Births in Italy (1950-2024)

Italy has seen a decrease of births since the 1950's. From 912,801 to 384,703 yearly births, a total decrease of -57.85%.



www.database.earth



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A number of countries are experiencing an alarming *decline in the birthrate* as a result of today's frenetic pace, fears about the future, the lack of job security and adequate social policies, and social models whose agenda is dictated by the quest for profit rather than concern for relationships.





There are not enough people. I can't emphasize this enough, there are not enough people.

Low and rapidly declining birth rates are one of the biggest risks to civilization.

If people don't have more children, civilization is going to crumble. Mark my words.

Singapore (and many other countries) are going extinct.



Dependency and depopulation?

Confronting the consequences of a new demographic reality

January 2025

This report first explores the demographic shifts driven by falling fertility rates, until recently a trend primarily of interest to demographers and **actuaries** but now a topic of global conversation.

Families across the globe are having fewer and fewer children. In much of the world, fertility rates have fallen below the replacement rate required to maintain a stable population, and, despite increasing longevity, some countries have already started to see population decline.





The baby bust: how Britain's falling birthrate is creating alarm in the economy

4 July 2024



Britain's birth rate has crashed. It is likely to recover

Immigrants to the rescue, again

29 October 2024



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The Prime Minister says growing the economy is his "number one mission", but insisted that did not stretch to telling people to have more children.

"I think there are a number of ways of growing the economy," said Sir Keir.

"When I said local growth plans I actually had in mind plans led by mayors, local businesses, local representatives, not the birth plan.

"So I think growing the economy can be solved by local growth plans, by stabilising the economy and all the measures we've already set out - but I'm not going to lead a, sort of, birth plan.

He added: "I've spent my whole time saying I'm not going to tell people how to live their lives - I'm not going to start by dictating whether they should or shouldn't have children."



The birth rate challenge: ideas from the left

The progressive case for making it
easier to have children

SMF

Social Market
Foundation

We put this collection together to counter the narrative that the UK's demographic challenges and support for policies that help people to have children are the concerns of the right alone. We believe there is nothing intrinsically right-wing about wanting to make it easier for people to have the children they want.

On the contrary, the societal and economic benefits have the potential to be highly progressive. Both the Social Market Foundation and Boom are non-partisan organisations, but in this series of essays, we have consciously sought out people from the left and centre of politics to demonstrate the breadth of concern on this issue, and how it fits with progressive values.



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Agenda of the Present

- Introduction to low fertility
- Causes of low fertility
- Consequences of low fertility
- Responding to low fertility



Introduction to low fertility



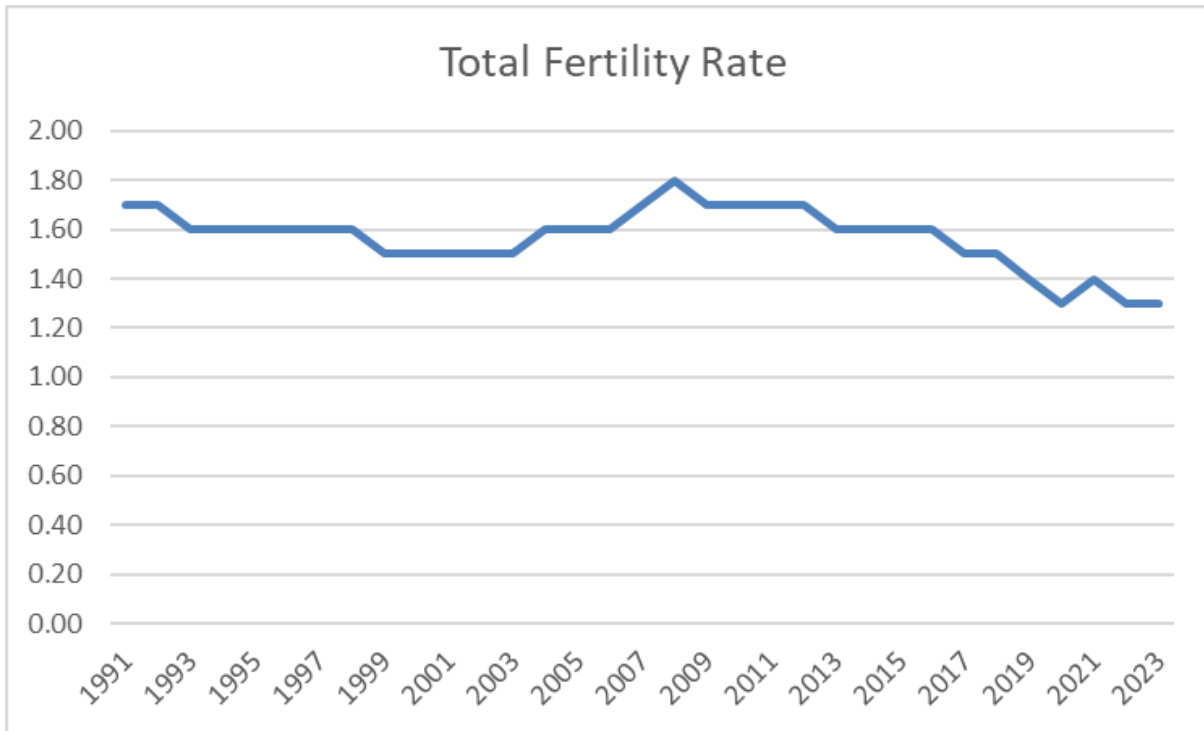
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Scotland's fertility rate

The total fertility rate is the number of children that a woman would have if she had the same fertility rate at each age that women of those ages have this year.

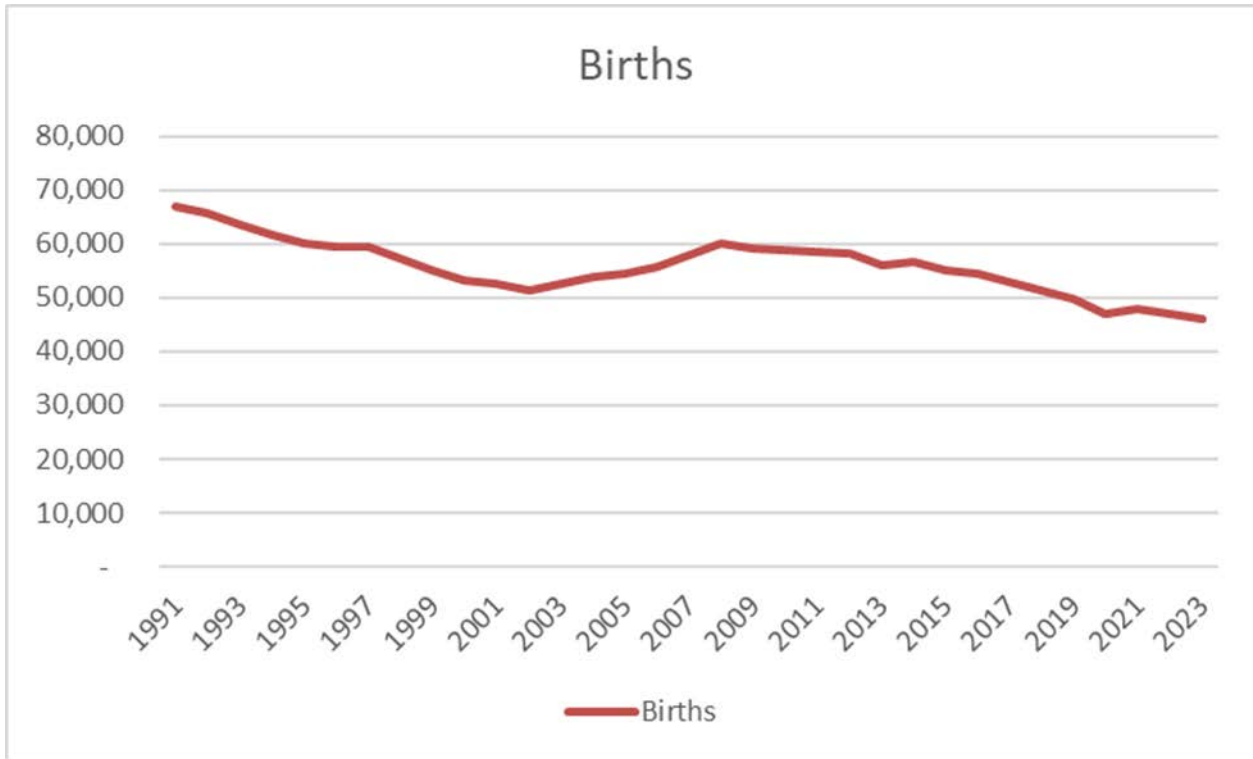
This may not be what actually happens.

