

# Economic growth and the challenge of demographics

**Lord David Willetts**, President of the Resolution Foundation (Chair)

**Professor Brian Bell**, Chair of the UK Government Migration Advisory Committee and a Professor of Economics at King's Business School

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# Economic growth and the challenge of demographics'

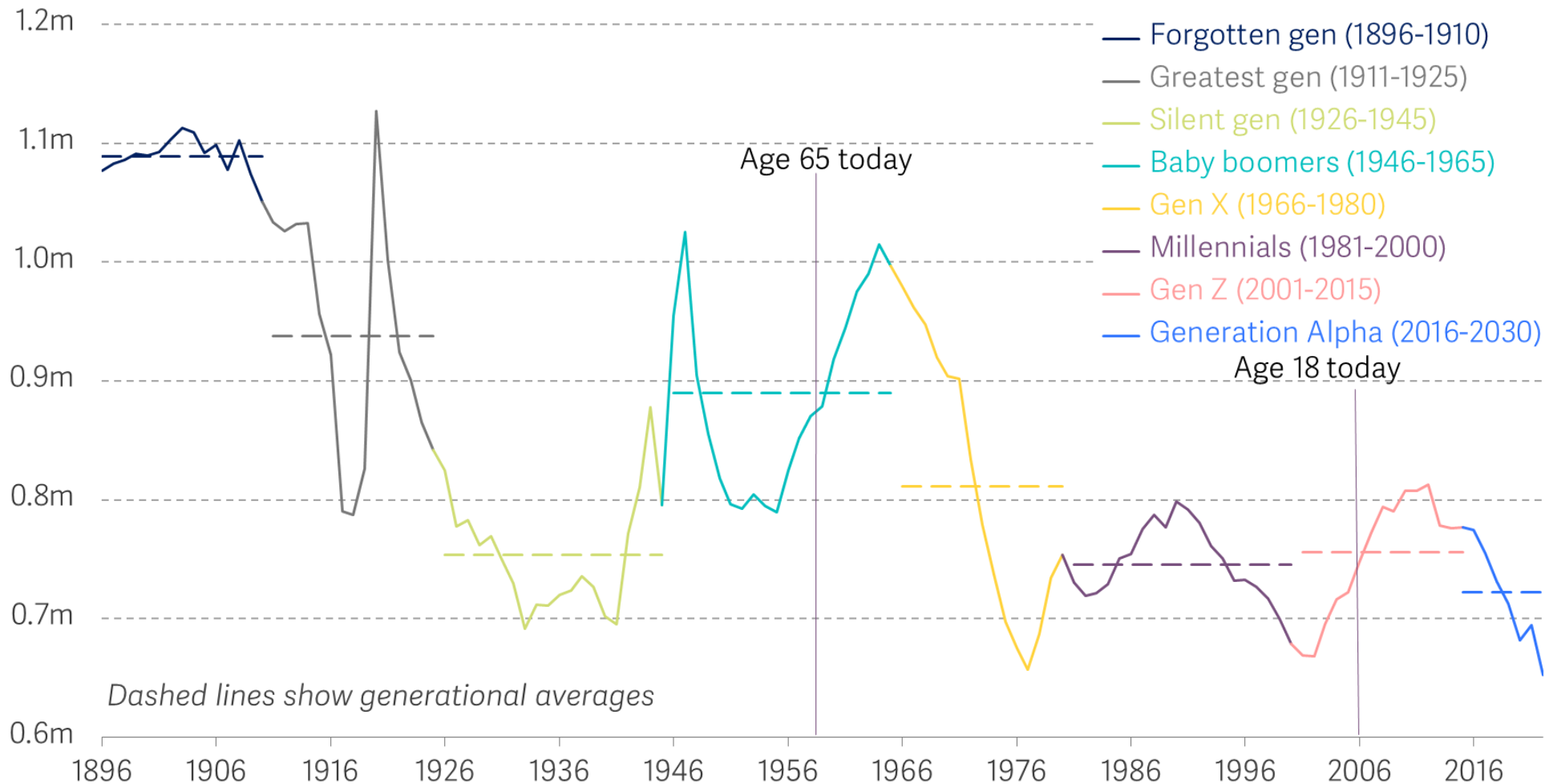
**David Willetts**

Resolution Foundation, Royal Economic Society and the Society of Professional Economists

3 December 2024

# Birth patterns have fluctuated dramatically over time

Births per year and generational averages: UK



*Dashed lines show generational averages*

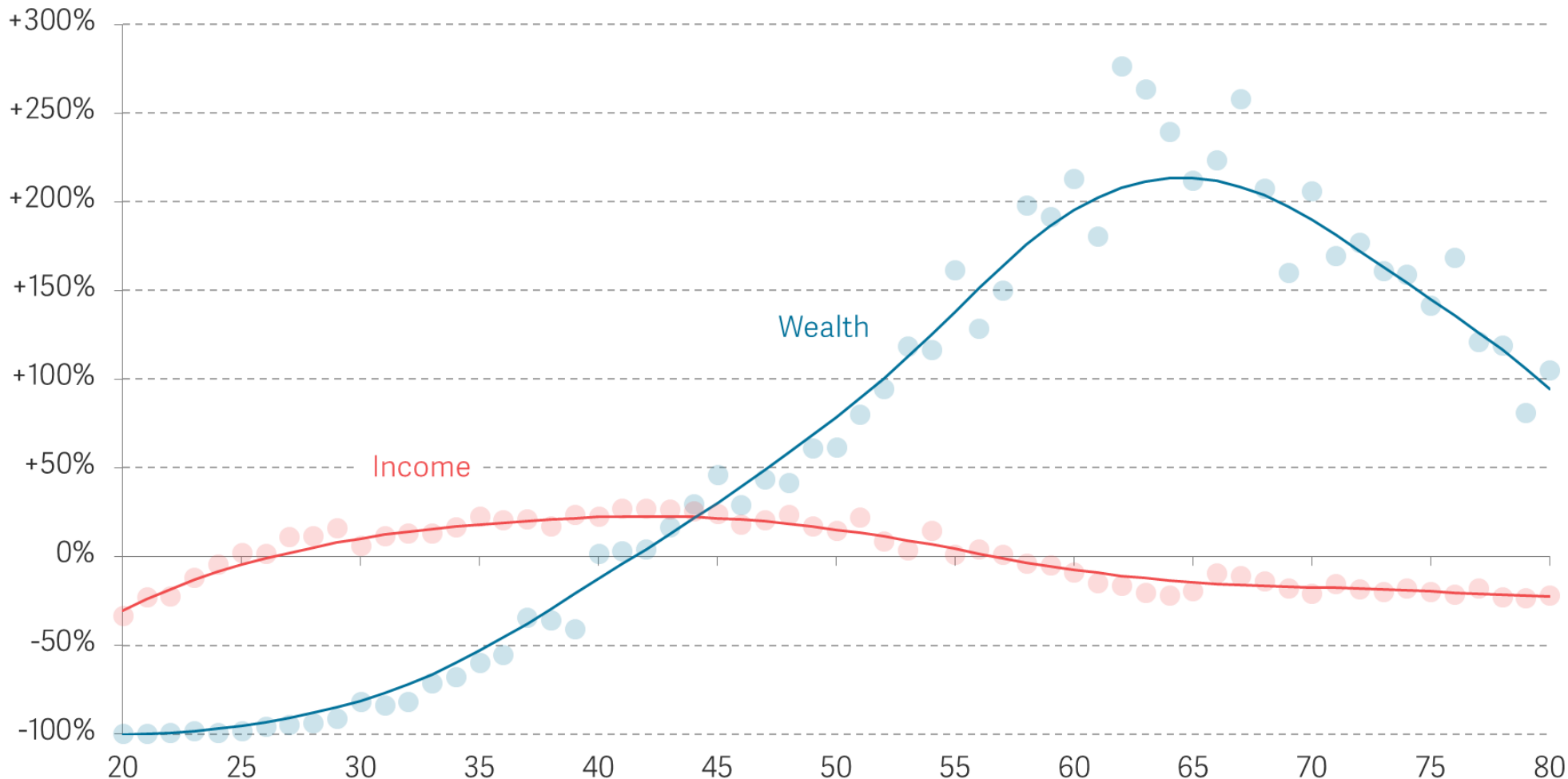
Notes: Northern Ireland data is unavailable for 2022, and so is estimated based on births in 2021.

Source: ONS, Birth Characteristics (England and Wales); NRS, Births Time Series Data (Scotland); NISRA, Live births, 1887 to 2021 (Northern Ireland).

# Wealth

# Wealth has a much stronger lifecycle component than income

Difference between median income and wealth at each year of age and median income and wealth across the whole population: UK, 2022-23 & GB, 2018-20

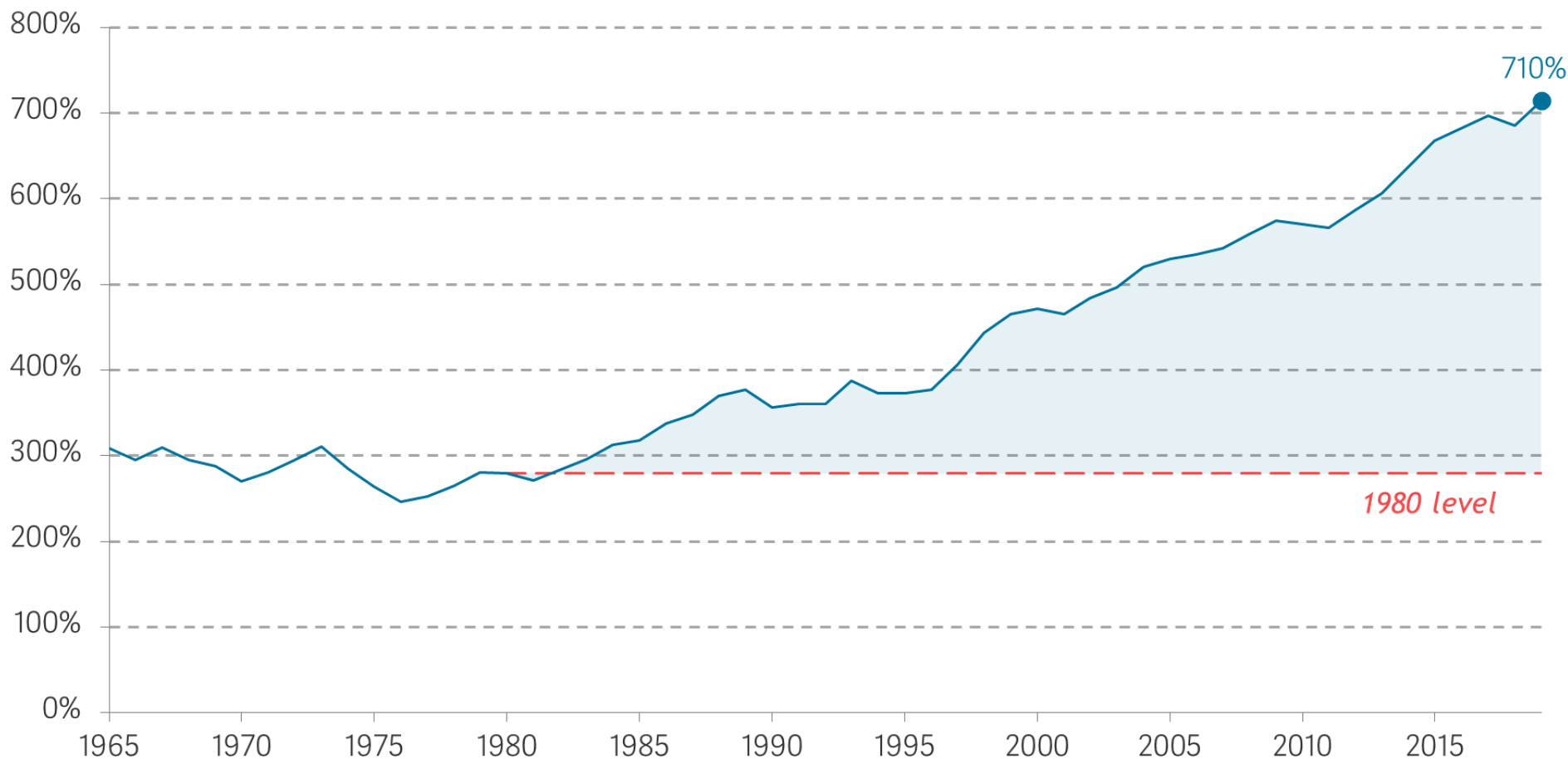


Notes: Each dot represents median wealth for a single year of age. Lines are smoothed local regression estimates. As in the rest of the report, our unit of analysis is the individual, but wealth is equally split between adults in families. To make a like-for-like comparison, we do the same for net income.

Source: RF analysis of ONS, Wealth and Assets Survey & Household Below Average Income.

# Over the past four decades UK household wealth more than doubled relative to incomes

Household wealth as a share of national income: UK/GB

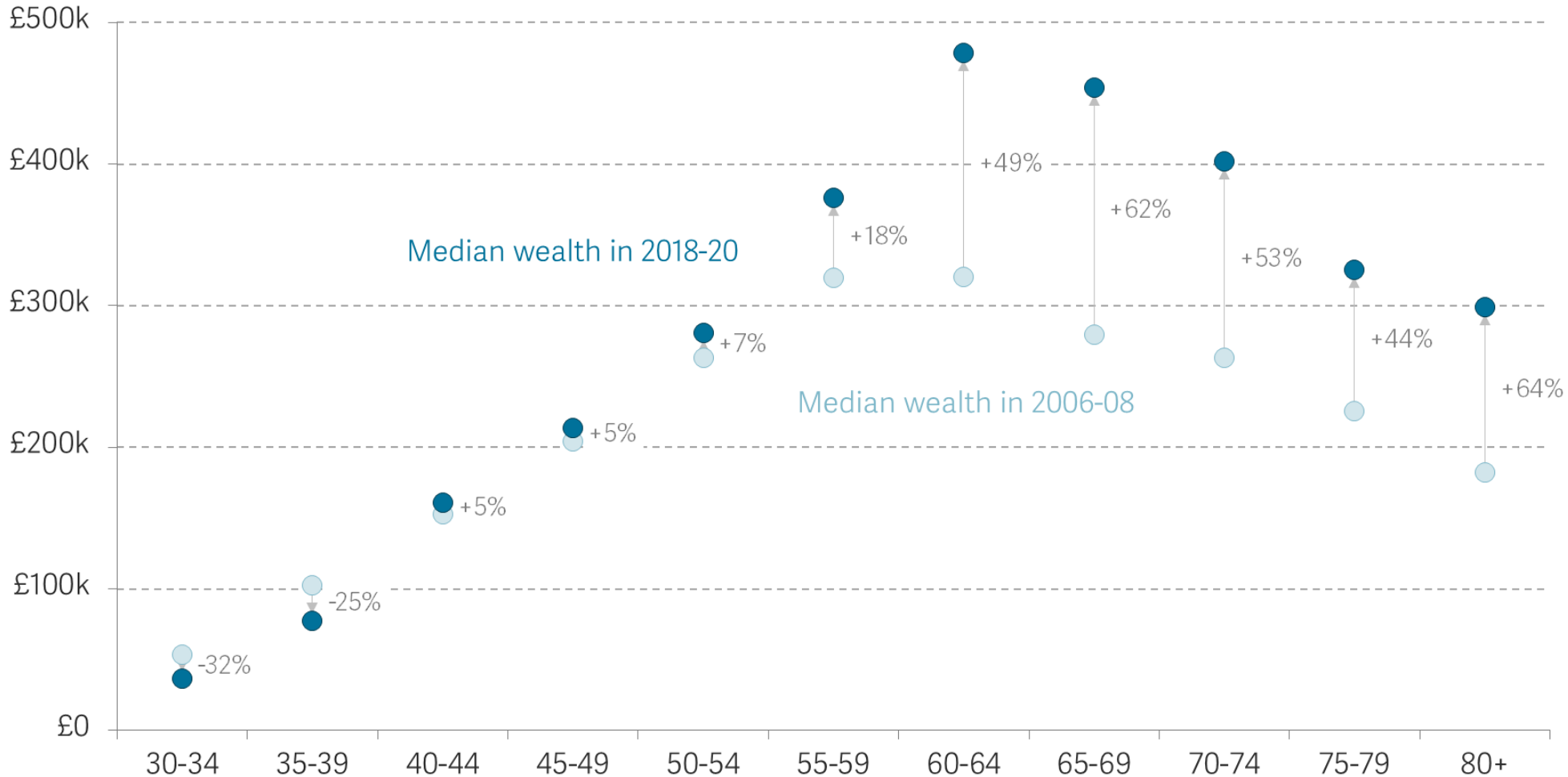


Notes: See report for full chart notes.

Source: RF analysis of F Alvaredo, A B Atkinson & S Morelli, Top wealth shares in the UK over more than a century, *Journal of Public Economics* 162, June 2018 (compiled by the World Inequality Database); T Blanchet & C Martínez-Toledano, Distributional Wealth Accounts in Europe: Methodology, World Inequality Lab, January 2022 (compiled by the World Inequality Database); E Saez & G Zucman, The Rise of Income and Wealth Inequality in America: Evidence from Distributional Macroeconomic Accounts, *Journal of Economic Perspectives* 34(4), 2020.