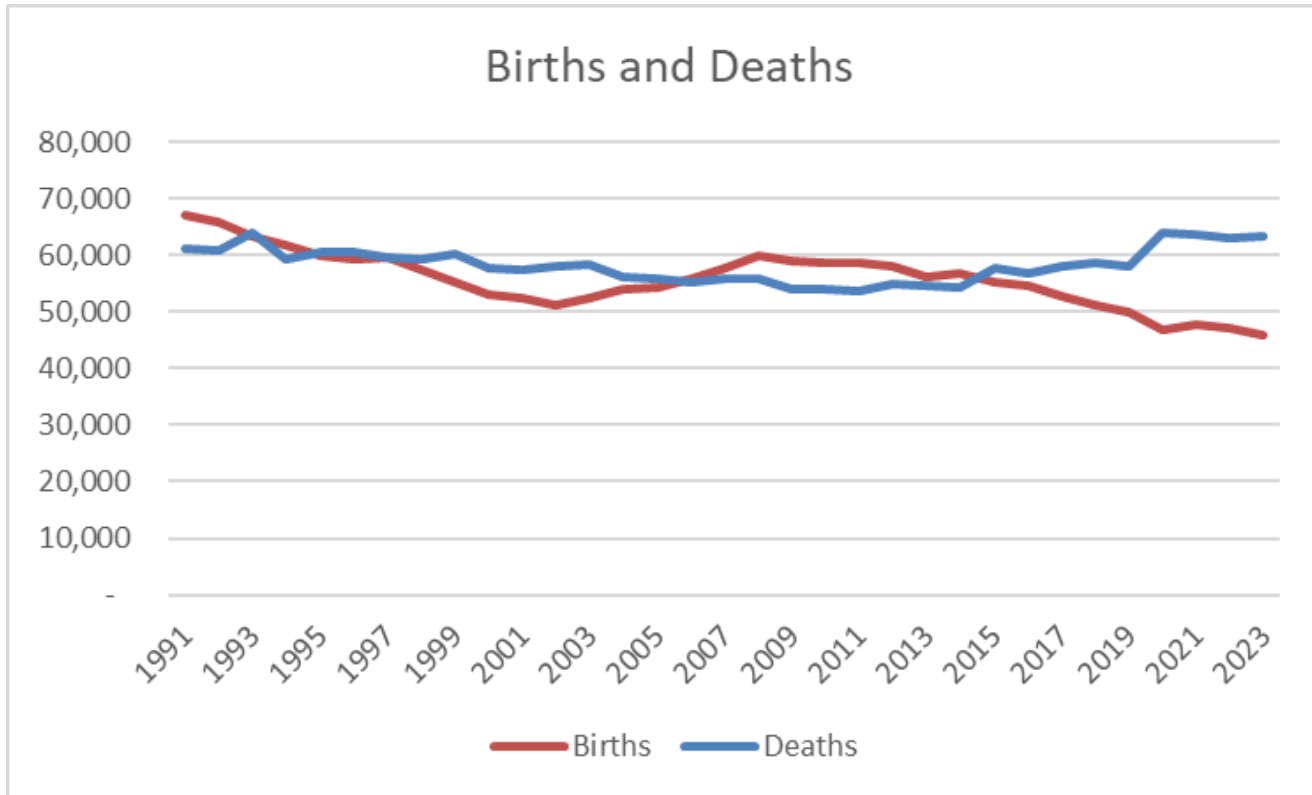
Replacement rate is around 2.1



Births in Scotland

Births in Scotland have fallen from almost 70,000 at the start of the 1990s to less than 50,000 in recent years.





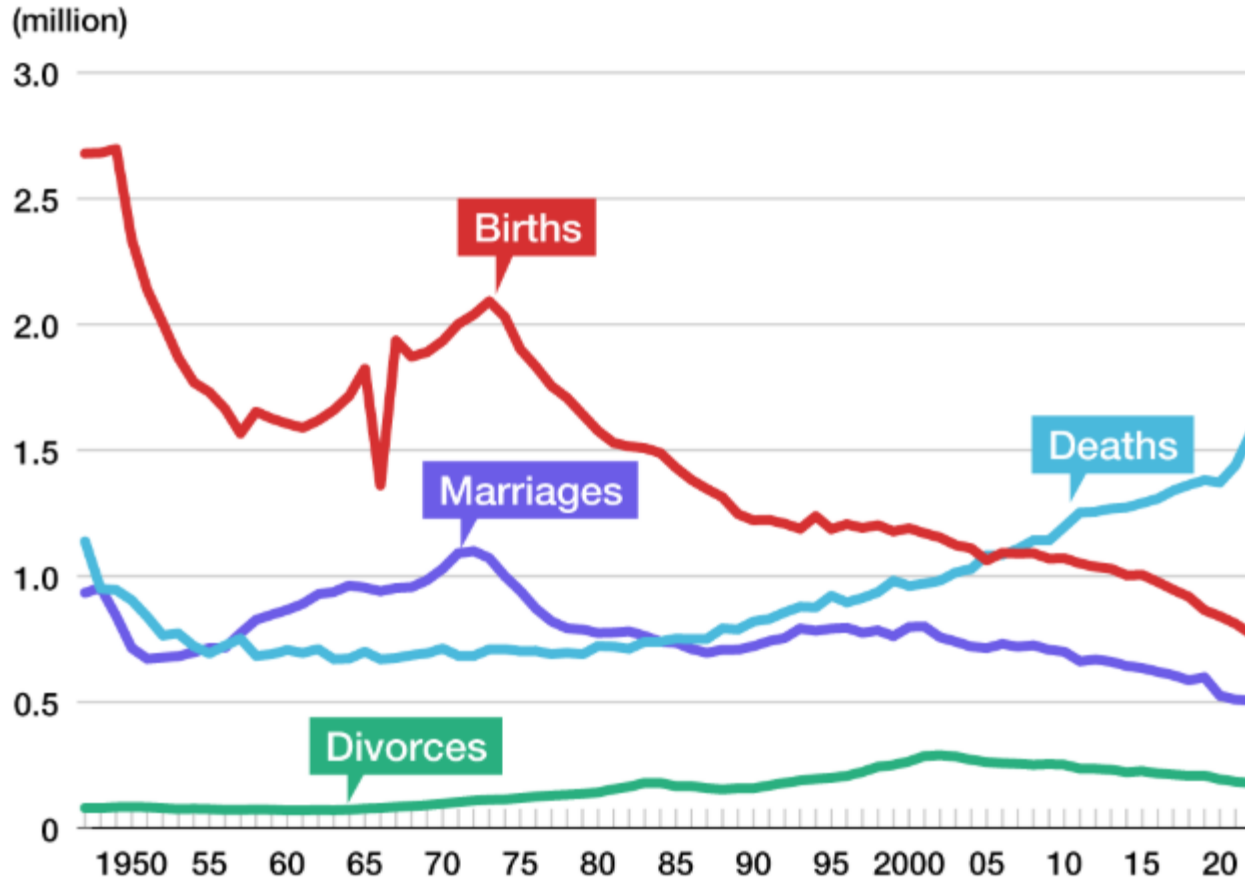
Natural increase in Scotland

Over the past 10 years Scotland has had more deaths than births.

The population of Scotland is increasing due to immigration.



Births/Deaths and Marriages/Divorces by Year



Created by Nippon.com based on demographic statistics from the Ministry of Health, Labor, and Welfare.

nippon.com

The situation in Japan

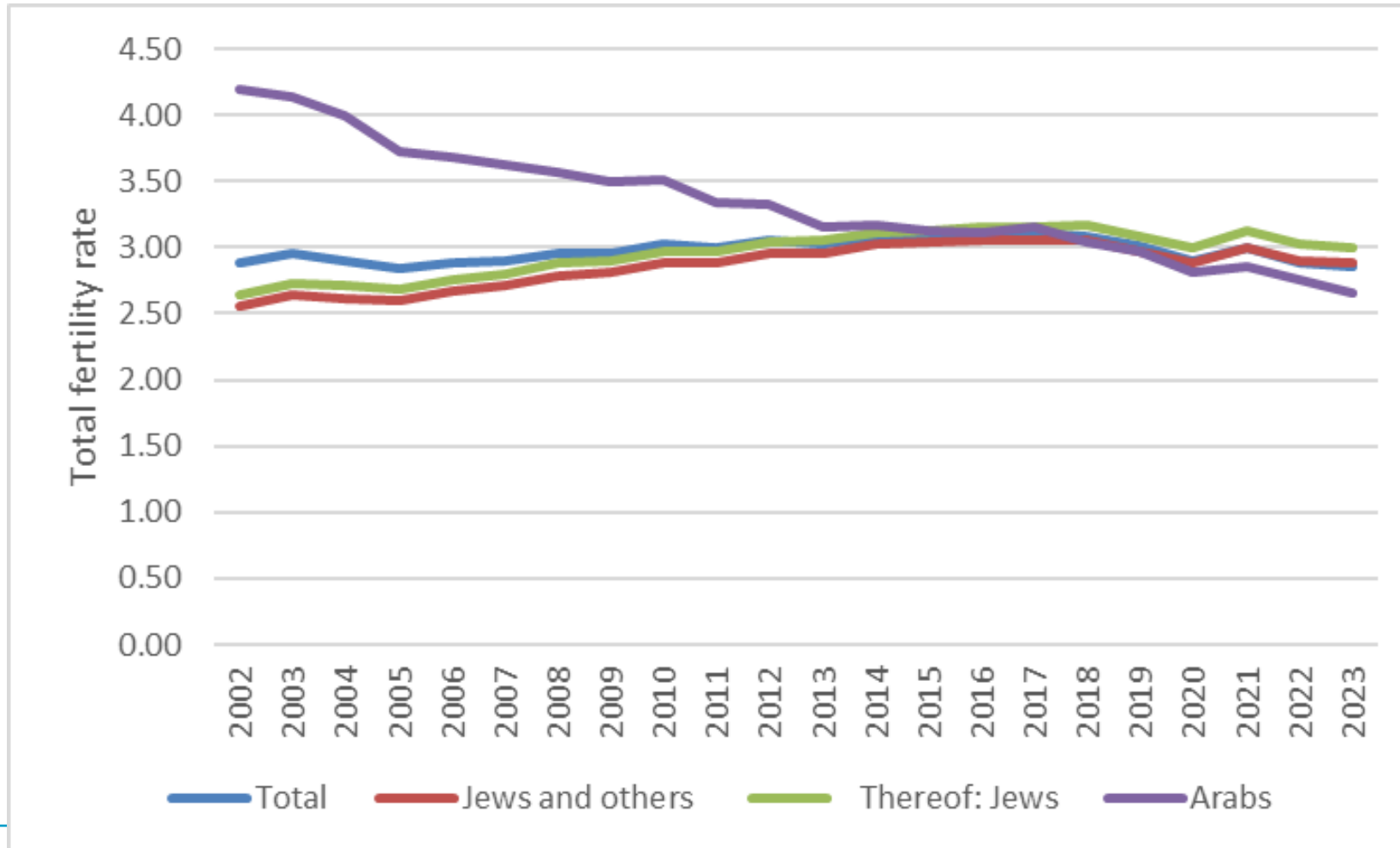
Births in Japan have fallen from over 2.5 million after WWII to less than 800,000 now.

Japan's population has fallen from 127 million in 2000 to 123 million now.

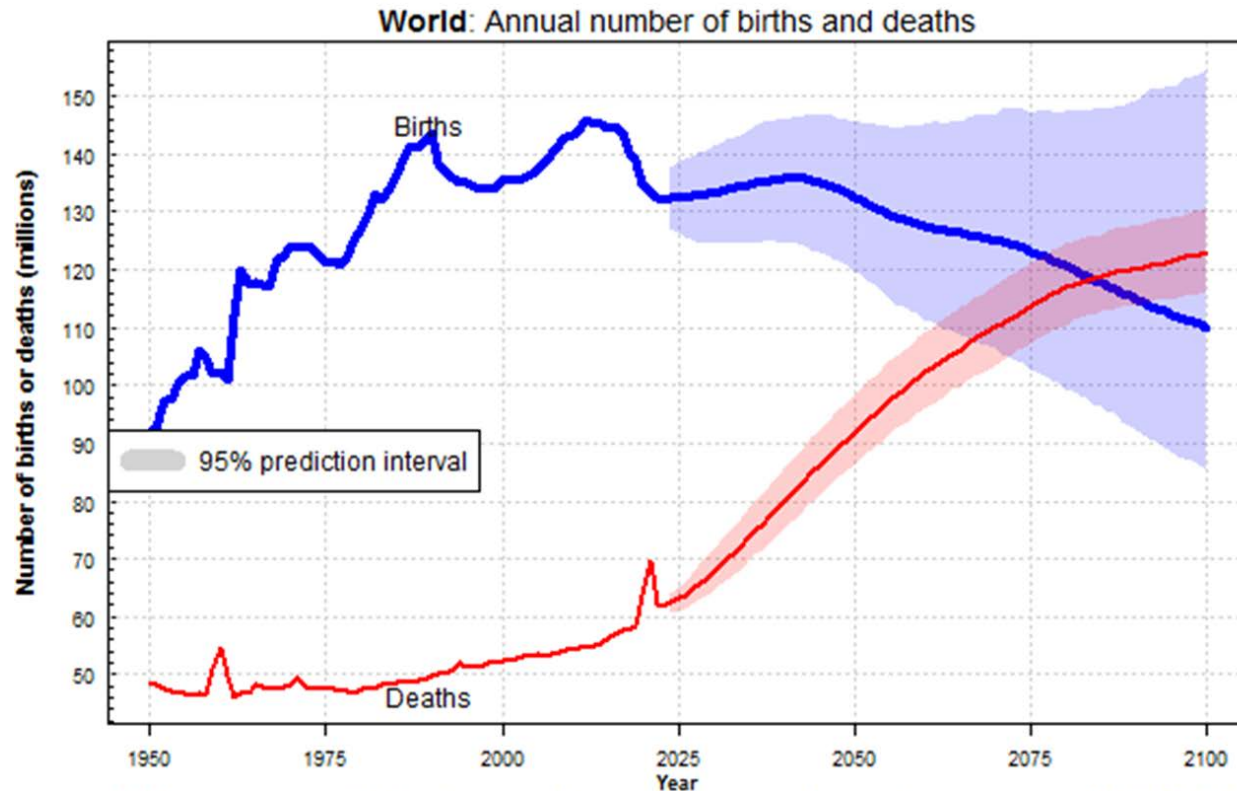


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Israeli fertility is an outlier amongst OECD countries



And globally...



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United Nations, DESA, Population Division. *World Population Prospects 2024*. <http://population.un.org/wpp/>

Deaths are expected to exceed births by around 2080. No immigration will offset this.

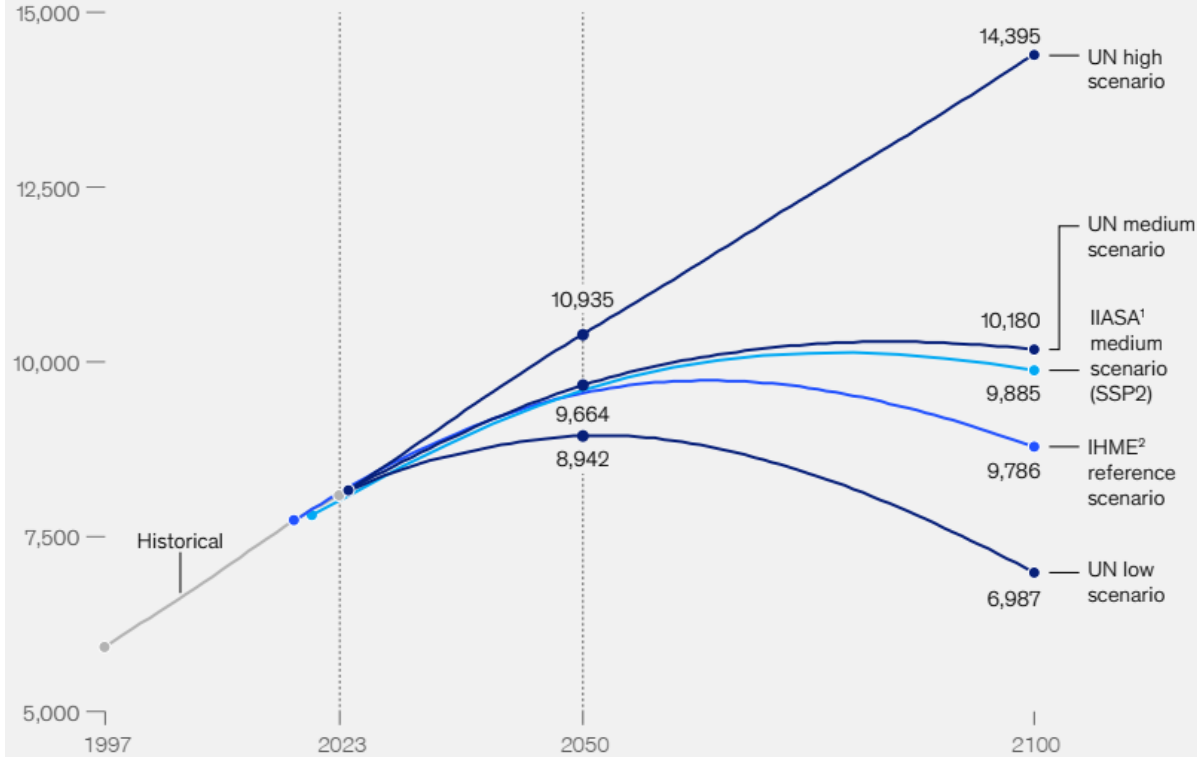
Africa maintains a higher fertility than the rest of the world throughout the rest of this century



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The UN medium scenario reflects the rough global consensus view of population trends, but projections vary across sources and scenarios.

Global population, million, by different UN scenarios and other data sources



¹International Institute for Applied Systems Analysis. IIASA data are available for 200 countries, by age, sex, and education levels according to 7 scenarios from the Shared Socioeconomic Pathways (SSP) Scenario Database. These include scenarios numbered SSP1 through SSP5, and two additional scenarios which combine SSP2 with zero migration and with double migration.

²Institute for Health Metrics and Evaluation. IHME data are available for countries and regions, by age and sex according to 5 scenarios. Source: *World Population Prospects 2024*, United Nations; IHME; IIASA; McKinsey Global Institute analysis

McKinsey & Company

Different opinions

Various bodies project global population and their results can differ quite markedly