# Since the financial crisis, the gaps between older and younger people have widened

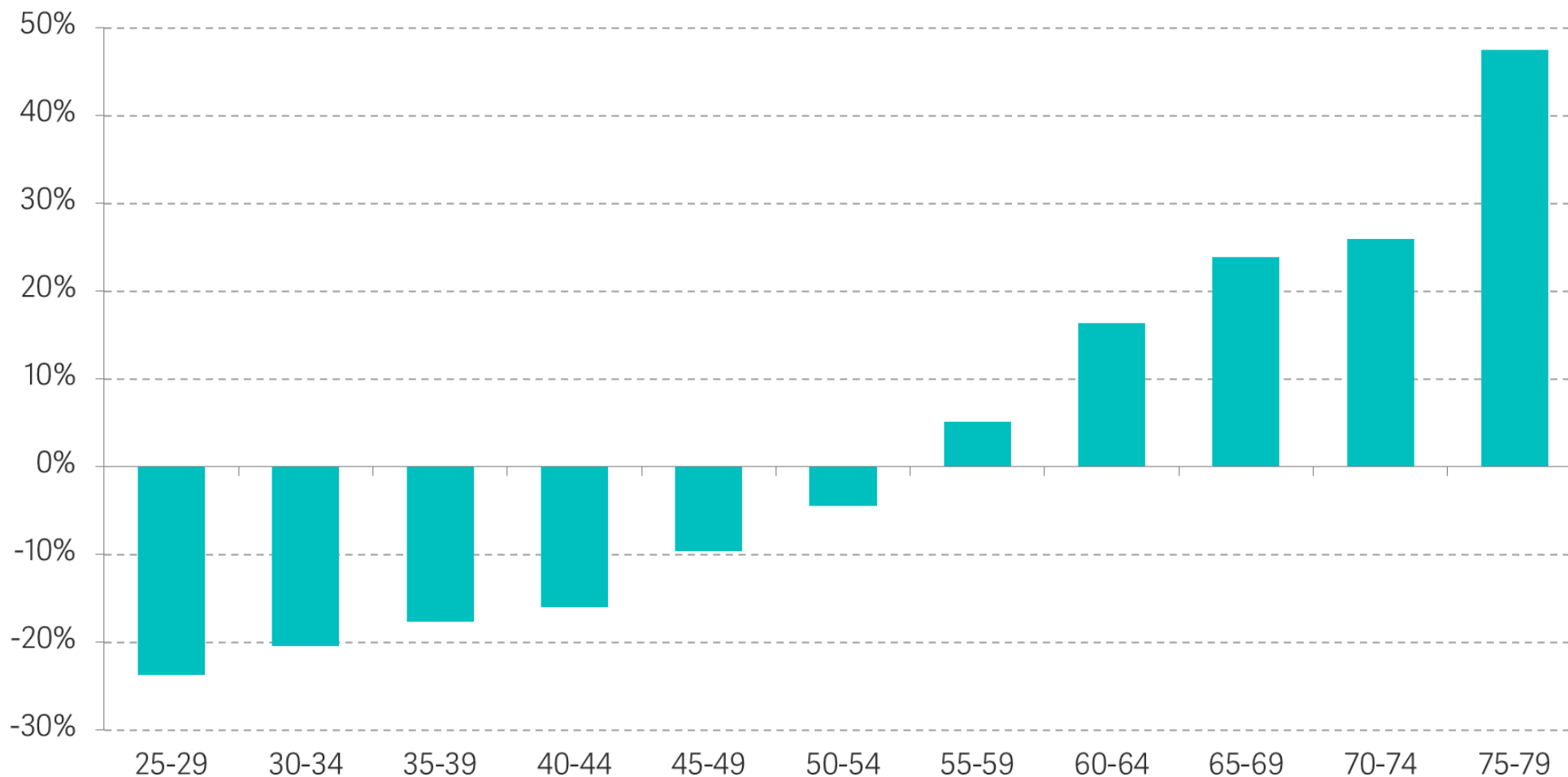
Median real family net wealth per adult, by five-year age group: GB



Notes: Data is converted to September 2024 prices using a seasonally adjusted CPIH index. To ensure comparability over time, wealth is measured as the sum of net financial, net property and pension wealth, and is equally split between adults within families.  
Source: RF analysis of ONS, Wealth and Assets Survey.

# The UK has seen an age-divided shift in home ownership

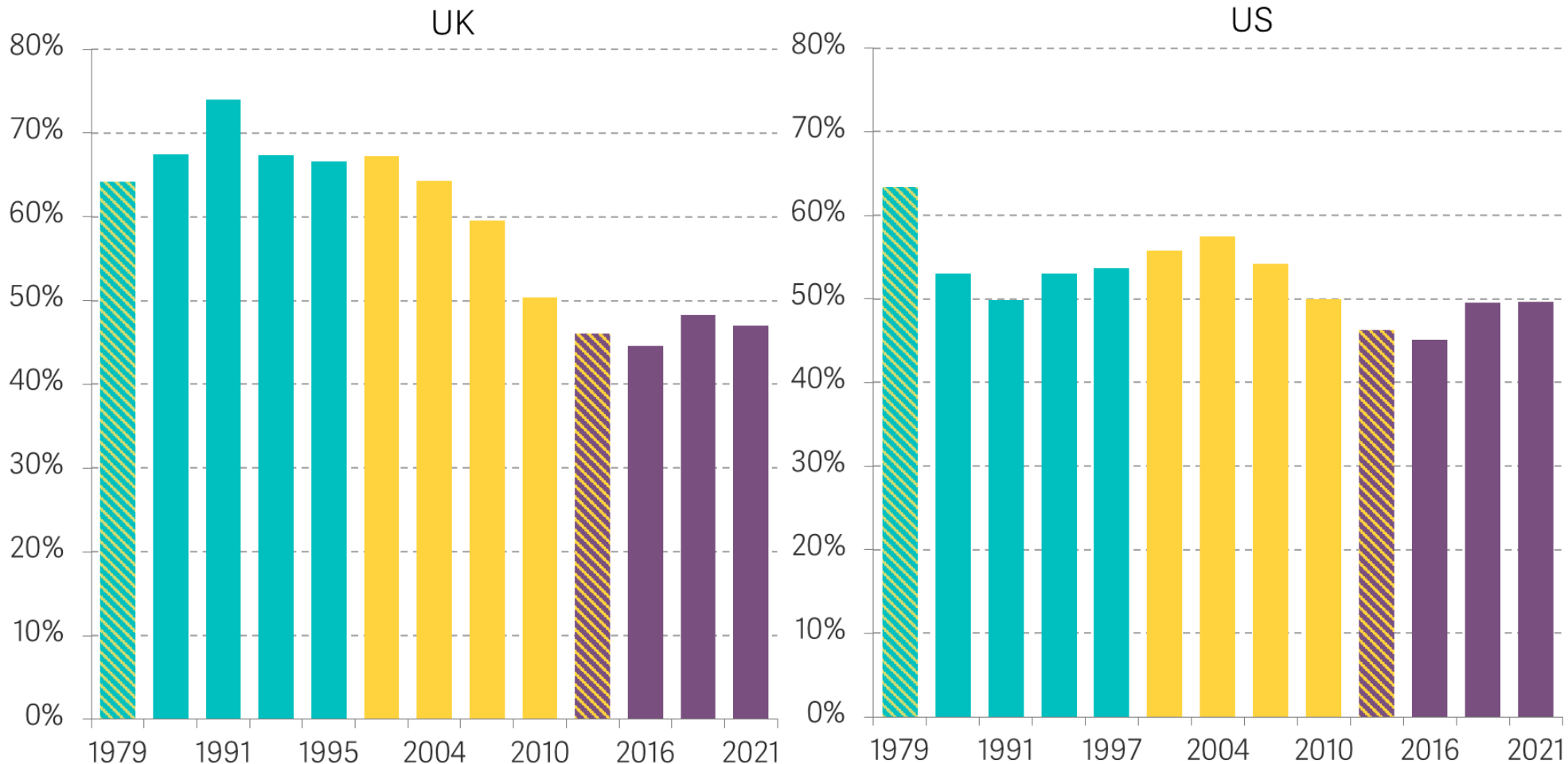
Change in proportion of households owning a home between 1986 and 2021, by age group: UK



Source: RF analysis of Luxembourg Income Study and FRS for UK 2021.

# The recent uptick in UK home ownership among younger adults has closed less of the generational gap than in the US

Proportion of households owning a home, at age 30-34, by year: UK (left panel) and US (right panel)



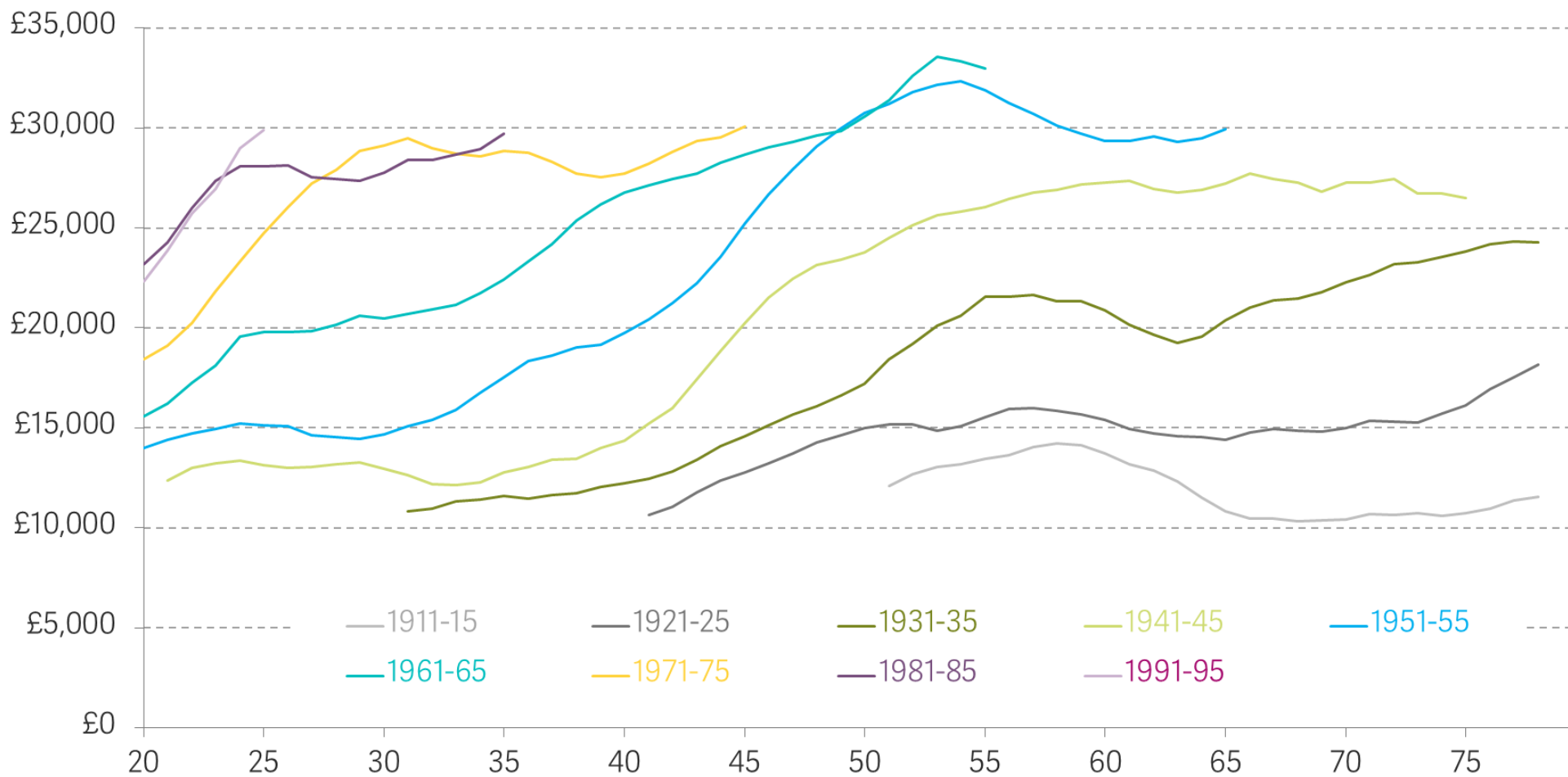
Notes: Bar colours refer to which generation was aged 30 to 34 in a given data year, purple refers to millennials, yellow gen x, blue the baby boomers, green the silent generation and hatched bars are used for years with overlapping generations.

Source: RF analysis of Luxembourg Income Study and DWP, Family Resources Survey for UK 2021.

# Income

# Cohort-on-cohort income progress has improved

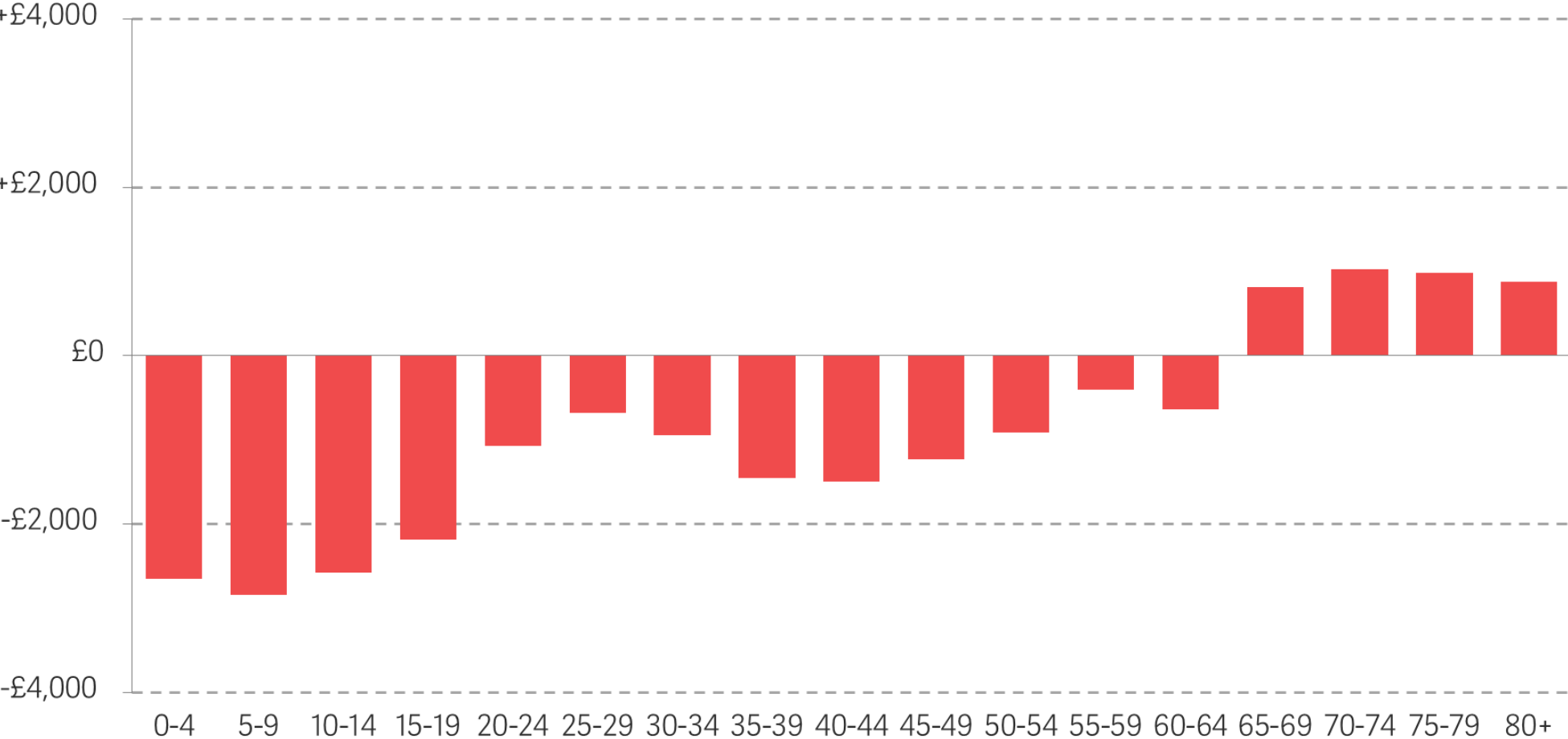
Typical real household disposable income (2022-23 prices), after housing costs, by age group and birth cohort:  
UK/GB, 1961-2021



Source: RF analysis of IFS, Households Below Average Income (1961-93); DWP, Family Resources Survey (1994-2021).

# Social security changes since 2010 have favoured older age groups

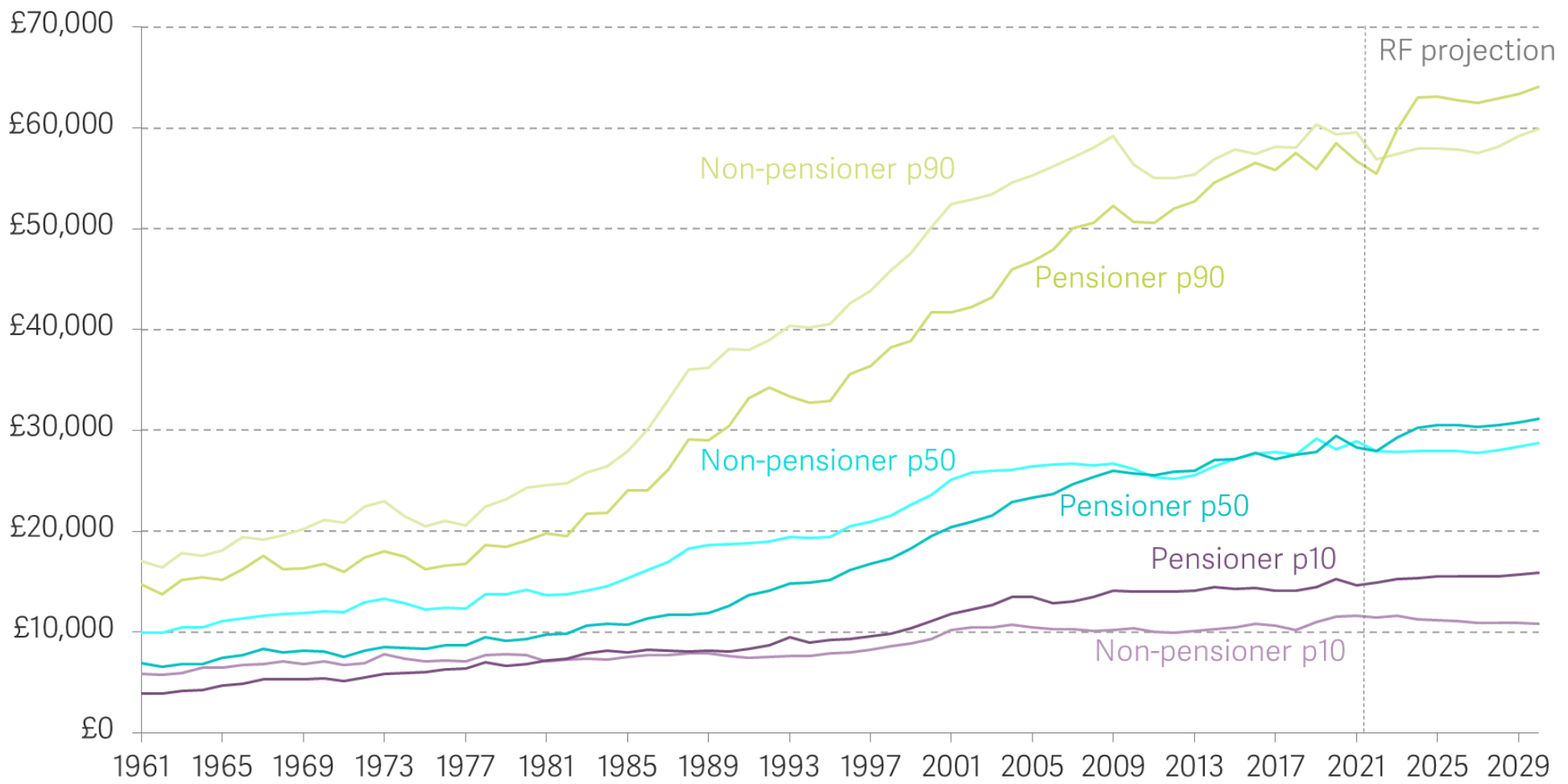
Impact of social security changes since 2010 on household incomes, by age: UK, 2024- 25



Notes: Shows change in unequivalised annual household income per person. The UK tax system has been applied to Scotland.  
Source: RF analysis of DWP, Family Resources Survey using the IPPR tax-benefit model

# Pensioners incomes are set to exceed working-age incomes across the distribution

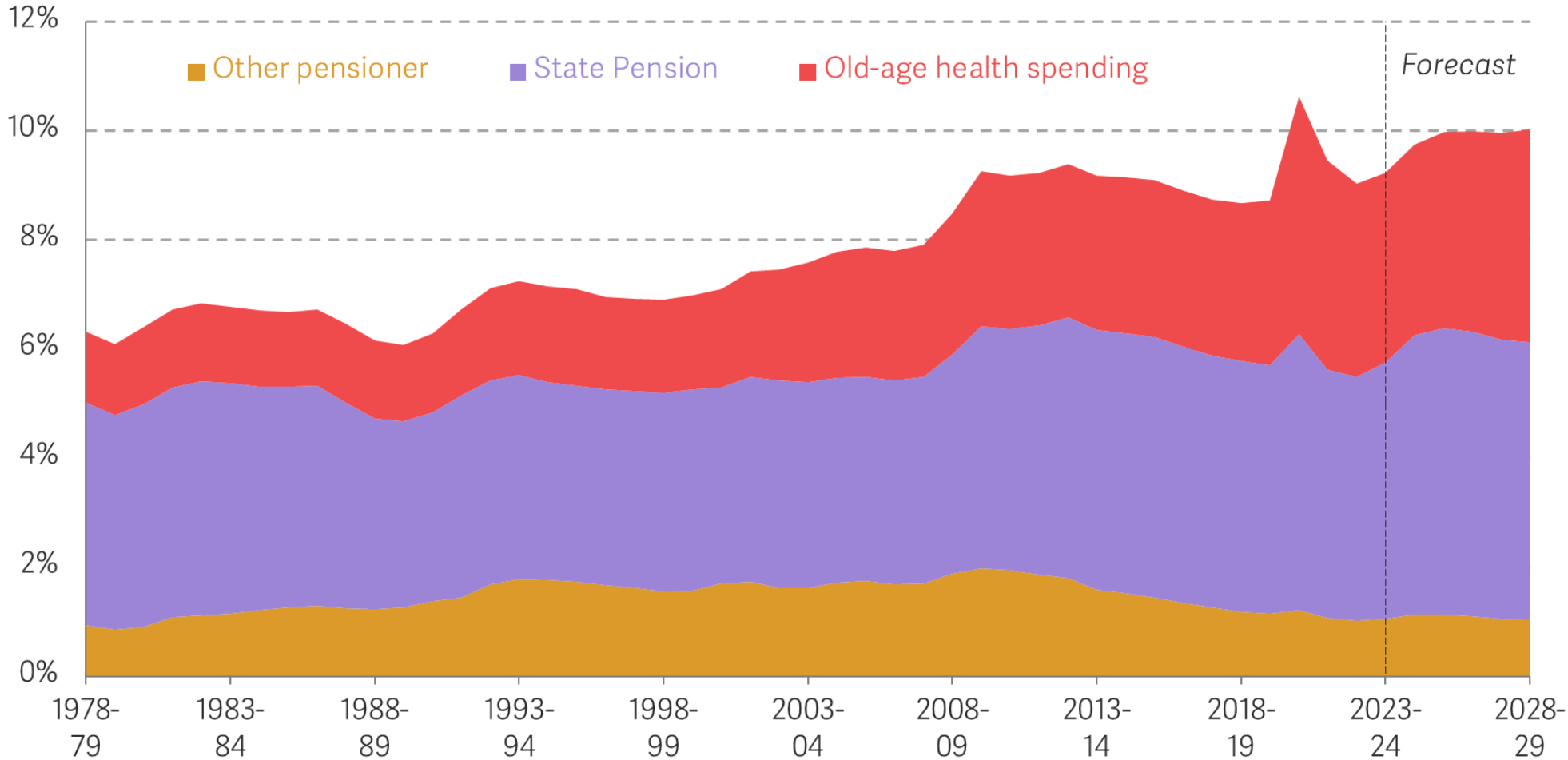
Levels of real equivalised household disposable income, after housing costs, in 2022-23 prices: GB/UK



Notes: Adjusted for inflation using CPI excluding housing costs. Projections after 2021-22, including interest rate projections made in August 2023. GB from 1994-95 to 2001-02. Source: RF analysis of DWP & IFS, Households Below Average Income; and RF projection including use of the IPPR Tax Benefit Model; DWP, Households Below Average Income; ONS, Wealth and Assets Survey; ONS data; Bank of England forecasts; OBR forecasts.

# Spending on older age groups rose by 0.5 per cent of GDP since 2009-10

Spending on the State Pension, other pensioner benefits and old-age health as a proportion of GDP: UK



Notes: See report for full chart notes: M Broome et al., Old age tendencies: The impact of tax and benefit changes on intergenerational fairness ahead of the 2024 general election, Resolution Foundation, June 2024.

Source: RF analysis of DWP, Benefit expenditure and caseload tables 2024; HM Treasury, Spring Budget 2024; OBR, Fiscal risks and sustainability, July 2022; OBR, Economic and Fiscal Outlook, various; ONS, mid-year population estimates and national population projections, various.

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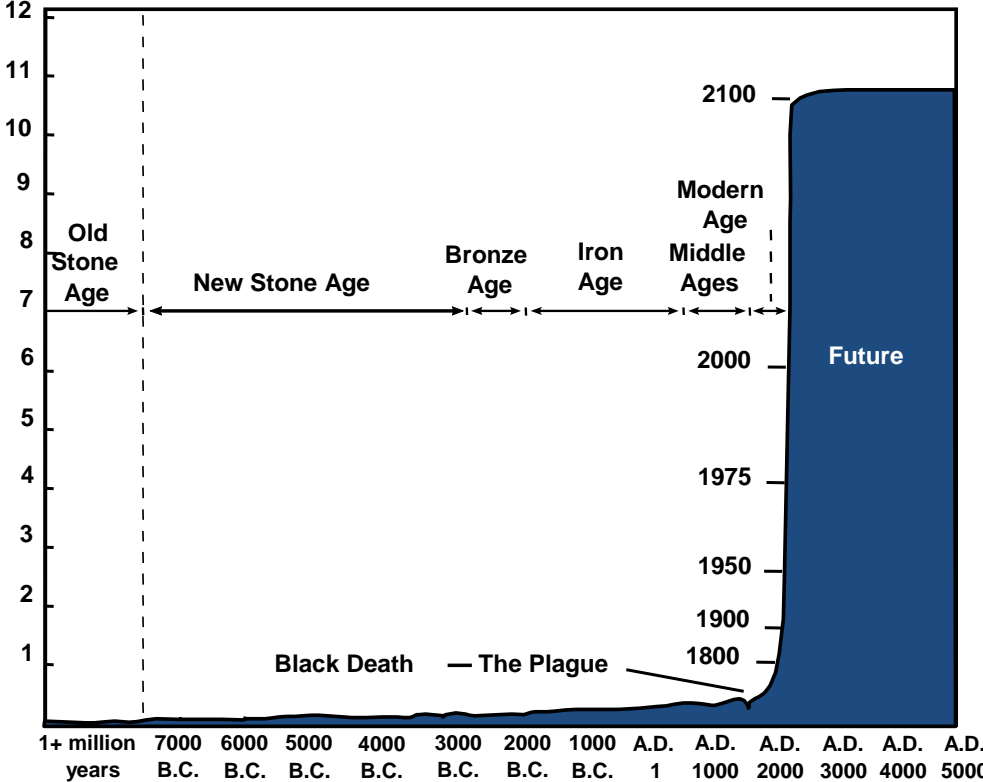
# The challenge of demographic change – globally and locally

Jane Falkingham  
ESRC Centre for Population Change  
University of Southampton

Economic Growth and the Challenge of Demographics  
3<sup>rd</sup> December 2024

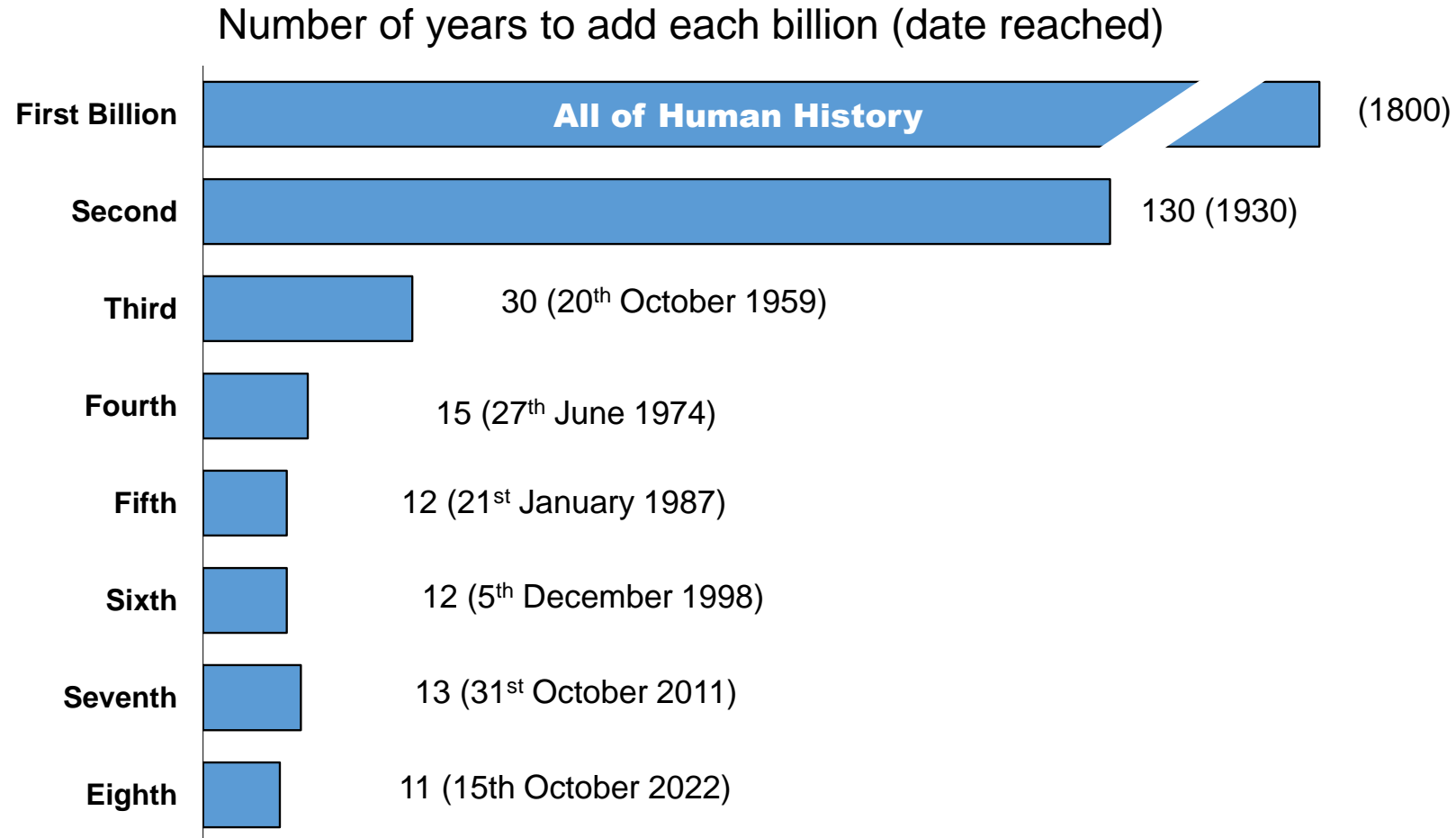
# World Population Growth Through Human History

Billions



Source: Population Reference Bureau; and United Nations, *World Population Projections to 2100* (1998).

# World Population Growth, in Billions

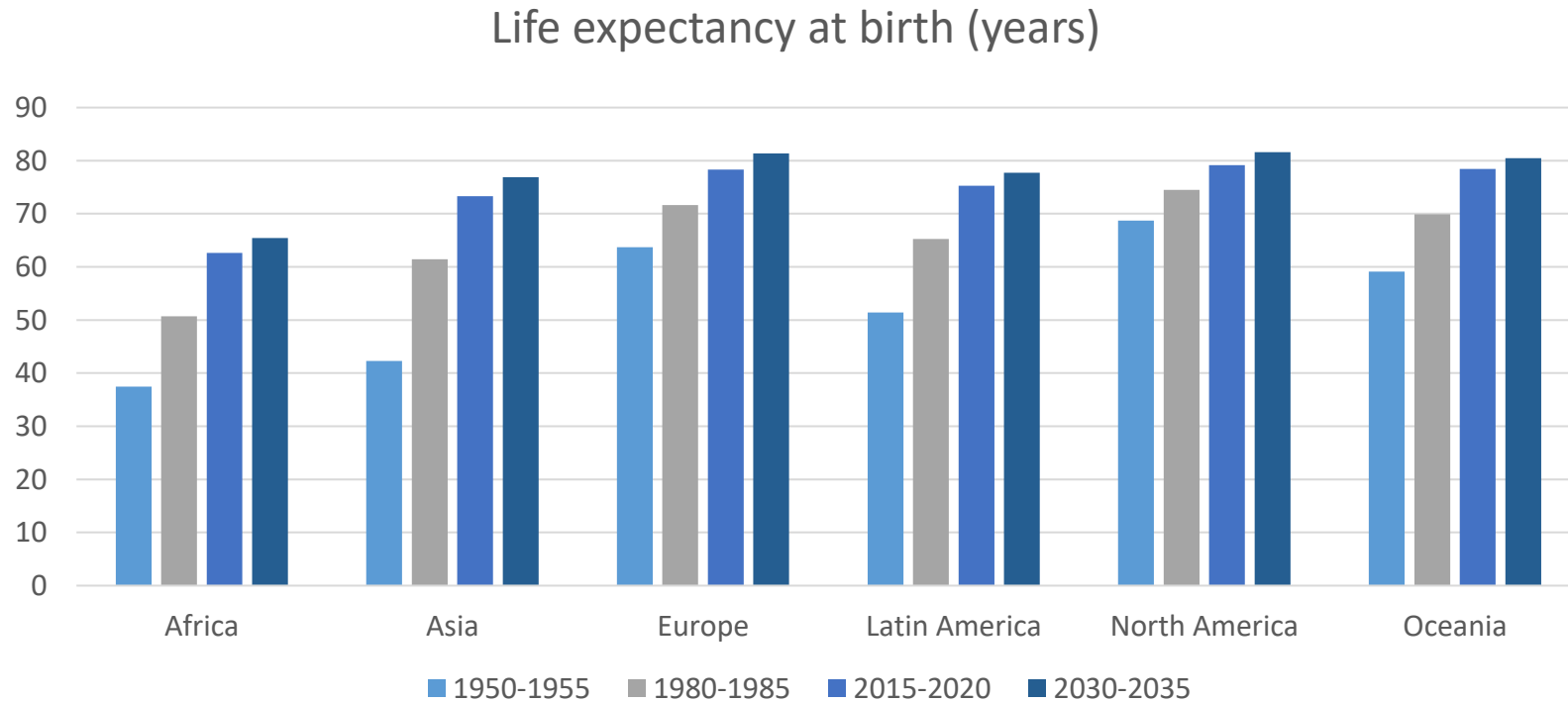


Sources: First and second billion: Population Reference Bureau.

Third through eight billion: United Nations, *World Population Prospects: The 2024 Revision*, 2024.