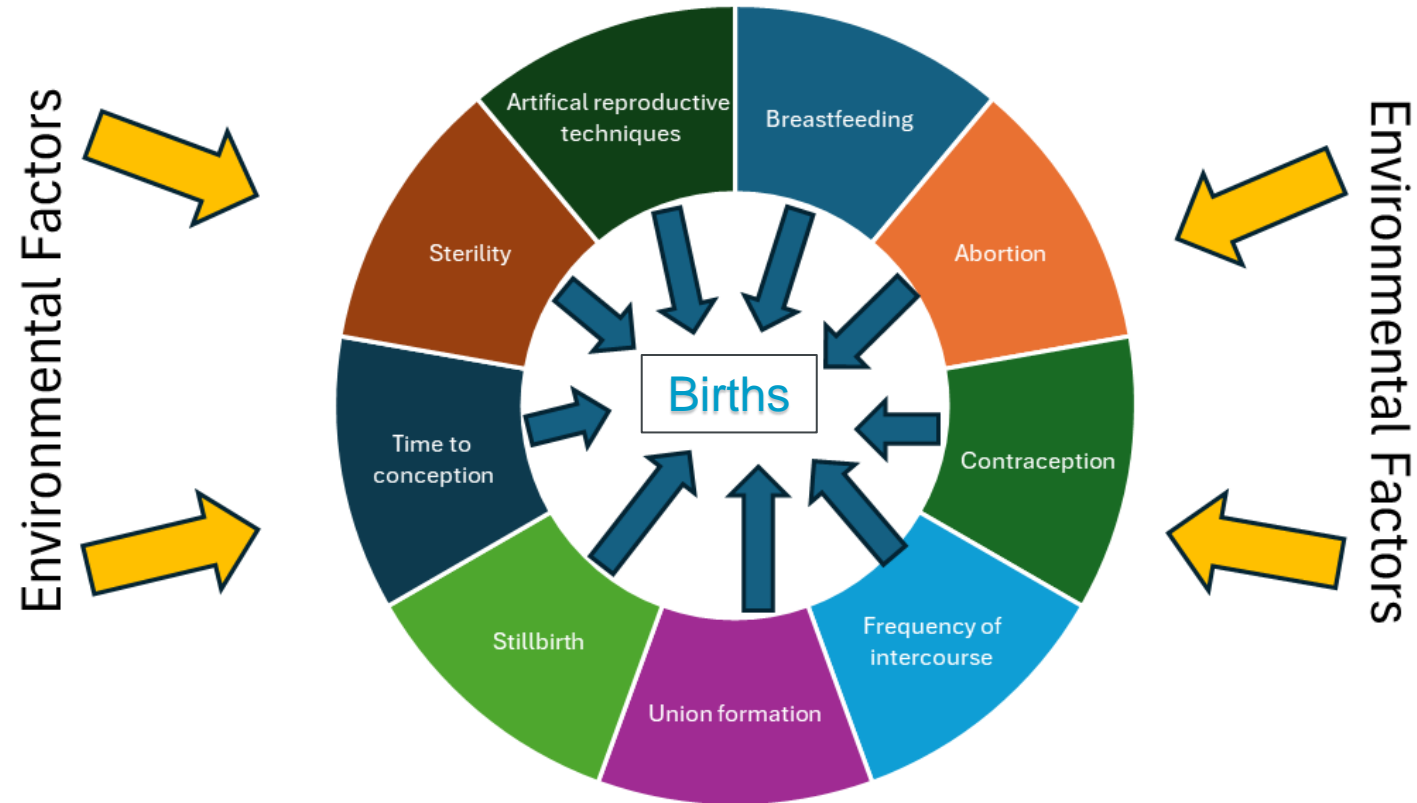


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Causes of low fertility



Determinants of fertility



Socio-Economic Factors



Rising Cost of Living

The increasing cost of living impacts individuals' ability to start families, often leading to delayed parenthood.

Housing Challenges

The affordability of housing plays a significant role in family planning decisions, influencing when or if to have children.

Childcare Costs

High childcare costs deter many individuals from starting families, making them prioritize their financial stability first.

Education and Career Focus

Education and career aspirations often take precedence over parenthood, influencing decisions about family timing.



Cultural and Lifestyle Changes



Changing attitudes towards marriage

Cultural shifts have led to new perspectives on marriage, impacting family structures and fertility rates.

Changing level of religious practice

The decline of religious practice is associated with declining fertility.

Parenthood views

Changing viewpoints on parenthood influence decisions about starting families and having children.

Lifestyle preferences

Consumerism and greater emphasis on personal freedom reflect a shift in lifestyle choices affecting fertility.

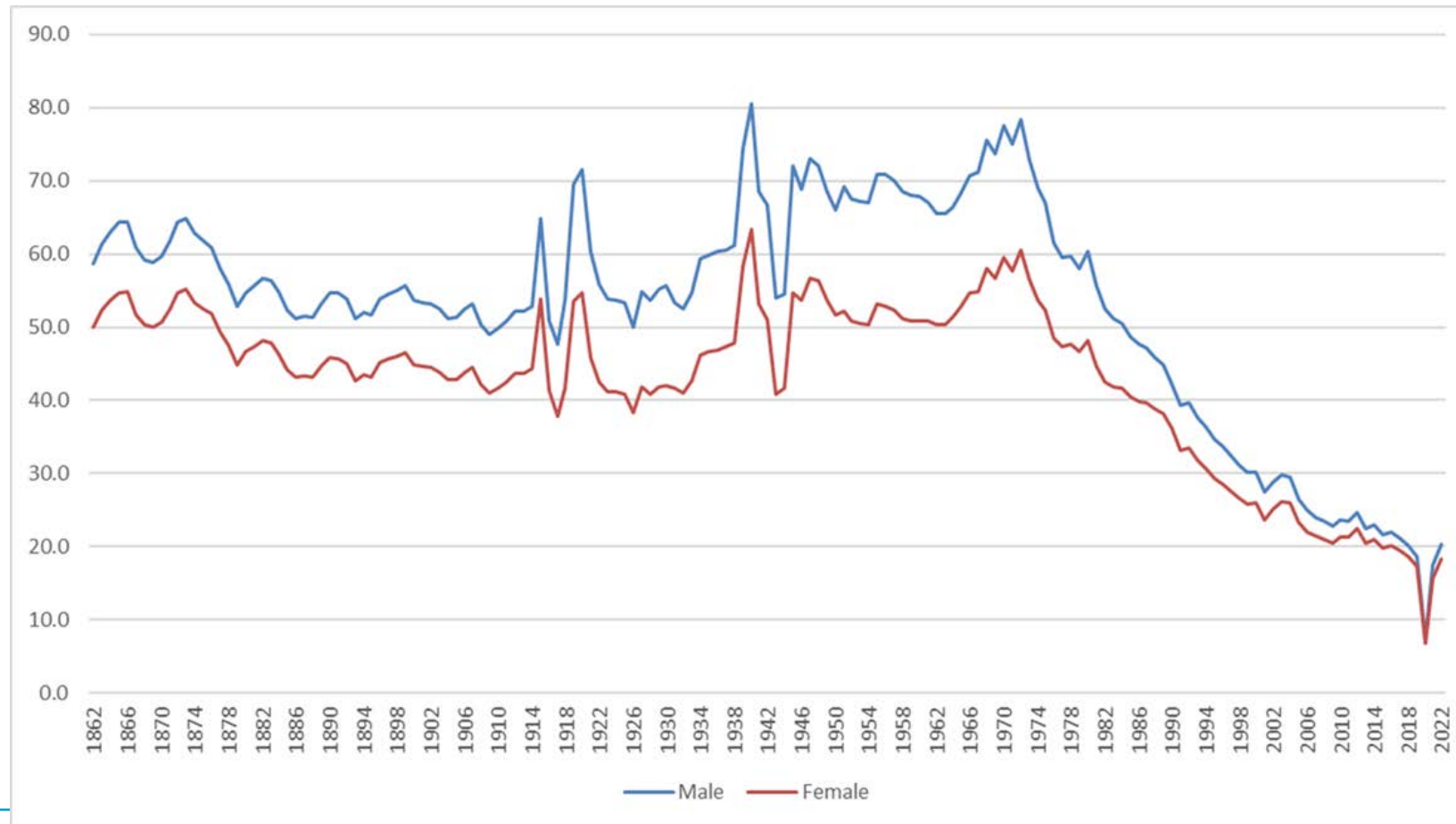
The state of the world

A bad time to bring a child into the world

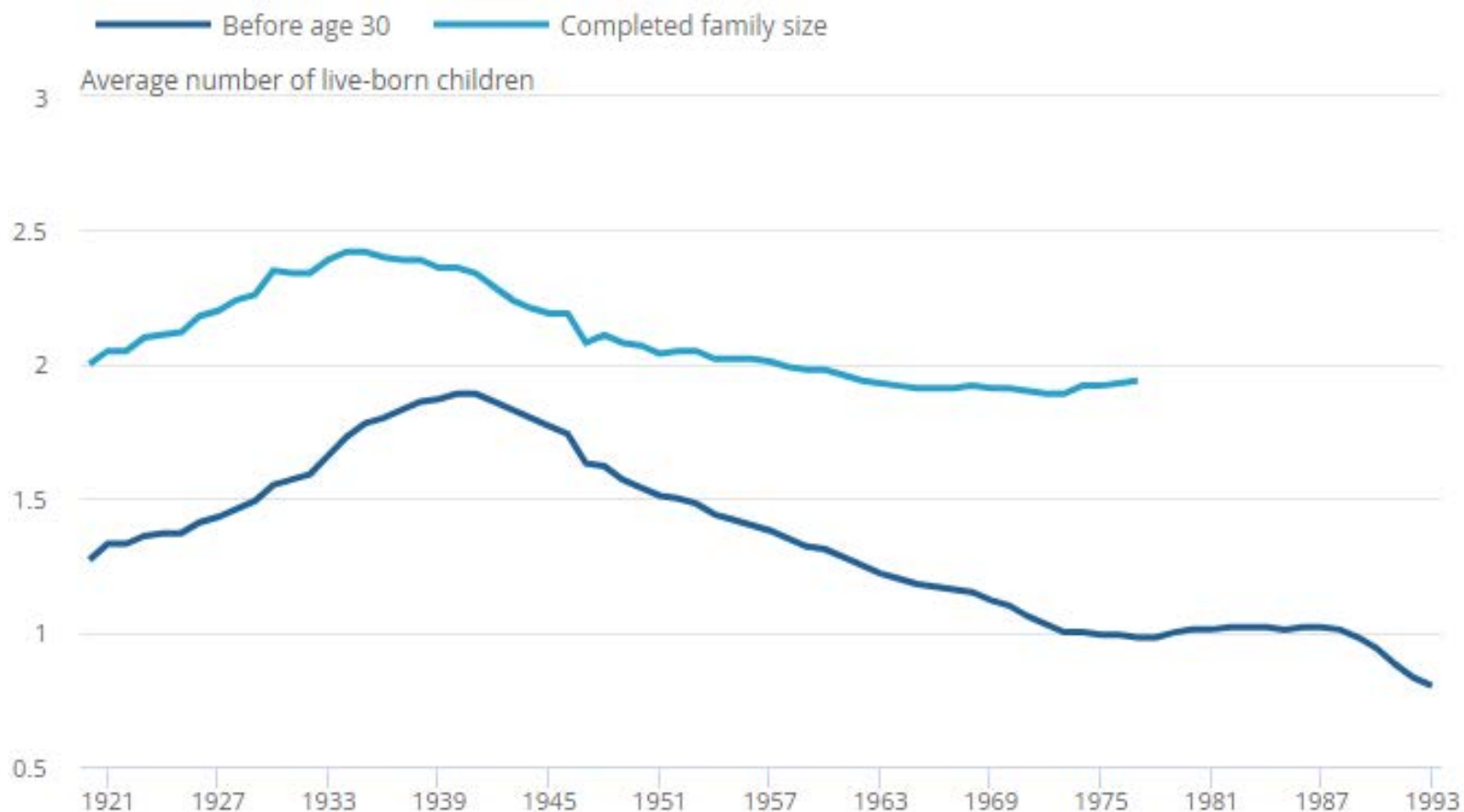


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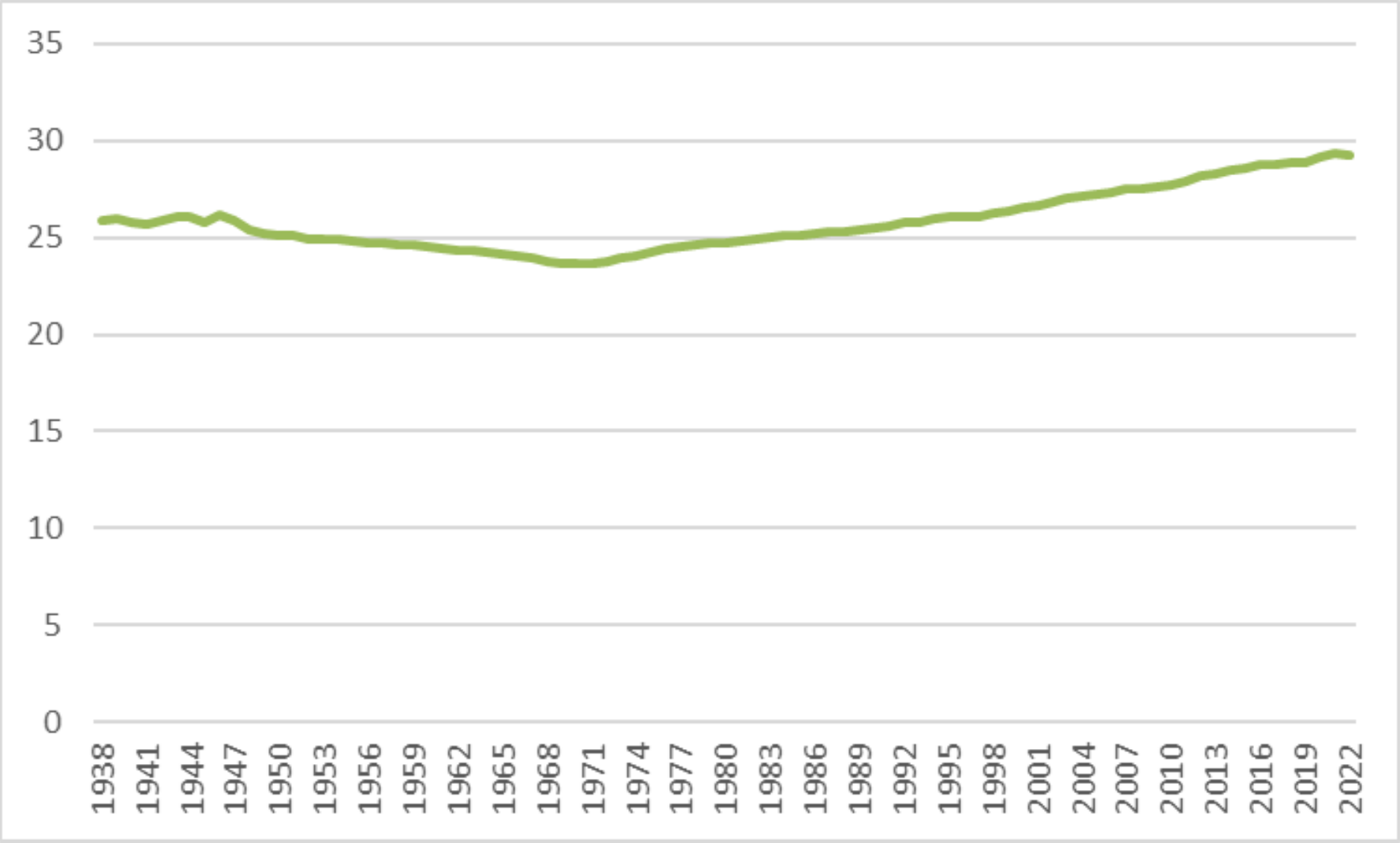
Marriage rate per 1,000 population of opposite-sex couples in England and Wales from 1862 to 2022, by gender



Average number of live-born children to women before aged 30 years and completed family size, by year of birth of woman, England and Wales, 1920 to 1993



Average age of mother at first birth England and Wales



Biological and Medical Reasons



Age-related infertility

Age-related infertility is a significant biological factor affecting the ability to conceive and bear children, particularly in women.

Medical Conditions

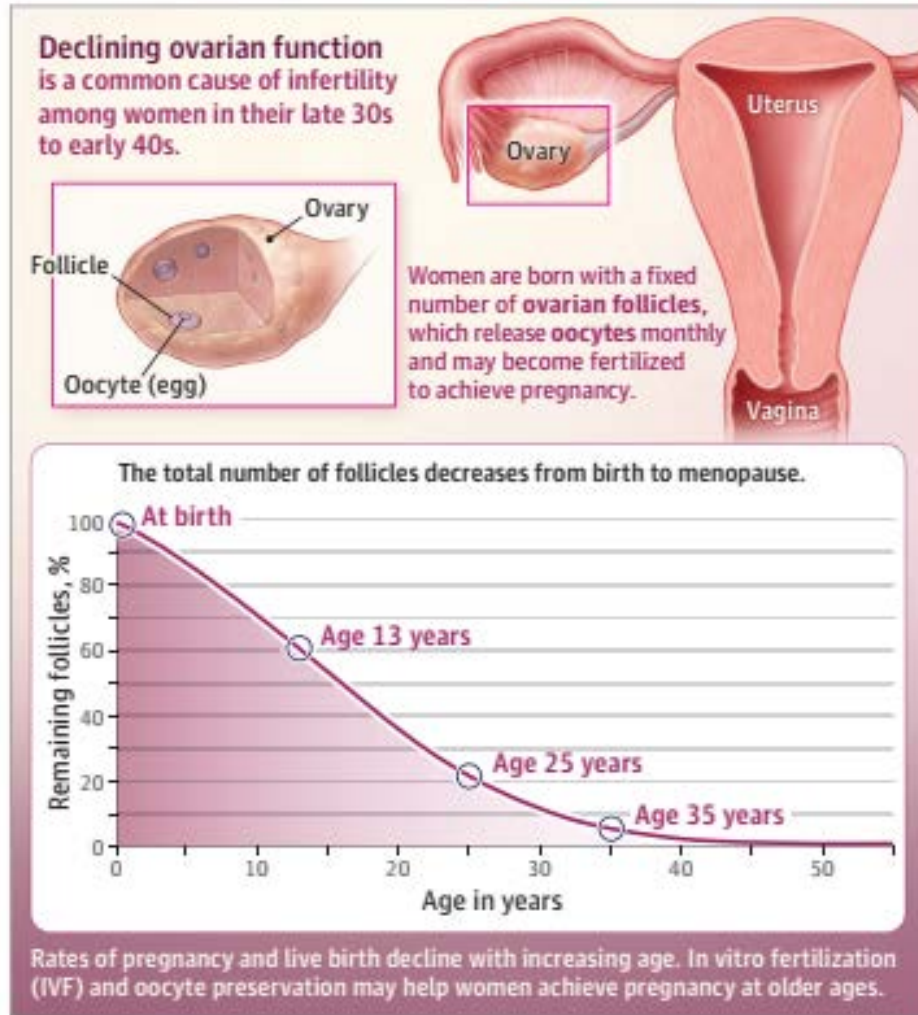
Certain medical conditions can hinder childbearing by affecting reproductive health, making it challenging to conceive.

Increase in contraception, abortion and artificial reproductive techniques

The widespread use of contraception and abortion and the increasing use of ART affects fertility.



Age-related infertility



Advancing Age, Reduced Fertility, and Miscarriage

Few women achieve live birth with their own oocytes after age 45 years despite optimal diet, exercise, and use of in vitro fertilization (IVF). Rates of miscarriage are approximately 12% in women aged 20 to 29 years, 25% by age 40 years, 40% by age 43 years, and 65% in women aged 45 years or older.

(Walter KL. Ovarian Aging and Fertility. *JAMA*. Published online March 27, 2025. doi: 10.1001/jama.2025.2361)



Consequences of low fertility



Potential advantages

- Lower pressure on the planet, globally or locally (lower resource usage, lower pollution)
- Greater opportunities for women
- Higher investment in each child
- Less overcrowding in cities