# Demographic shift (i): A healthier world

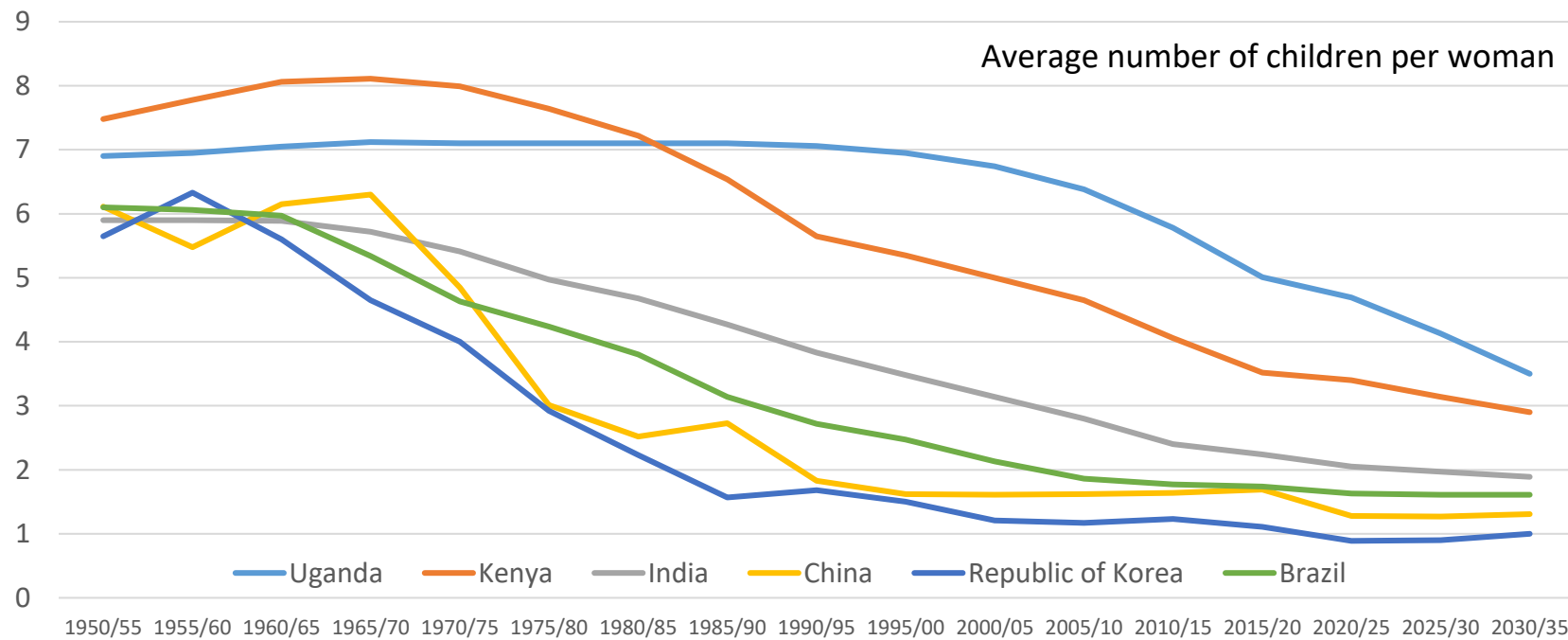
Trends in Life Expectancy, 1950-2035



Source: United Nations, *World Population Prospects: The 2022 Revision*, 2022.

# Demographic shift (ii): A world with smaller families

## Trends in Total fertility, 1950-2035



Source: United Nations, *World Population Prospects: The 2022 Revision*, 2022.

# Demographic shift (iii): An older population

The combination of more people living longer and have fewer babies means that the global population is ageing. In 2024:

- 14.5% of world pop. is aged 60+
- 1,185 million people aged 60+

Globally, the population aged 60 and over is growing faster than all younger age groups; increasing at a rate of about 3% per annum

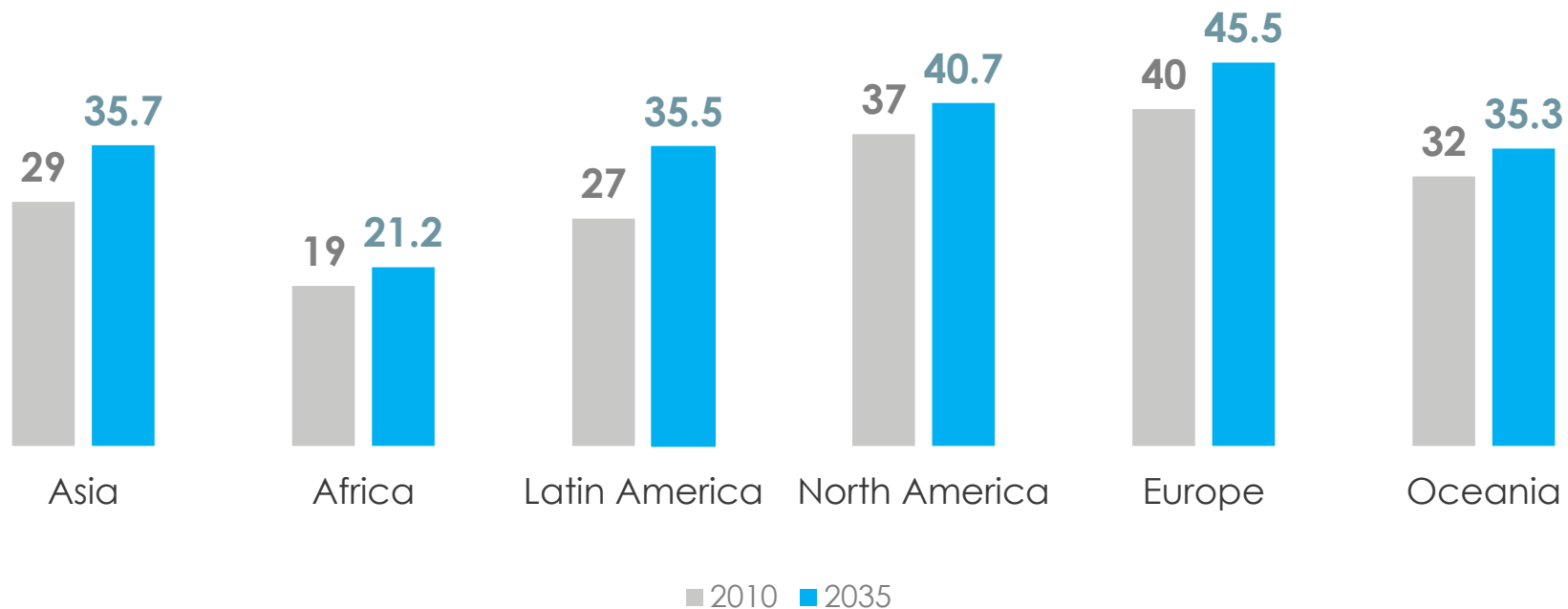
- 2.0% world pop. aged 80+
- 164 million people aged 80+



Source: United Nations, *World Population Prospects: The 2024 Revision*, 2024.

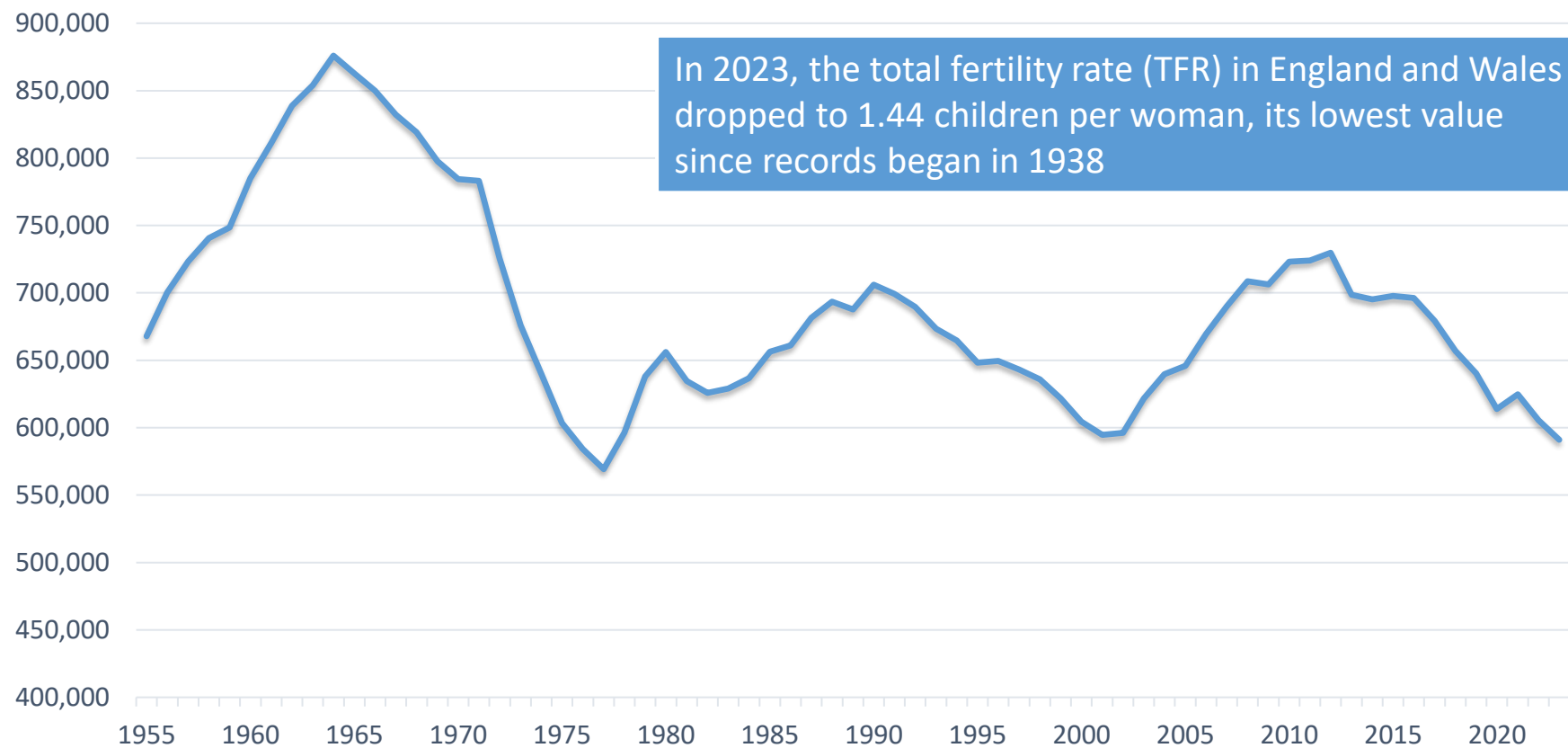
# The global population is getting older

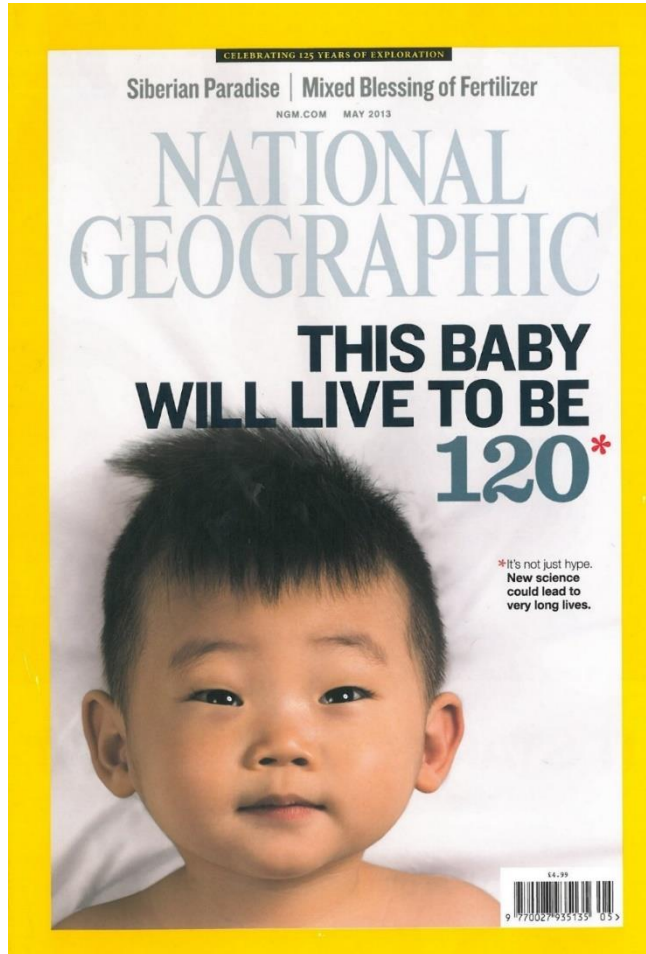
Median Age (Years), Estimates for 2010 and 2035



Source: United Nations, *World Population Prospects: The 2024 Revision*, 2024.

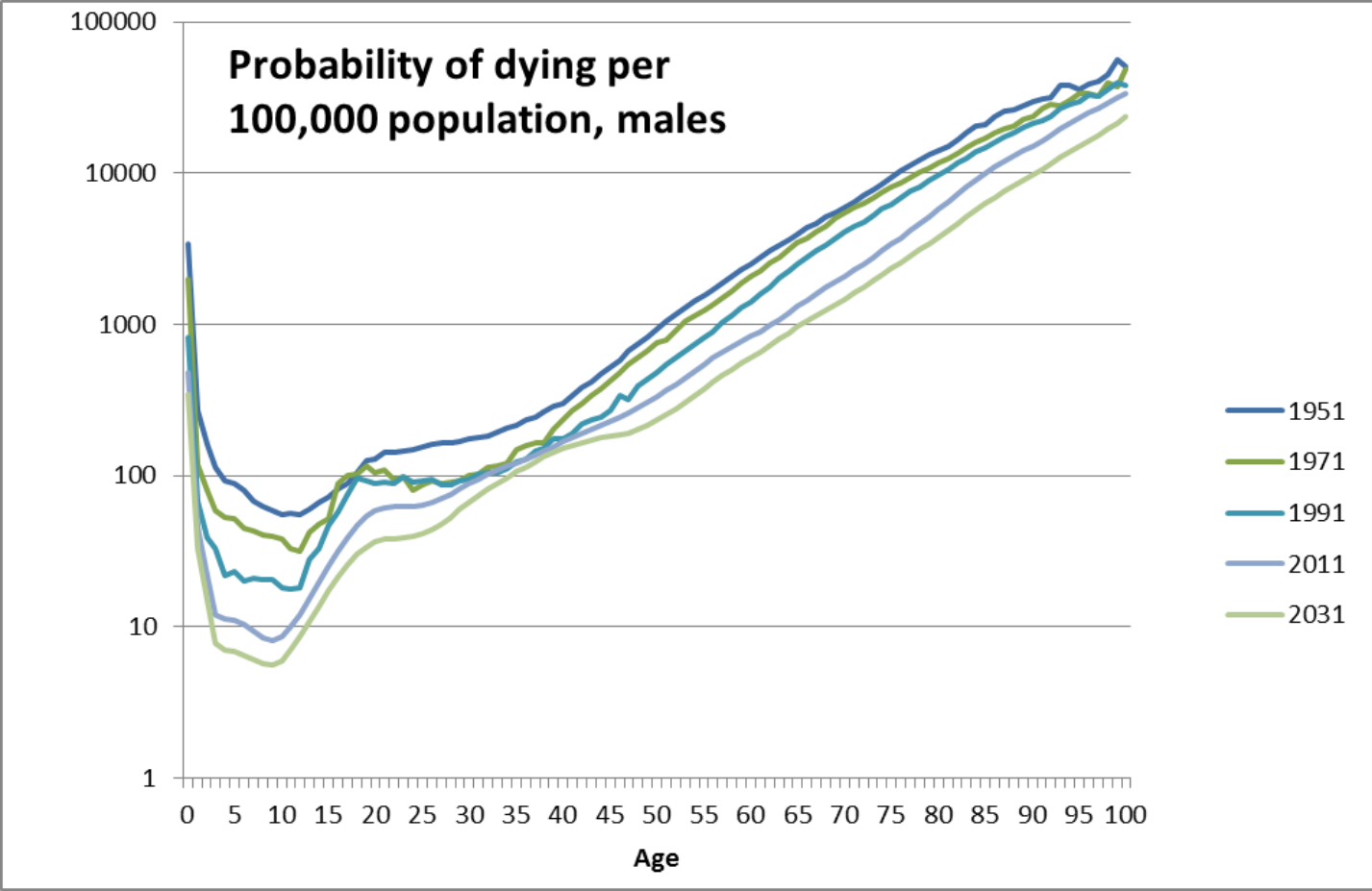
# Total births, England and Wales, 1955-2023





# Longer lives: time to rethink the meaning of age?

Changes in the age at which there is a 1% and 10% probability of dying, 1951-2031



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## Longer lives: time to rethink the meaning of age?