Potential disadvantages

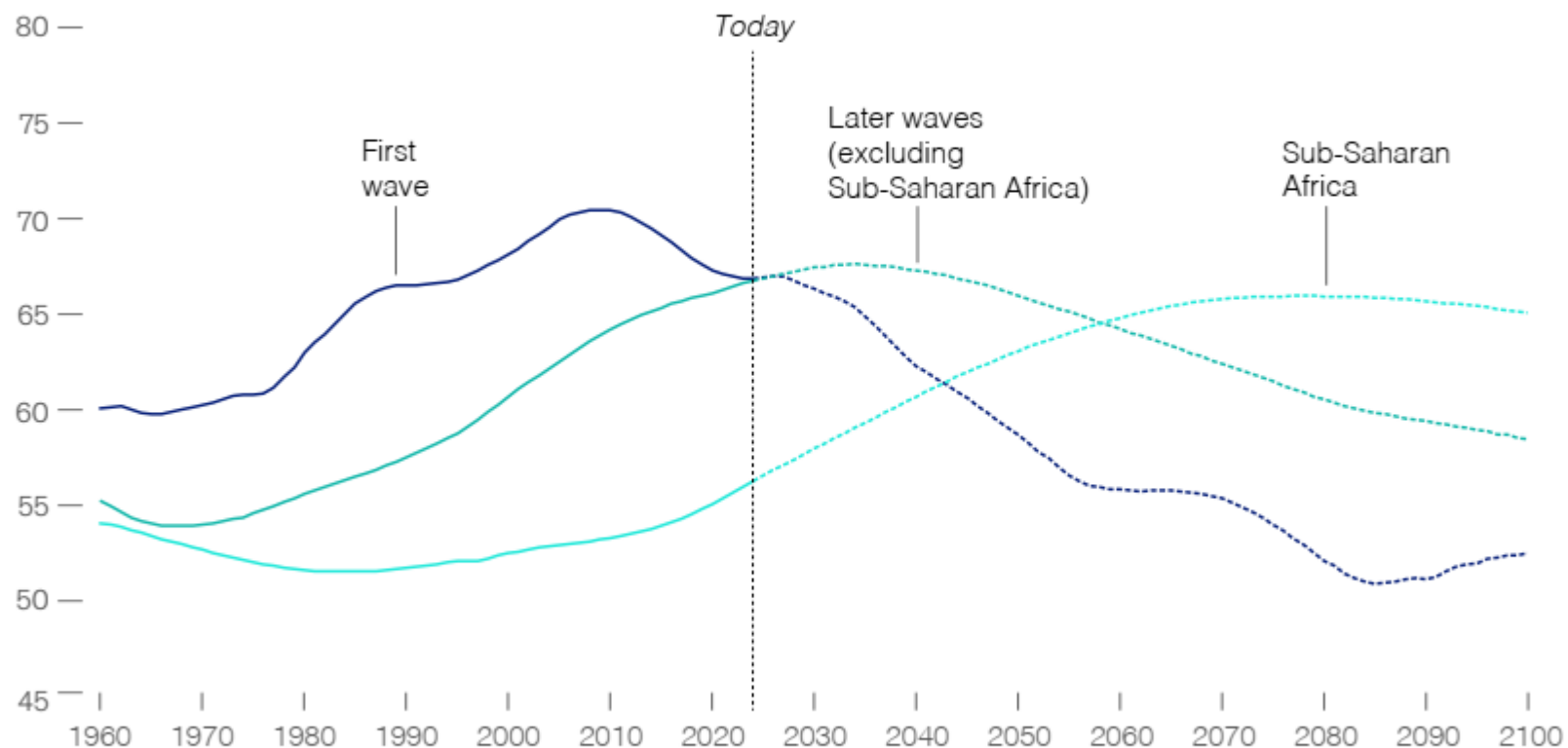
- Population collapse
- Pressure on national budgets through increased healthcare and pension costs and fewer taxpayers
- Increased immigration
- Cultural shifts
- Lower productivity and innovation
- Lower economic growth
- Fewer workers, fewer consumers



Changes in working age population

Working-age populations peak in three waves.

Population aged 15–64 years, % of total population

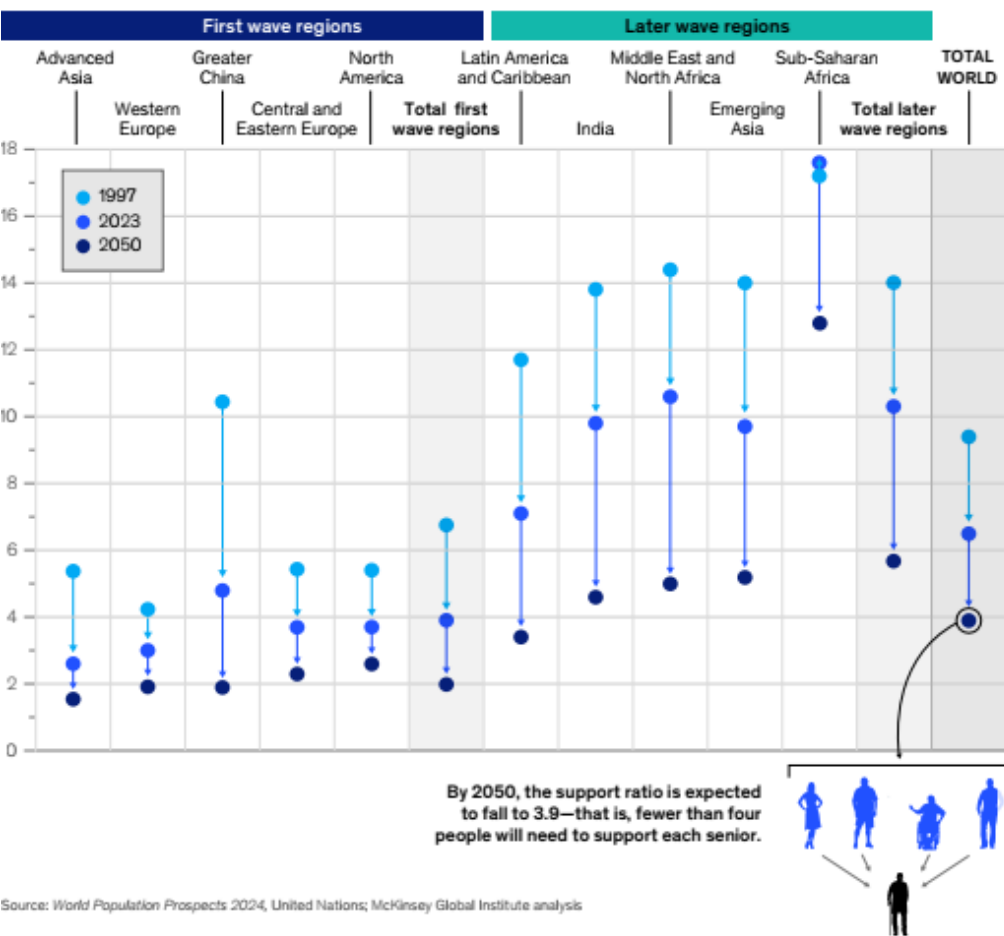


Source: World Population Prospects 2024, United Nations; McKinsey Global Institute analysis

Support ratios declining

Support ratios will decline rapidly across regions through 2050.

Support ratio, number of people 15–64 years old for each person 65 years and older, 1997–2050



Source: World Population Prospects 2024, United Nations; McKinsey Global Institute analysis

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Why does it matter?

“The impact of falling birth rates should not be taken lightly. The burden of healthcare and pension spending for older populations will fall on a shrinking workforce. That may lead to higher taxes. Public finances will come under even greater pressure too. Fewer youngsters in the labour market could also limit innovation and productivity growth.”

Financial Times 23 February 2024



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Responding to low fertility



Two approaches

- Deal with consequences
- Deal with underlying causes



Dealing with consequences

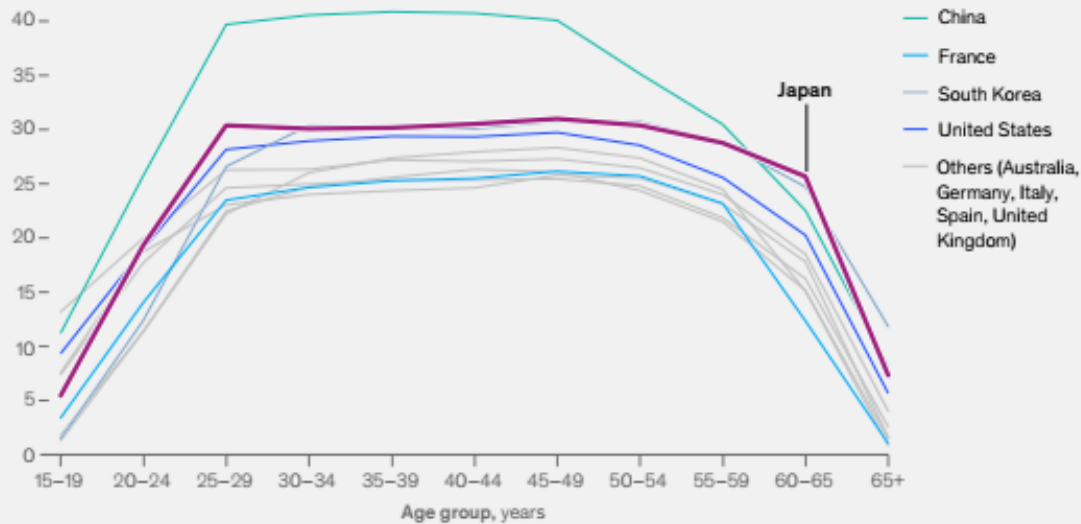
- Increased labour force participation
- Increased productivity
- Increased migration



Increase labour force participation

Japanese people work more hours, on average, than people in most other first wave economies.

Weekly hours per capita over a life cycle, 2023



Source: World Population Prospects 2024, United Nations; ILOSTAT; The Conference Board; McKinsey Global Institute analysis

McKinsey & Company

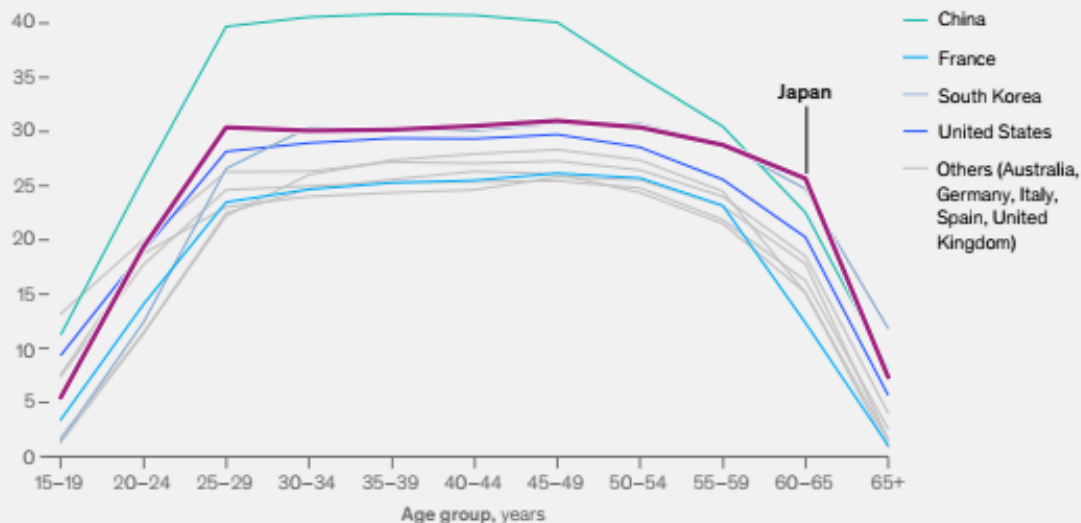


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Increase labour force participation – not so easy

Japanese people work more hours, on average, than people in most other first wave economies.