	Age at which there is 1% chance of dying	Age at which there is 10% chance of dying
Men 1951	50	75
Men 2011	62	84
<b>Men 2021</b>	<b>65</b>	<b>87</b>
Women 1951	56	78
Women 2011	67	87
<b>Women 2021</b>	<b>69</b>	<b>88</b>

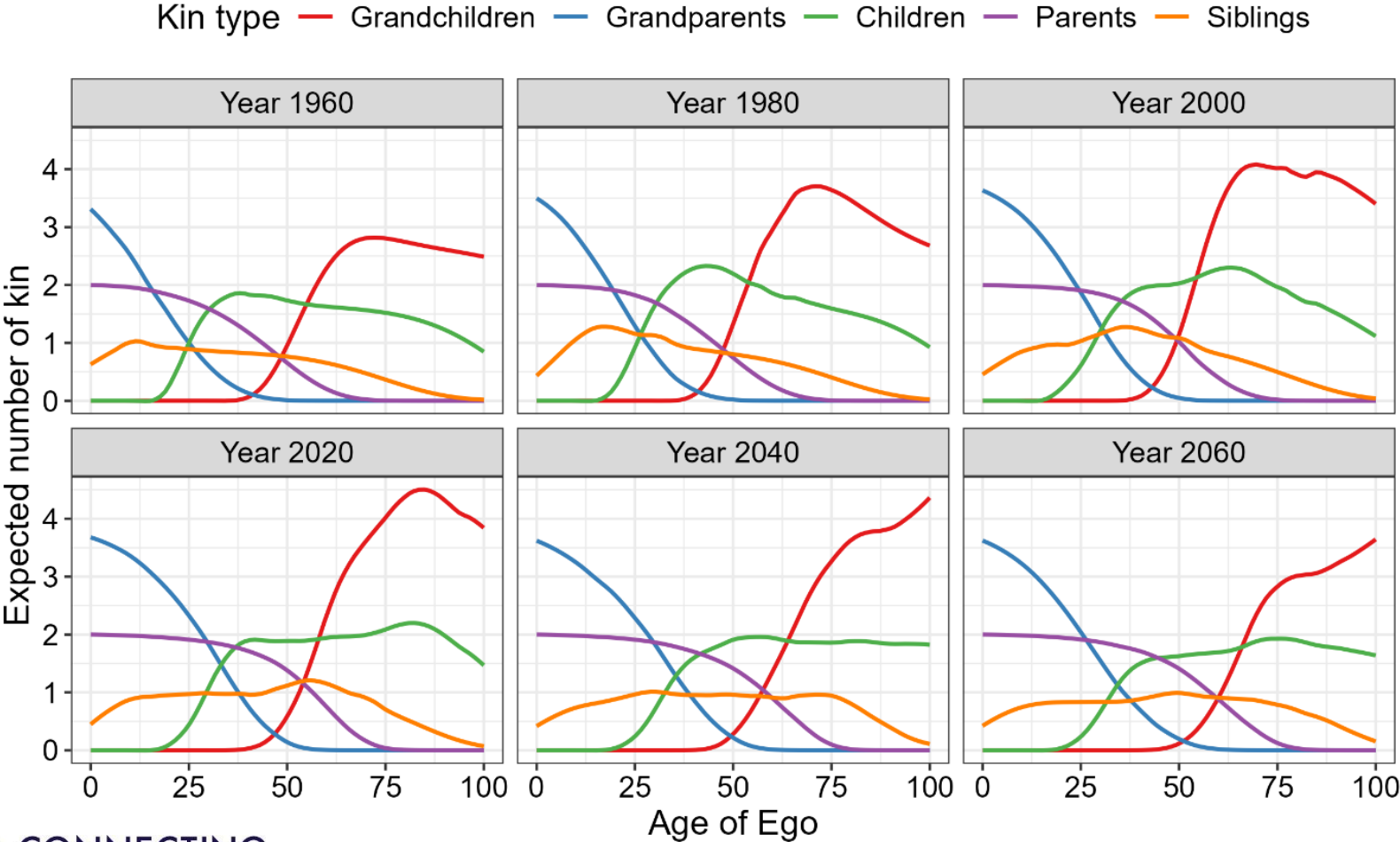
**For men, 65 is the new 50; and 87 is the new 75!**

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But big differences in life expectancy by region (and social class) still remain

- In 2018-2020 lowest life expectancy at birth was in Glasgow city, 73.14 years for men and 78.28 years for women
- Highest life expectancy at birth for men was 87.74 in Westminster and for women was 87.86 years in Kensington & Chelsea
- Gap of 11.6 years for men and 9.58 years for women
- And, although life expectancy has generally been improving (except for Covid-19) the gap has been widening

# Changes in kinship: More years with multiple kin – longer family lives



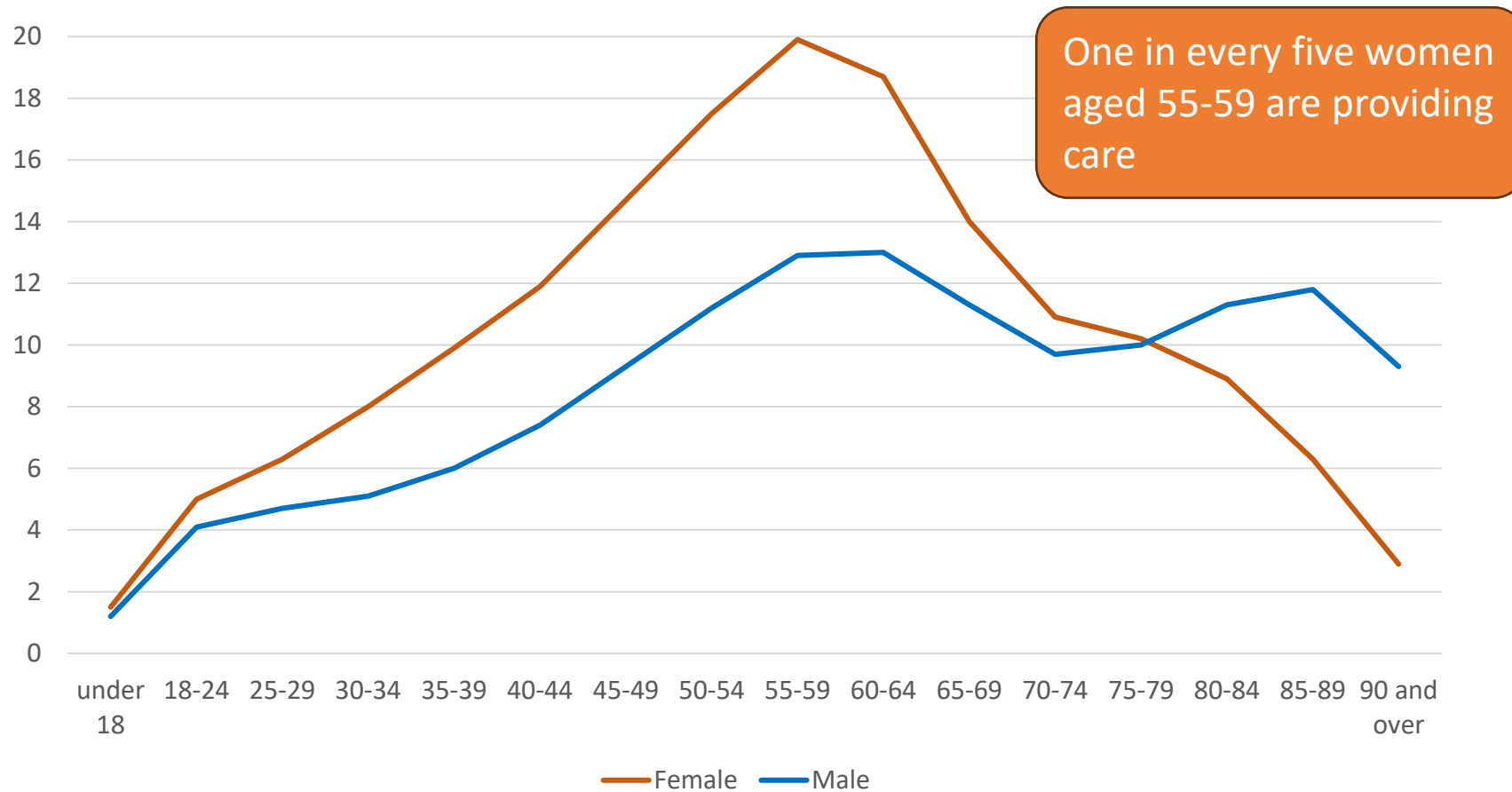
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## Caught in the middle - the emergence of the “double sandwich” generation.

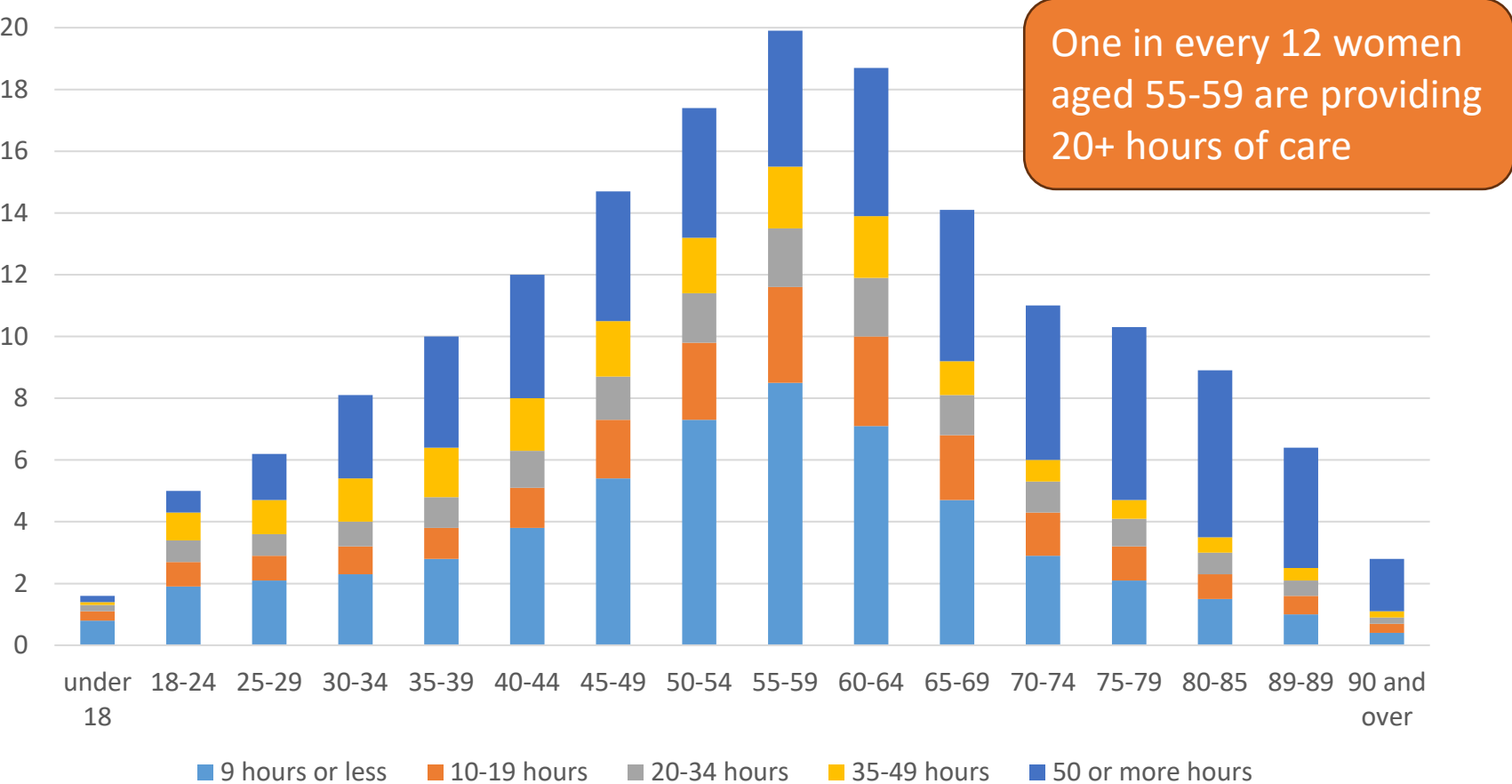
Mean expected number of surviving kin at age 50 by birth cohort.

Kin type	Cohort (year of birth)		
	1938	1946	1964
Grandparents	-	0.04	0.1
Parents	-	0.9	1.3
Siblings	0.9	1.0	1.2
Children	2.3	2.1	1.9
Grandchildren	1.4	1.3	0.7

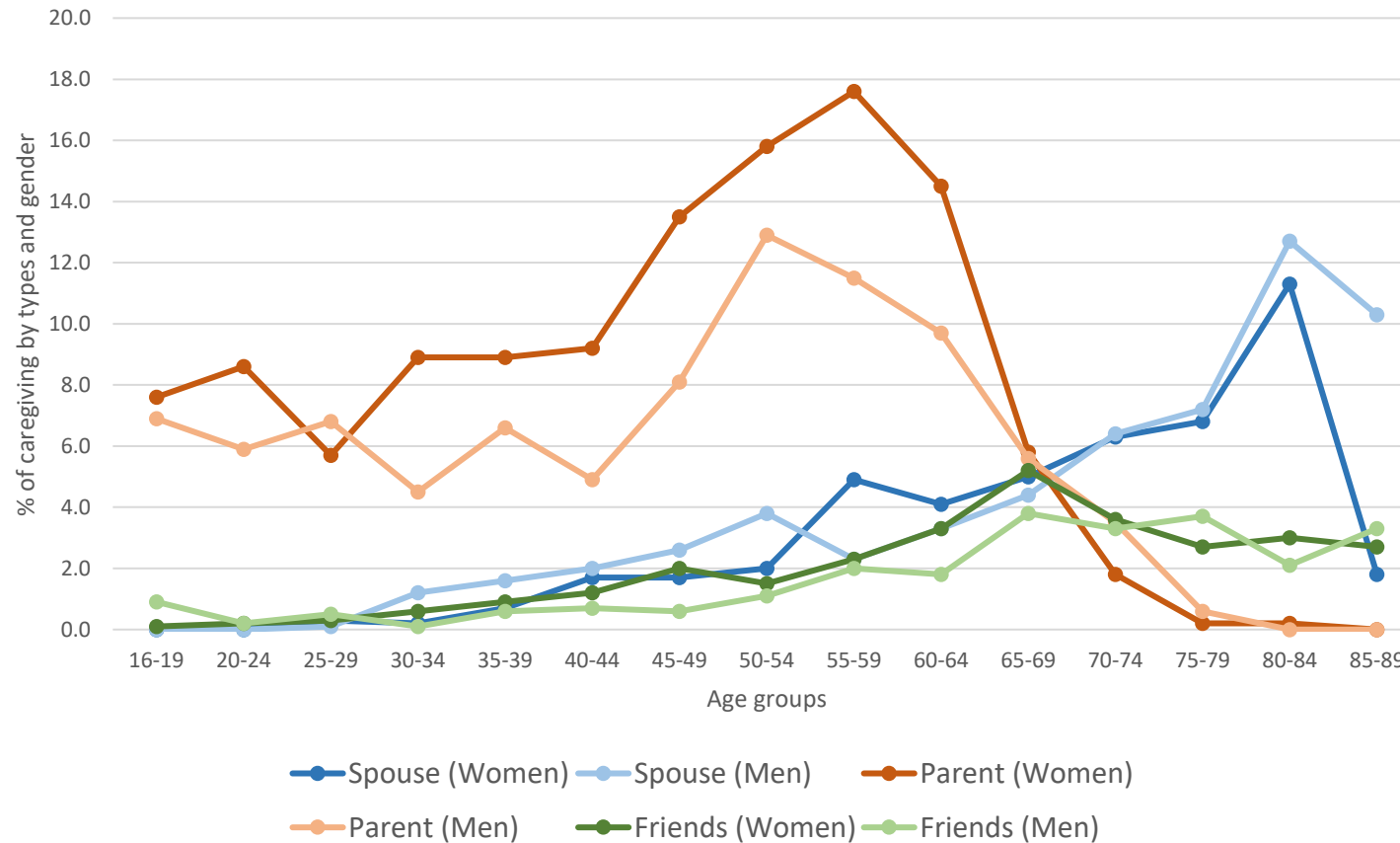
# Percentage of people providing unpaid care by age and sex, 2021, England



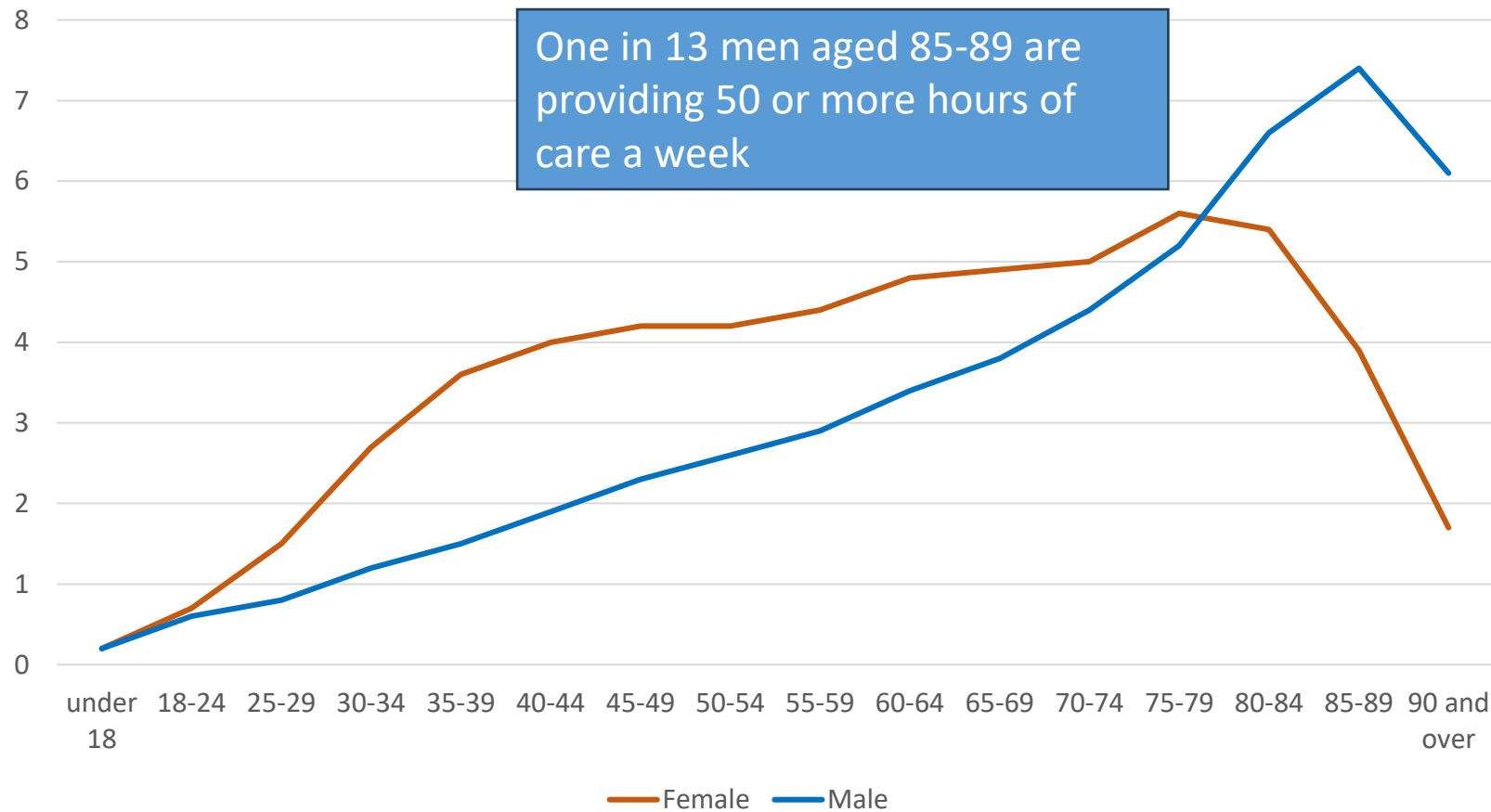
# Percentage of females providing unpaid care by age and hours of care provided per week, England, 2021



# Percentage providing unpaid care by relationship to recipient, age and sex, 2020, UK

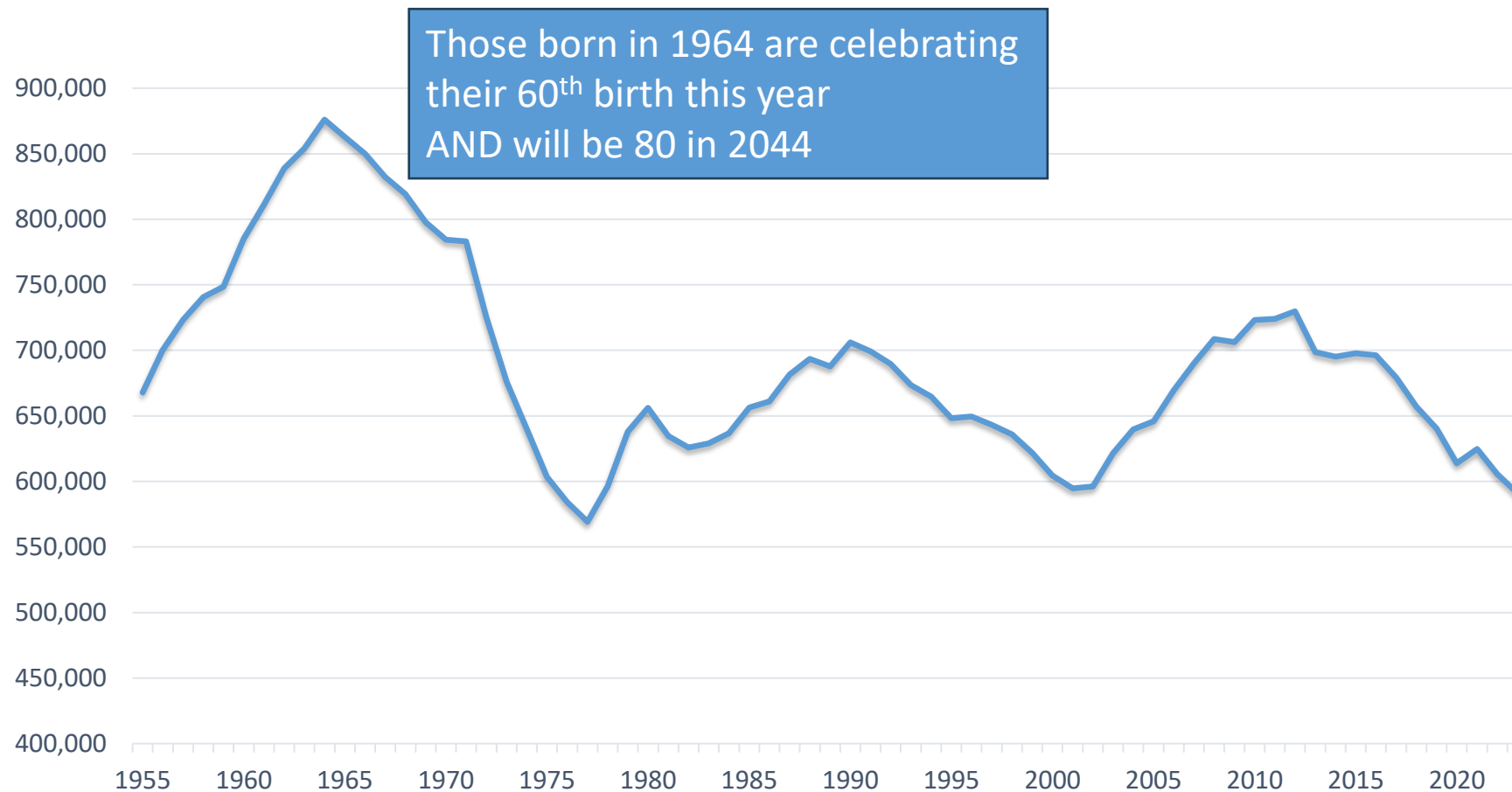


# Percentage of people providing unpaid care of 50 or more hours per week by age and sex, 2021, England



A quick forward look

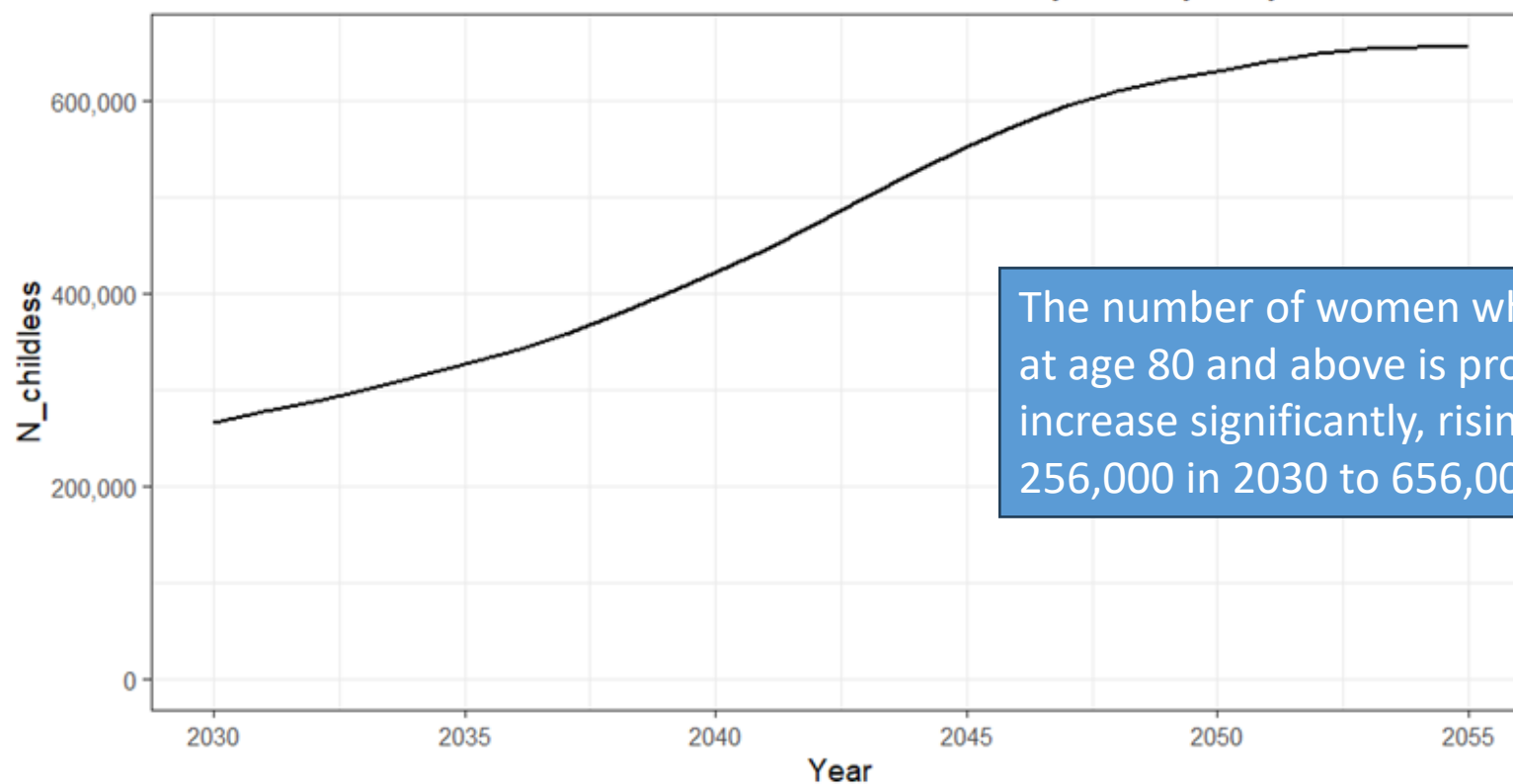
# Total births, England and Wales, 1955-2023



# Ageing without children

## Projected Childless Female Population at age 80+

Source: Calculations based on ONS Interim NPP 2021 and Fertility Rates by Parity 1938-2020



The number of women who are childless at age 80 and above is projected to increase significantly, rising from 256,000 in 2030 to 656,000 in 2055

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# Population change has significant implications for tax revenue.

Population may force changes in how we raise tax revenue.

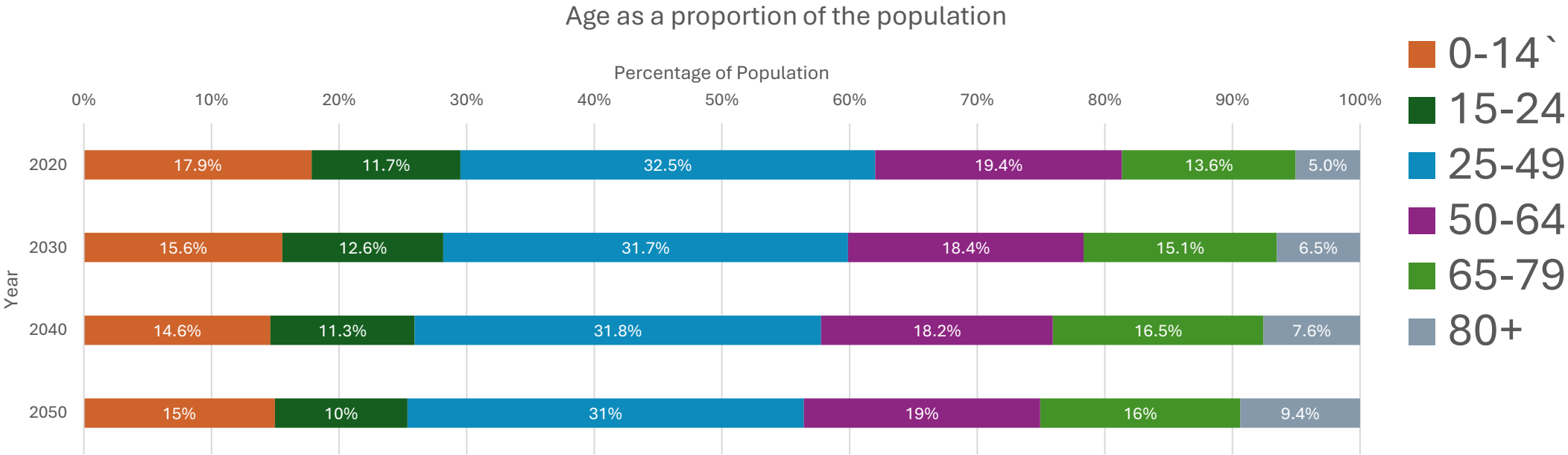


# Britain's Changing Population Shape Will Require a Re-Think on Taxes

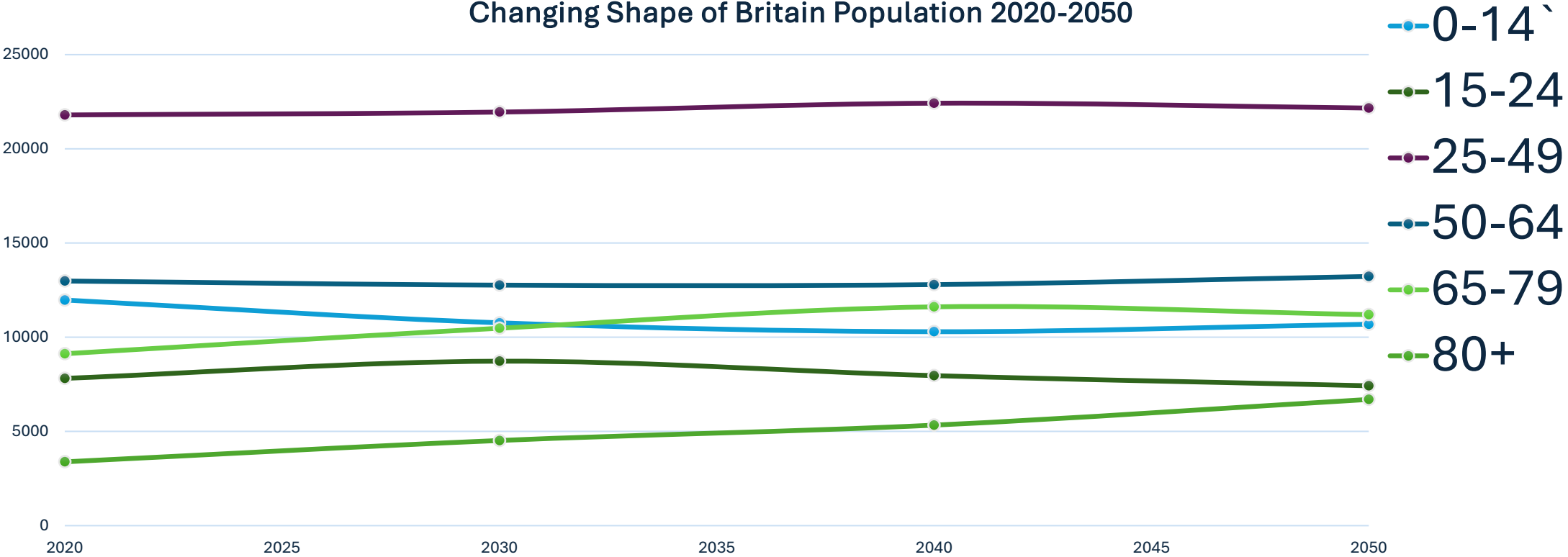
- The percentage of children and young adults will contract sharply by 2050.
- By 2050, the percentage of population aged 65+ will be around 25%.
- By 2050, the percentage of population aged 80+, the group requiring the highest per capita social expenditure will broadly double from current levels. This group also provides among the lowest per capita contribution to tax.



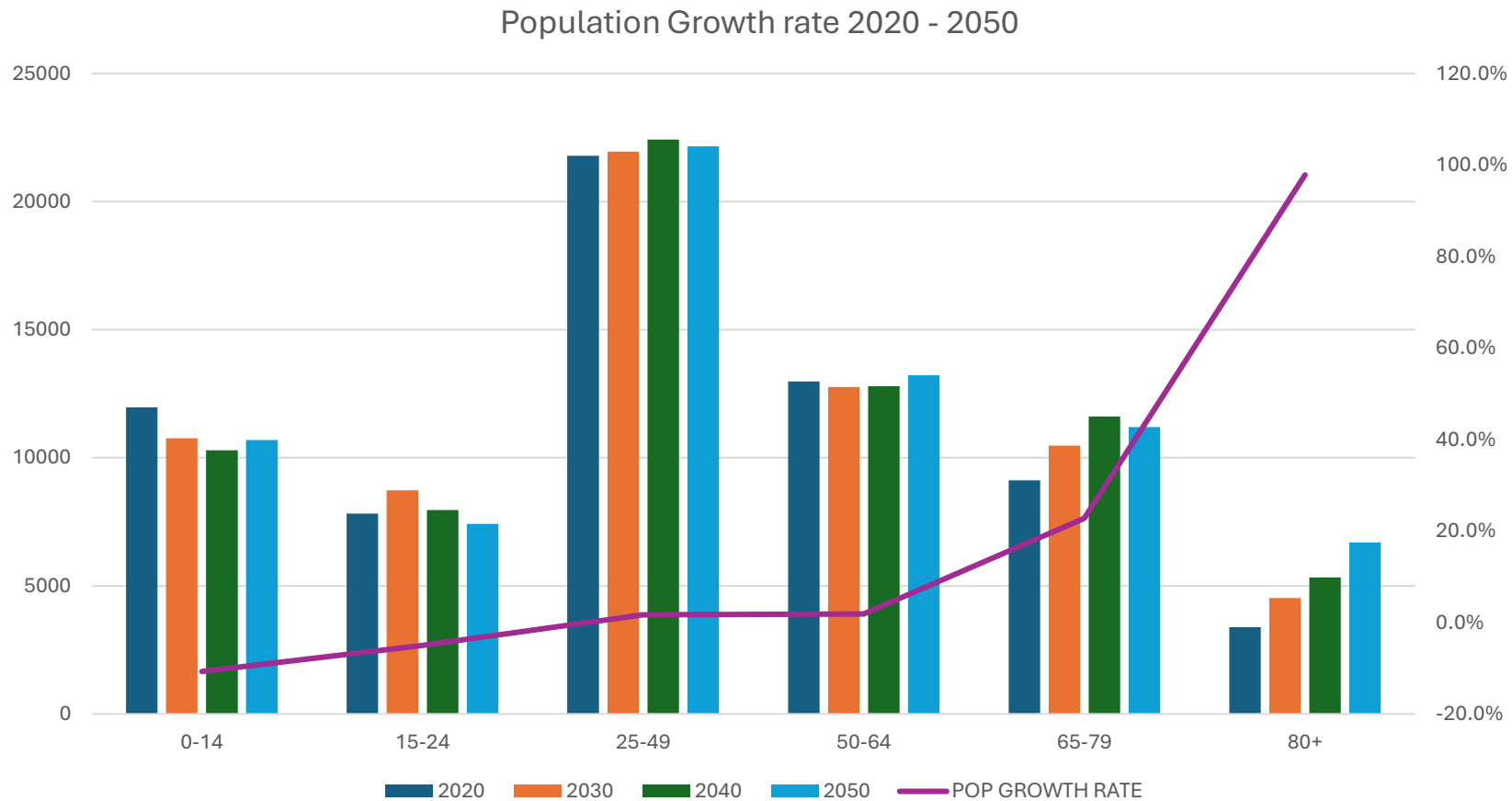
# The shape of Britian's population will change significantly by 2050



# By 2050, the number of children aged 0-14 will be fewer than adults aged 65-79.

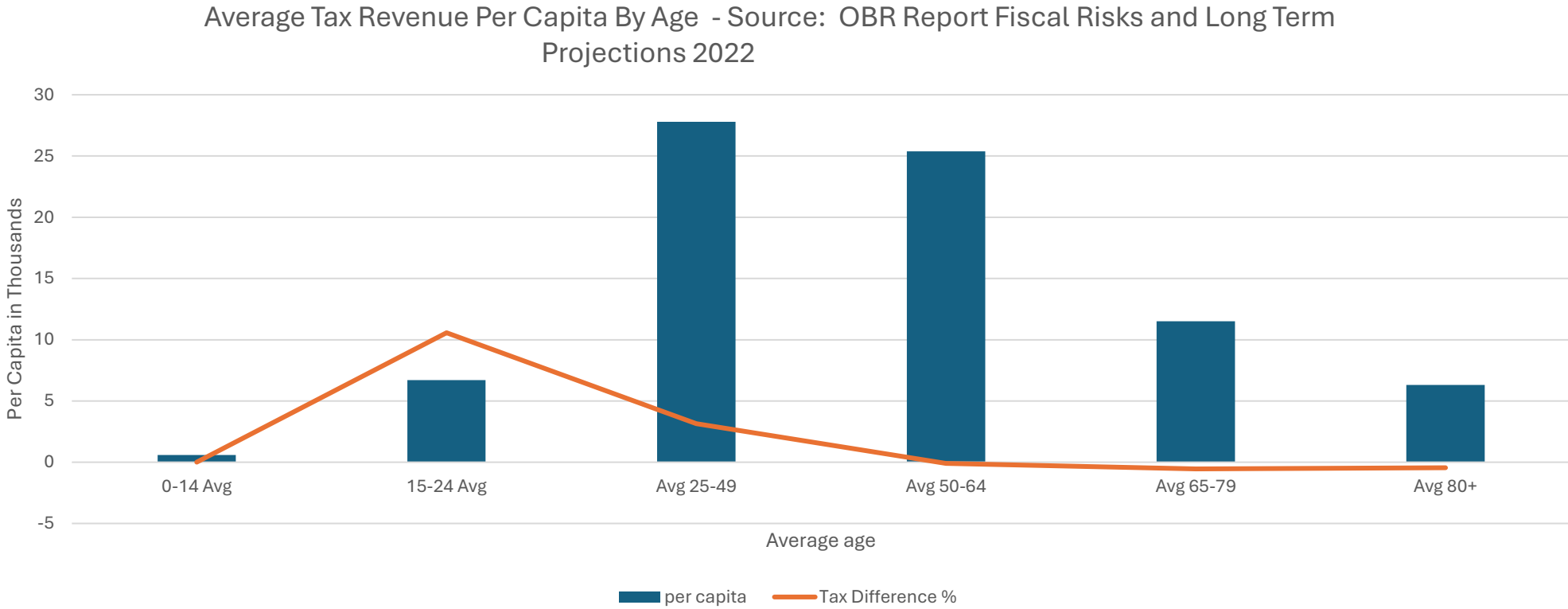


# Population Growth rate 2020 - 2050



The percentage of Britain's population making the highest contributions to tax revenue will fall by 2050.