Weekly hours per capita over a life cycle, 2023



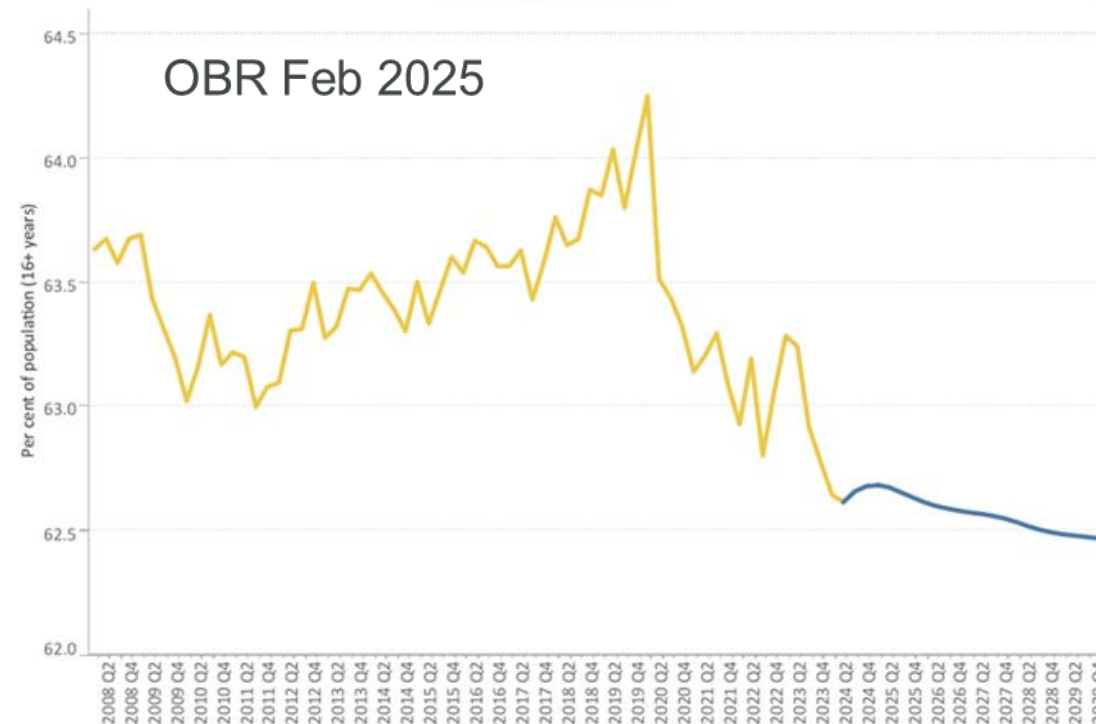
Source: World Population Prospects 2024, United Nations; ILOSTAT; The Conference Board; McKinsey Global Institute analysis

McKinsey & Company

Participation rate



OBR Feb 2025



Source: ONS, OBR

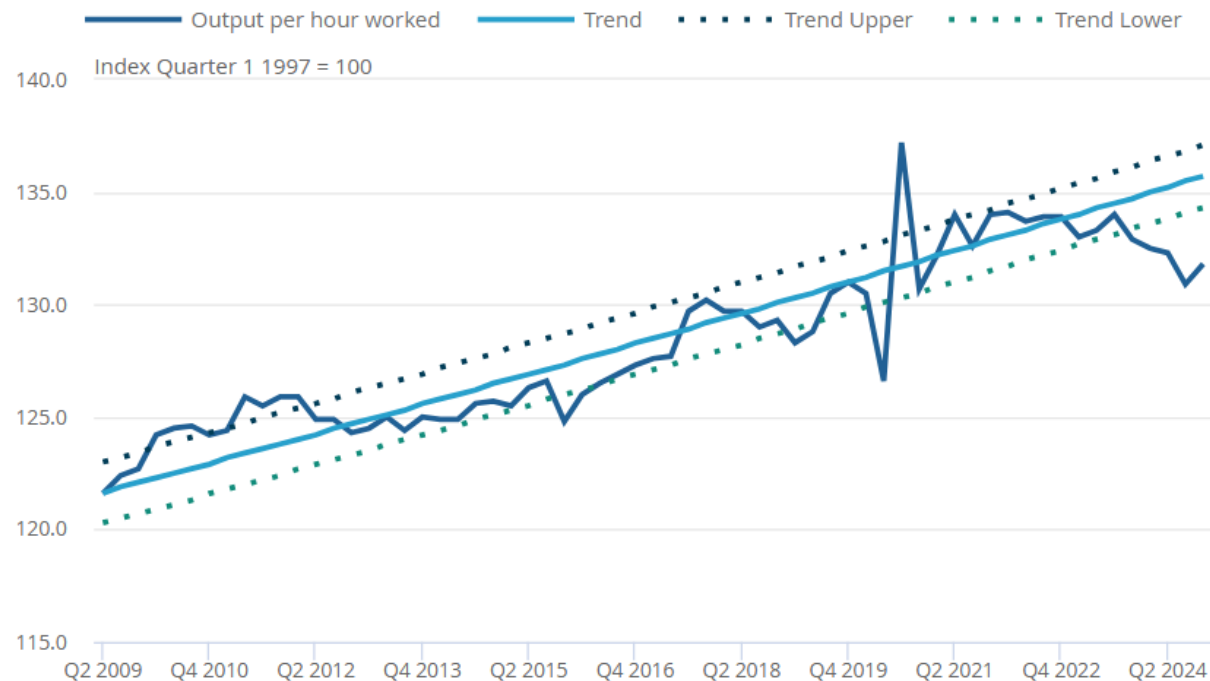


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Nor is increasing productivity

Output per hour, trend with upper and lower bound, UK, index Quarter 1

1997 equals 100, Quarter 2 (Apr to Jun) 2009 to Quarter 4 (Oct to Dec) 2024



Source: Productivity flash estimate and overview, UK from the Office for

National Statistics

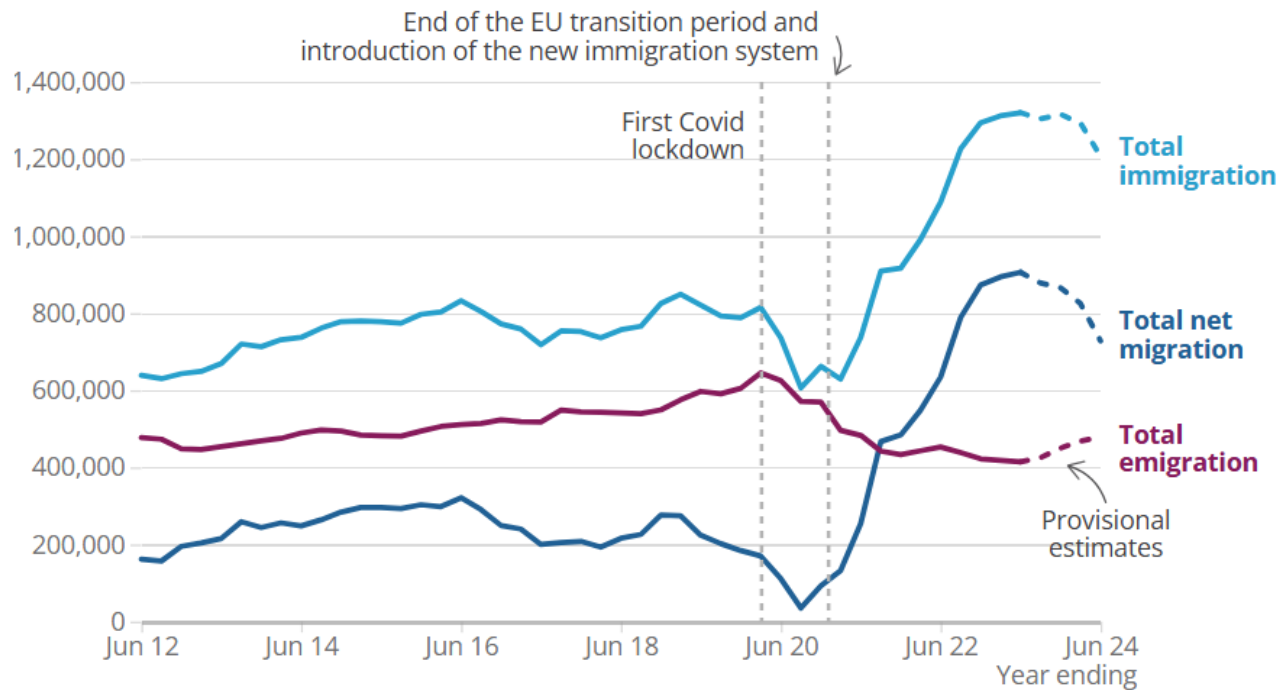
Productivity flash estimate and overview, UK - Office for National Statistics 18 Feb 2025



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Immigration

Total long-term net migration, immigration and emigration in the UK,
year ending (YE) June 2012 to YE June 2024



Source: Borders and Immigration data from the Home Office, Registration and Population Interactions Database from the Department for Work and Pensions, and International Passenger Survey from the Office for National Statistics



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Dealing with causes

- Government policies, incentives and encouragement
- Cultural shifts



Government Policies, Incentives and Encouragement



Financial Incentives for Families

Policies that provide financial support can encourage families to have more children by reducing economic burdens.