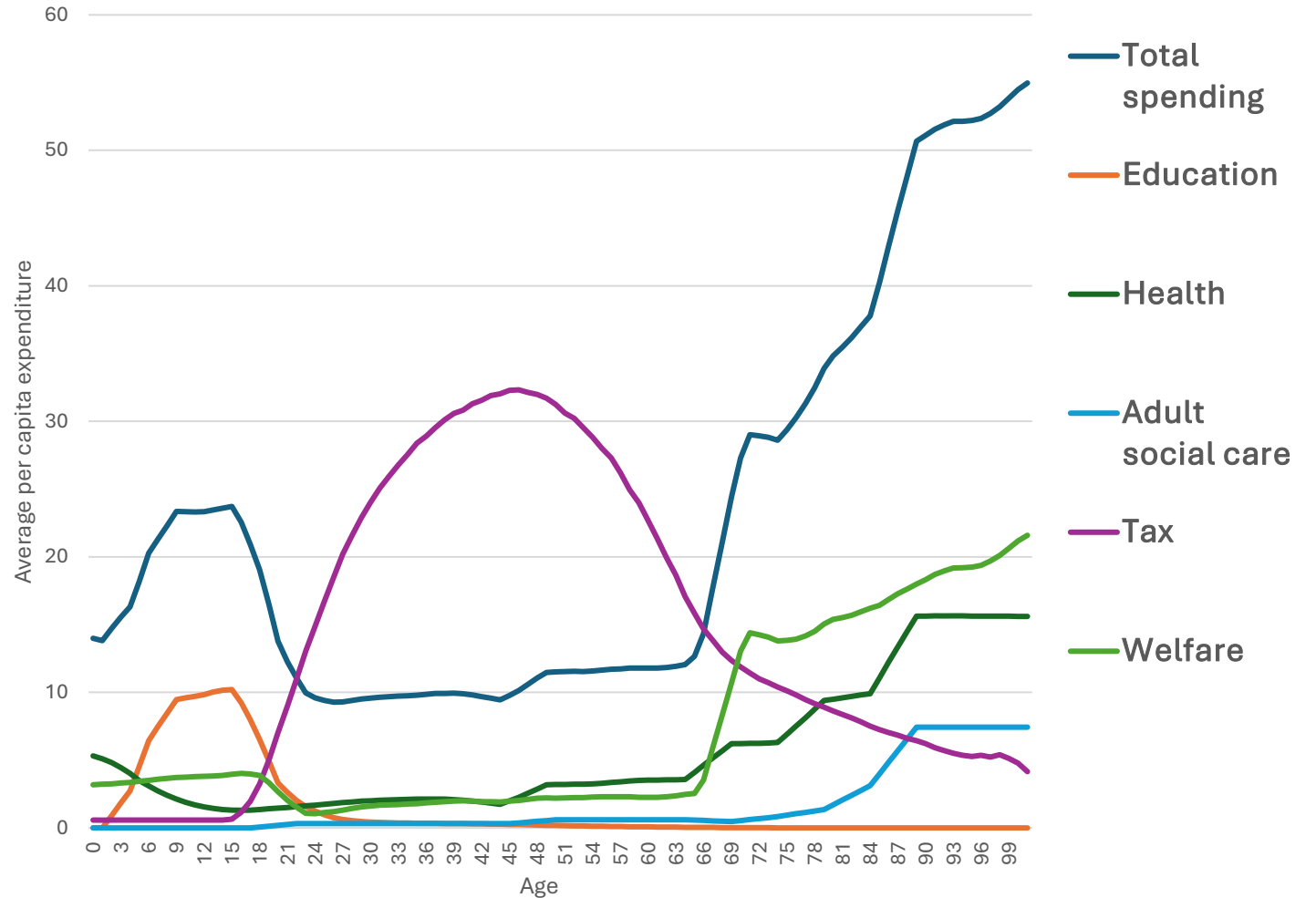
Tax revenue collected per capita falls sharply for those aged 49 and over. At age 80+, tax revenue is roughly one-fifth of that for those of prime working age





As Britain population ages, tax revenues fall while per capita expenditure rises

- Per capita tax receipts peak among workers in their 40s and fall sharply thereafter.
- Total per capita expenditure rises sharply after age 65.
- Per capita health spending rises sharply after age 75.



# Median weekly pay by age

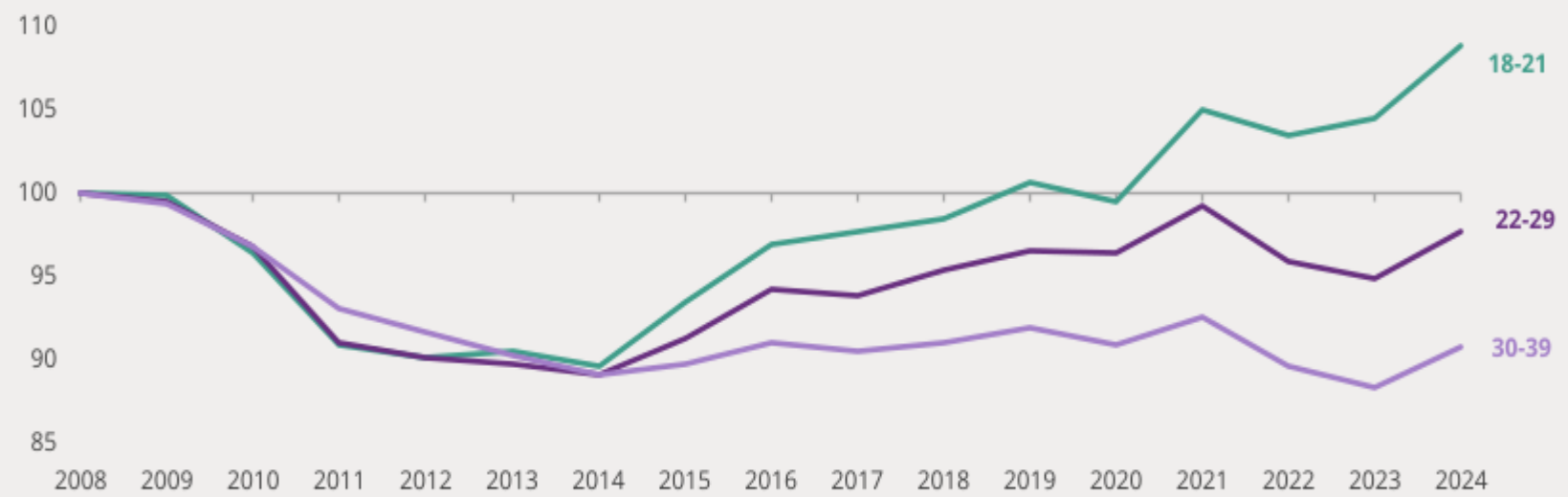
April 2024, full-time employees



Revenue collection age 40-49 likely reflects the fact this age band has the highest median weekly pay.

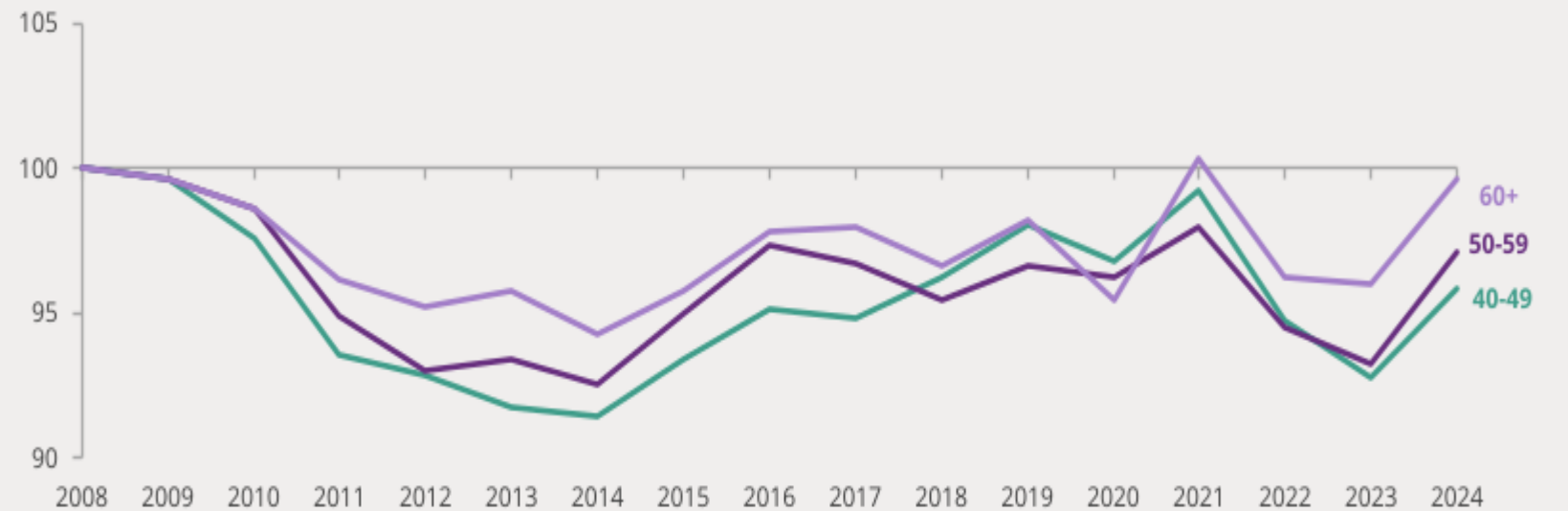
### Real median pay by age group 2008to 2024

Indexed to 2008=100, full-time employees, ages 18-39



### Real median pay by age group, 2008to 2024

Indexed to 2008=100, full-time employees, ages 40+



Source: :House of commons library  
Average earnings by age and region  
Source: ONS, Annual Survey of Hours and Earnings, 2002- 2024



# Reliance on Income tax is relatively recent

- Of Britain's 36 million of population in 1911 including just over 10 million children under age 15, only 1.2 million people had incomes high enough to be assessed for tax in 1913. #
- The following table was constructed by economist A.L. Bowley in 1920. Bowley calculated that those with incomes of £10,000 per year and over accounted for 0.0012 per cent of the total number of UK incomes in 1910 but just under 5.2 per cent of the total value of all incomes.
- War time inflation for goods and wages brought more workers into the income tax paying bracket.

**Table 3.1: The Distribution of Personal Incomes in the UK, 1910\***

Income Group	Size of Income £	Number of Incomes	Percentage of Incomes in Group of # of Incomes	Aggregate Value of Incomes (£ millions)	Percentages of Total Value of Incomes
A.	Under 160	18,850,000	94.52	1,055.00	56.357
B.	160-700	880,000	4.41	250	13.35
C.	700-5,000	200,000	1.0	415	22.167
D.	5,000-10,000	8,143	0.04	55.05	2.941
E.	10,000-20,000	2,903	0.0146	39.1	2.089
F.	20,000-45,000	1,026	0.005	29	1.549
G.	>45,000	327	0.0016	28.9	1.543

\* Bernard Waites, *A Class Society at War: England 1914-19* (Leamington Spa, Berg, 1987):87.

Table Source: Arthur Lyon Bowley, *The Change in the Distribution of the National Income 1880-1913* (Oxford, Clarendon Press, 1920).

**Table 3.2: The Distribution of Personal Incomes in the UK, 1919–20 Fiscal Year\***

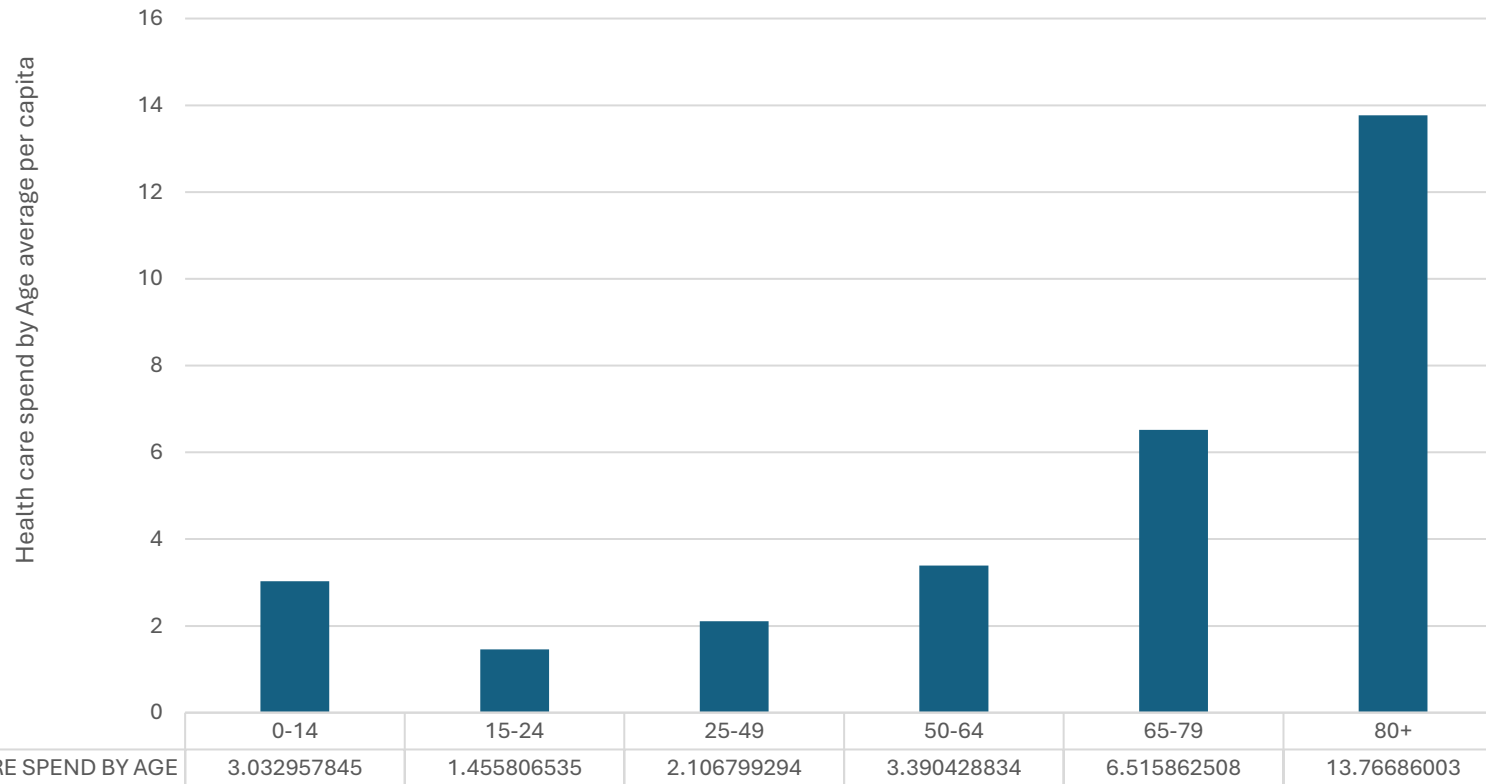
Income Group	Size of Income £	Number of Incomes	Percentage of Incomes in Group of # of Incomes	Aggregate Value of Incomes (£ millions)	Percentages of Total Value of Incomes
A.	Below £400	20,057,000	96.43	2,546,044	70.98
B.	£400-£1,750	642,270	3.08	479,279	13.00
C.	£1,750-£12,500	94,098	0.45	361,684	10.08
D.	£12,500-£25,000	4,247	0.02	74,749	2.08
E.	Above £25,000	2,385	0.01	125,423	3.50

\* Waites, *Class Society at War*, 87.

Table Source: Board of Inland Revenue, 64th Annual Report

# Older adults may be more capable of work than we assume.

HEALTH CARE SPEND BY AGE



- Raising state pension age may help boost tax revenue collection.