Affordable Childcare Options

Providing accessible and affordable childcare is essential for families to balance work and parenthood, thus encouraging births.



Work/life balance

Effective parental leave policies are vital in allowing parents to spend time with newborns, promoting higher birth rates.

Gender equality in terms of share of caring duties and career, pay and leave opportunities.



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Government Policies, Incentives and Encouragement

Singapore 2025

As a signal of the importance of marriage and parenthood to our future as we cross into our 60th year of nationhood, we are planning a special gift for our SG60 babies next year.

More details in due course. So do keep a look out!

Australia

In 2004, Peter Costello, Australian Treasurer, issued a plea for parents to “have one for Mum, one for Dad and one for the country. Australia’s fertility rate rose between 2004 and 2008, whether or not in response to Costello’s encouragement, but has since declined to only 1.5, about half a baby for each of Mum, Dad and the country.



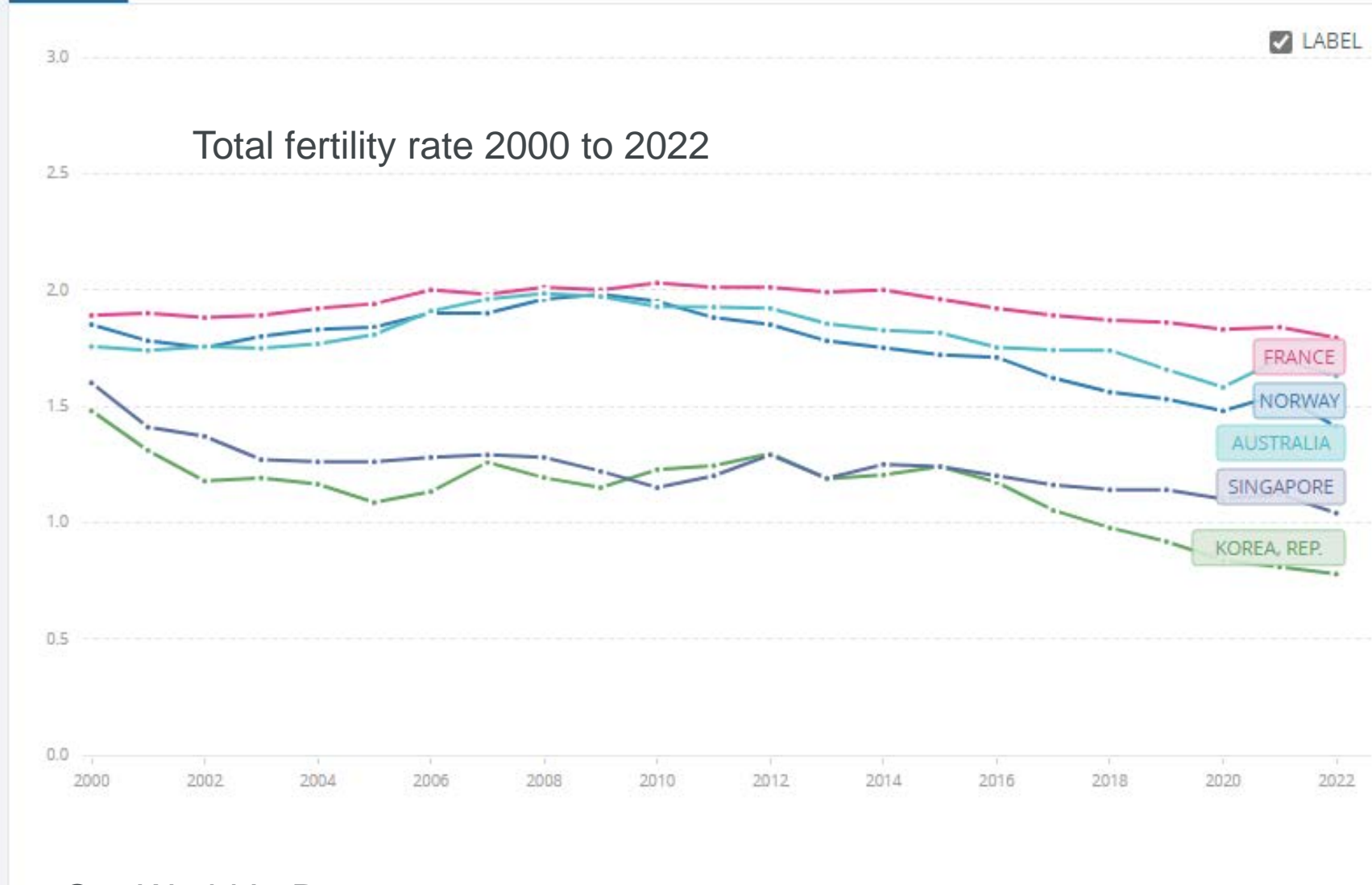
South Korea

The government has spent upward of \$200 billion on initiatives to boost births since 2006, but there appears to be little to show for it.



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Outcome of government policies



Our World In Data



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Cultural shifts

What might be required

- Less time in education
- Switch from secularism to religion
- Reappraisal of the value of parenthood



John Maynard Keynes 1937

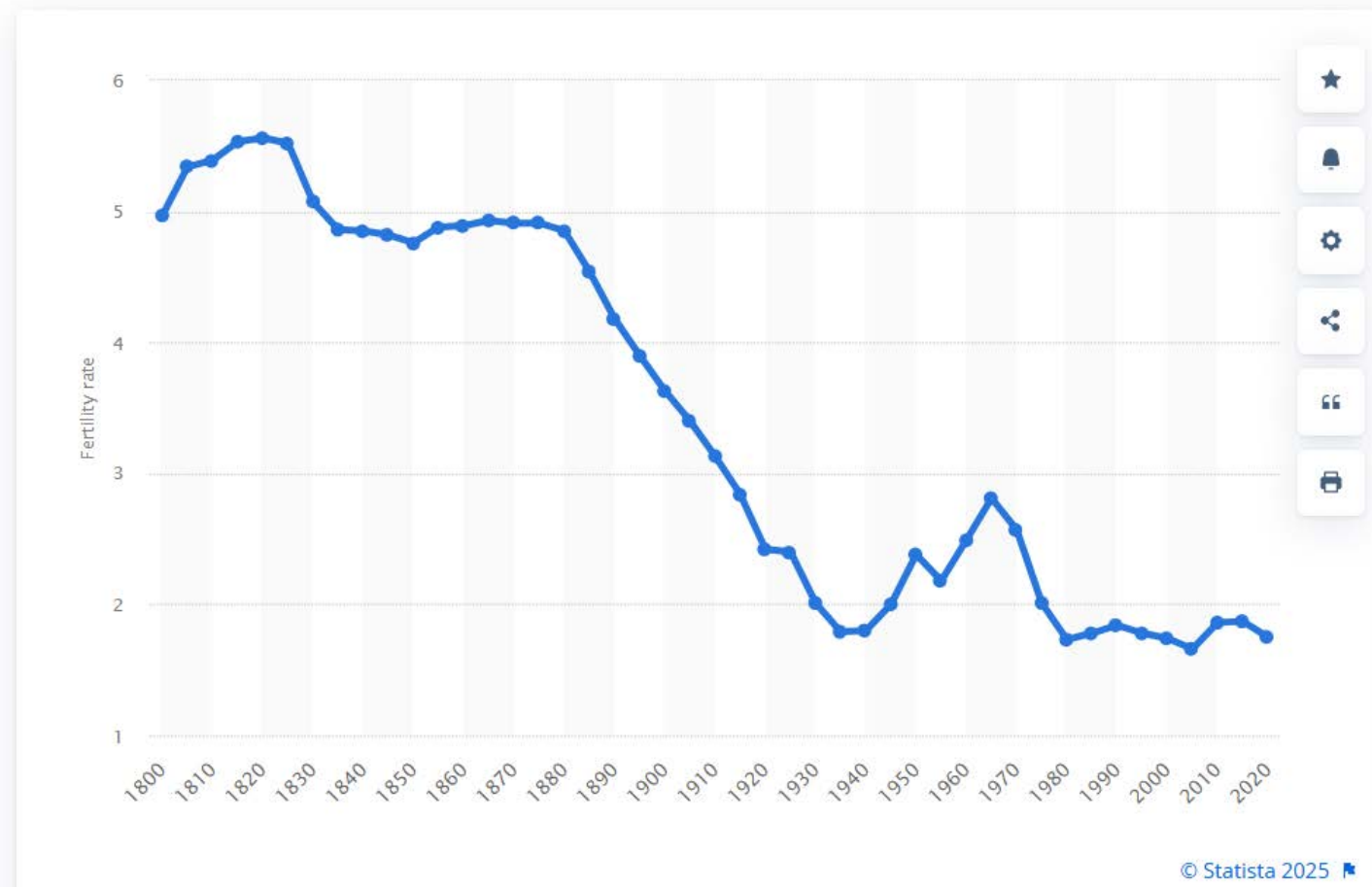
We know much more securely than we know almost any other social or economic factor relating to the future that, in the place of the steady and indeed steeply rising level of population which we have experienced for a great number of decades, we shall be faced in a very short time with a stationary or a declining level. The rate of decline is doubtful, but it is virtually certain that the changeover, compared with what we have been used to, will be substantial.

We have this unusual degree of knowledge concerning the future because of the long but definite time-lag in the effects of vital statistics. Nevertheless the idea of the future being different from the present is so repugnant to our conventional modes of thought and behaviour that we, most of us, offer a great resistance to acting on it in practice.



But whoever listens to experts?

Total fertility rate in the United Kingdom from 1800 to 2020*



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Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.



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