# Changing shape of Britain population

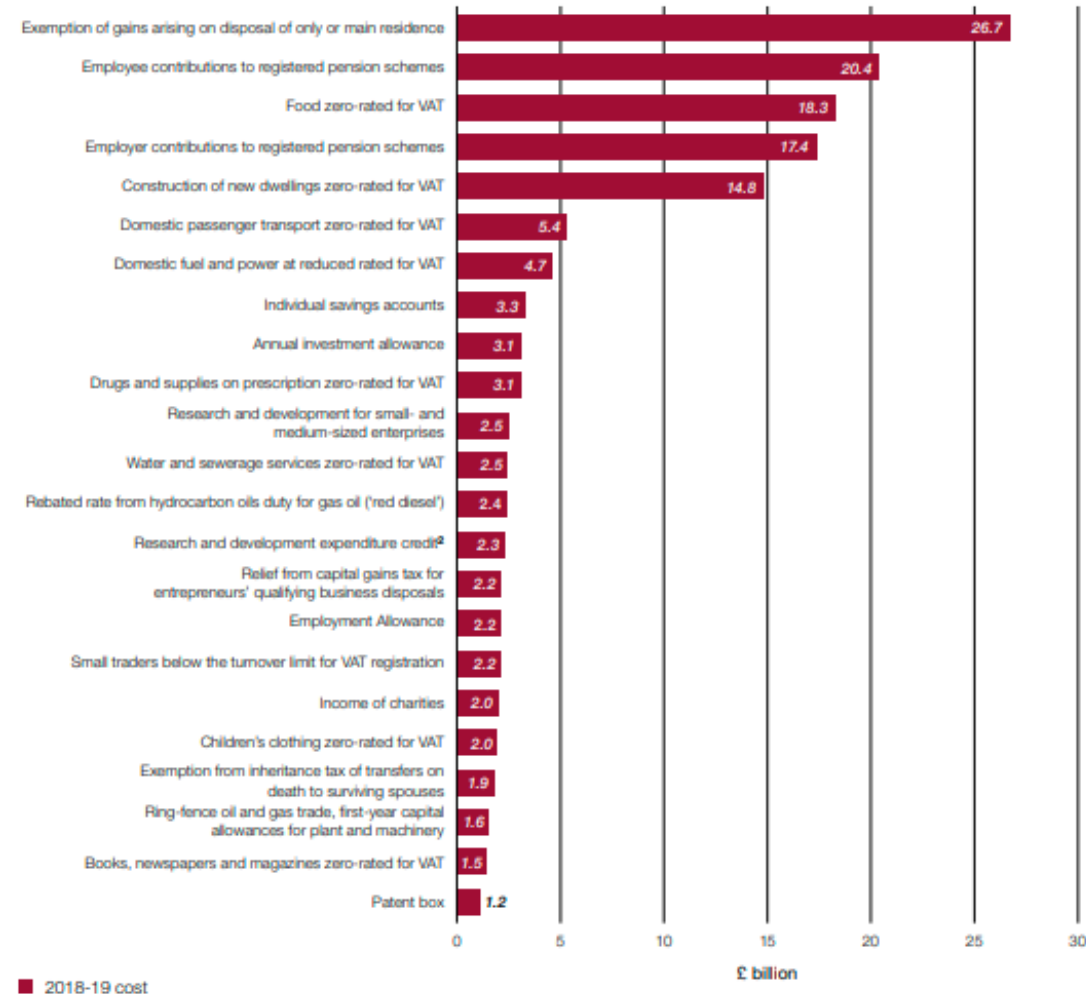
- May force us to make hard choices on whom we tax and how.
- Levying capital gains tax on the sale of a primary residence maybe one choice . Freedom from capital gains tax on the sale of a primary residence is the single largest source of tax expenditure.

**Figure 3**

Cost of the largest tax expenditures in 2018-19 for which estimates are available

The 23 largest tax expenditures had a forecast cost of £143 billion, 92% of the forecast cost of all tax expenditures.

The top five cost £98 billion (63%)<sup>1</sup>



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# Population, Immigration and Work

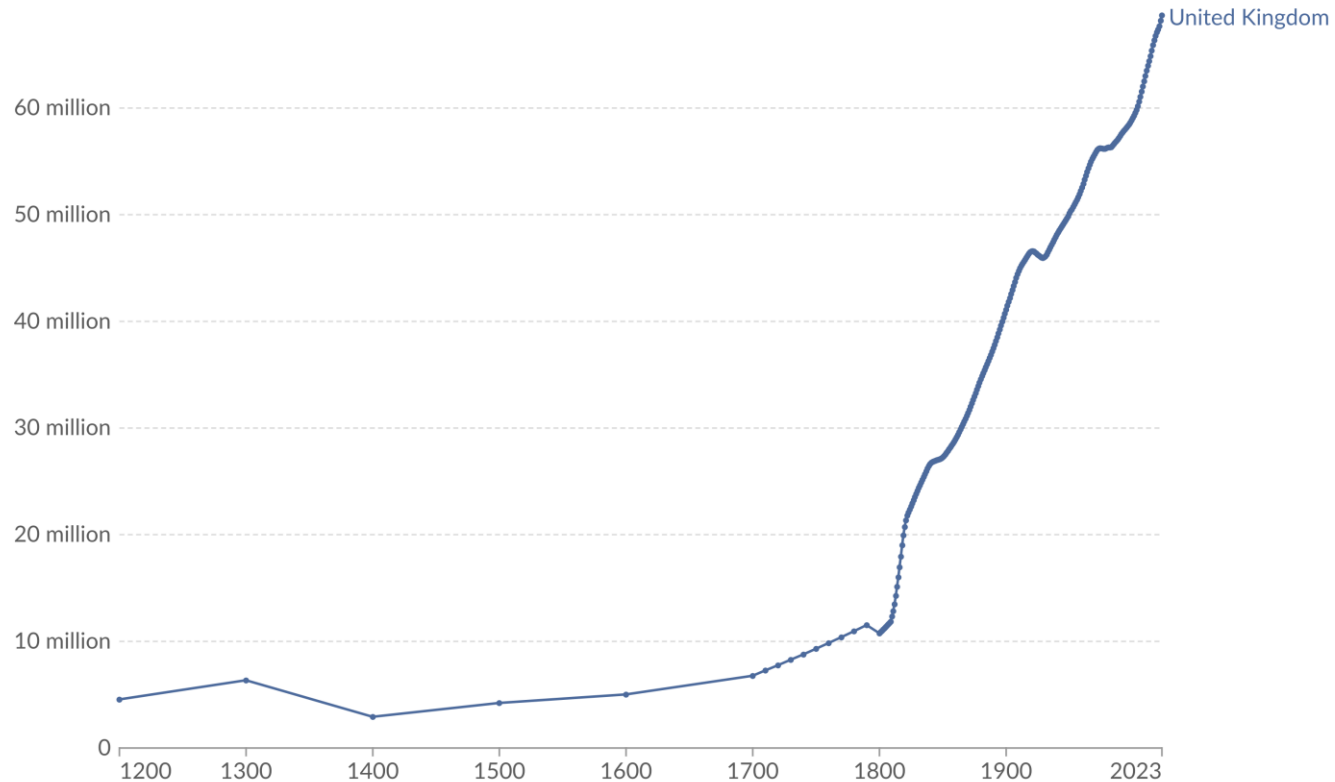
Brian Bell

Migration Advisory Committee & KCL

# UK Population since 1200....

Population, 1200 to 2023

Our World  
in Data

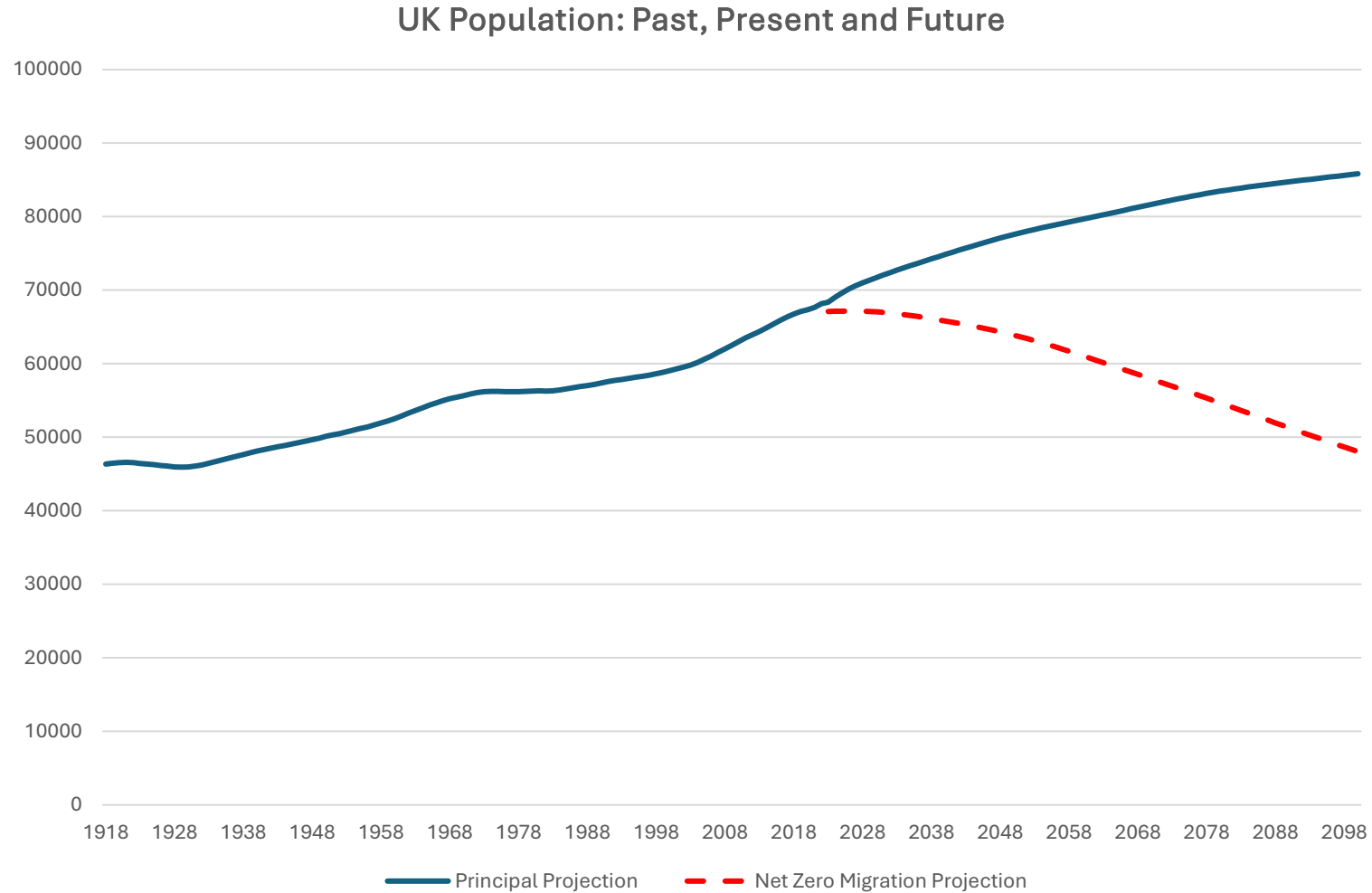


Data source: HYDE (2023); Gapminder (2022); UN WPP (2024)

Note: Historical country data is shown based on today's geographical borders.

OurWorldinData.org/population-growth | CC BY

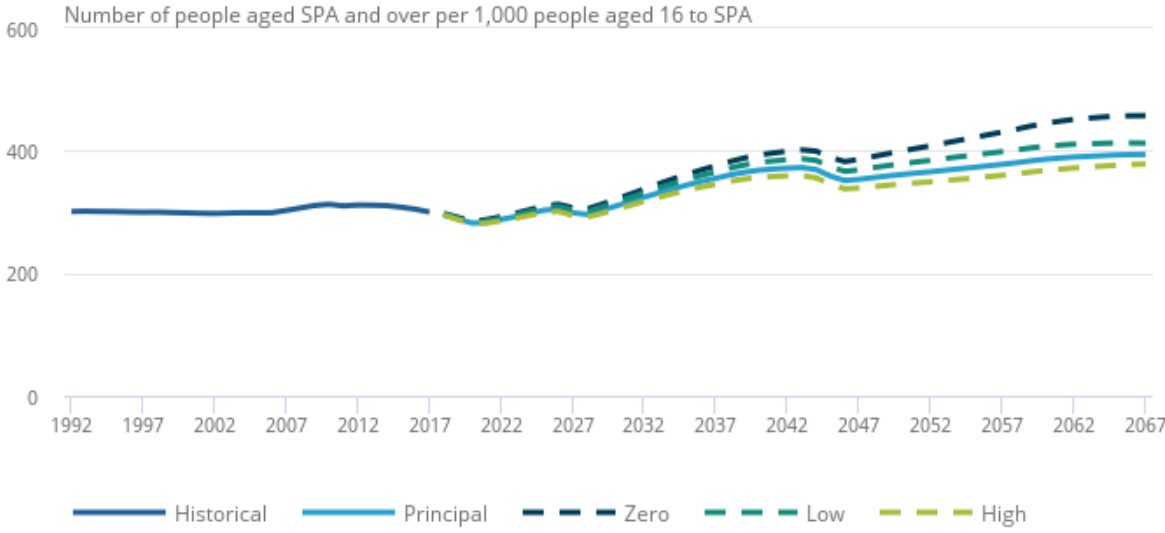
# ... future Population and Net Migration



# What migration can't solve...

Figure 5: The Old Age Dependency Ratio is projected to increase under a variety of migration scenarios

Historical and projected Old Age Dependency Ratio under four migration scenarios: principal, zero-migration, low migration and high migration, UK, 1992 to 2067

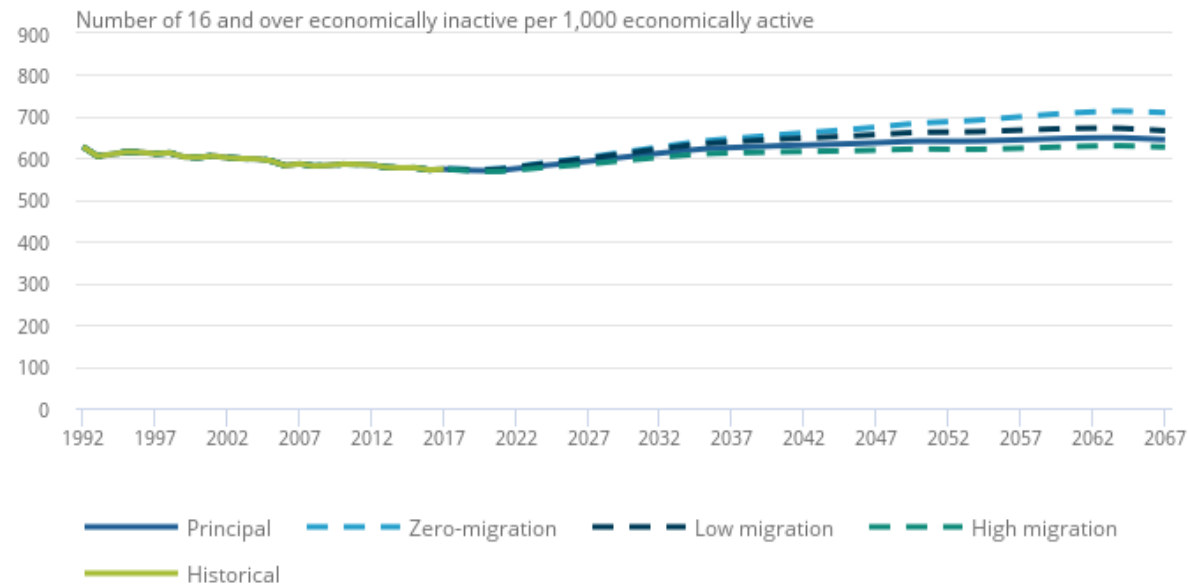


Source: Office for National Statistics - Mid-year population estimates (1992 to 2017), National population projections 2016 (2018 to 2067)

# .. without substantially higher net migration

Figure 7: If age-specific economic activity rates are projected forward, the Active Dependency Ratio is likely to show a slight increase

Historical and projected Active Dependency Ratio for the aged 16 years and over population, projected economic activity scenario, UK, 1992 to 2067



Source: Office for National Statistics - Mid-year population estimates (1992 to 2017), National population projections 2016 (2018 to 2067); Office for Budget Responsibility

# Net Migration Targets?

Category	Long run immigration level	Long run stay rate**	Contribution to steady-state net migration	% of all net migration
Family Visa	50,000	89%	44,500	15%
Work Visa	255,000	57%	144,387	48%
Study Visa	370,000	18%	65,860	22%
Other Visa	30,000	32%	9,600	3%
Ukraine Visa Schemes	0	70%	0	0%
BN(O)	20,000	90%	18,000	6%
Asylum	50,000	90%	45,000	15%
Resettlement refugee	5,000	100%	5,000	2%
EU pre/settled status*			0	0%
British*			-30,000	-10%
<b>TOTAL</b>	<b>780,000</b>		<b>302,347</b>	<b>100%</b>

*\*Net migration not calculated using return rates.*

*\*\*Rounded to nearest percentage point.*

*Sources: ONS LTIM (2023); Migrant Journey: 2022 report.*

# Immigration and Economic Growth

- Standard Solow model reminds us that higher population growth lowers the steady-state: capital widening.
- Looking around UK, this may seem a plausible description of last 20 years!
- Migrants may of course bring capital with them (I don't think we know). May be more of an issue for public investment/housing.
- Negative population effect not true in Romer-type models.
- What if migrants shift the production function?
- Different answer if interested in fiscal balance?

# Immigration and Labour Market

- In the 12 months to Sept 2024, the Govt issued 337k worker visas (181k in Health and Care, of which 131k are dependants).
- Levels like this would mean long-term net migration of 192k – is that (politically) sustainable?
- New Government focus on linking immigration and skills policy.
- NHS Workforce Plan/Social Care Negotiating Body.
- No suggestion of any easing on work routes for non-eligible occupations.

# Economic growth and the challenge of demographics

**Lord David Willetts**, President of the Resolution Foundation (Chair)

**Professor Brian Bell**, Chair of the UK Government Migration Advisory Committee and a Professor of Economics at King's Business School

**Professor Jane Falkingham**, Director of the ESRC Centre for Population Change at the University of Southampton

**Dr Norma Cohen**, Honorary Research Fellow at Queen Mary University of London