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# The impact of stalling life expectancy on the UK economy

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## Summary – life expectancy for over 50s is stalling

- The number of over 50s increased by 18% from 21.6m in 2010 to 25.5m in 2020 and changes to their health and longevity matter to the whole economy. This group was particularly impacted by the COVID-19 pandemic.
- After 60 years of almost continuous improvement and well before the COVID-19 pandemic, life expectancy in the UK began to stall threatening people's health and livelihoods.
- Life expectancy of people age 50+ is now 2.3 years lower than anticipated according to long-term trends
- This new piece of analysis looks at the life expectancy of UK adults, how much the economy is affected and what needs to happen next.

# Recent UK trends in life expectancy for adults in middle age

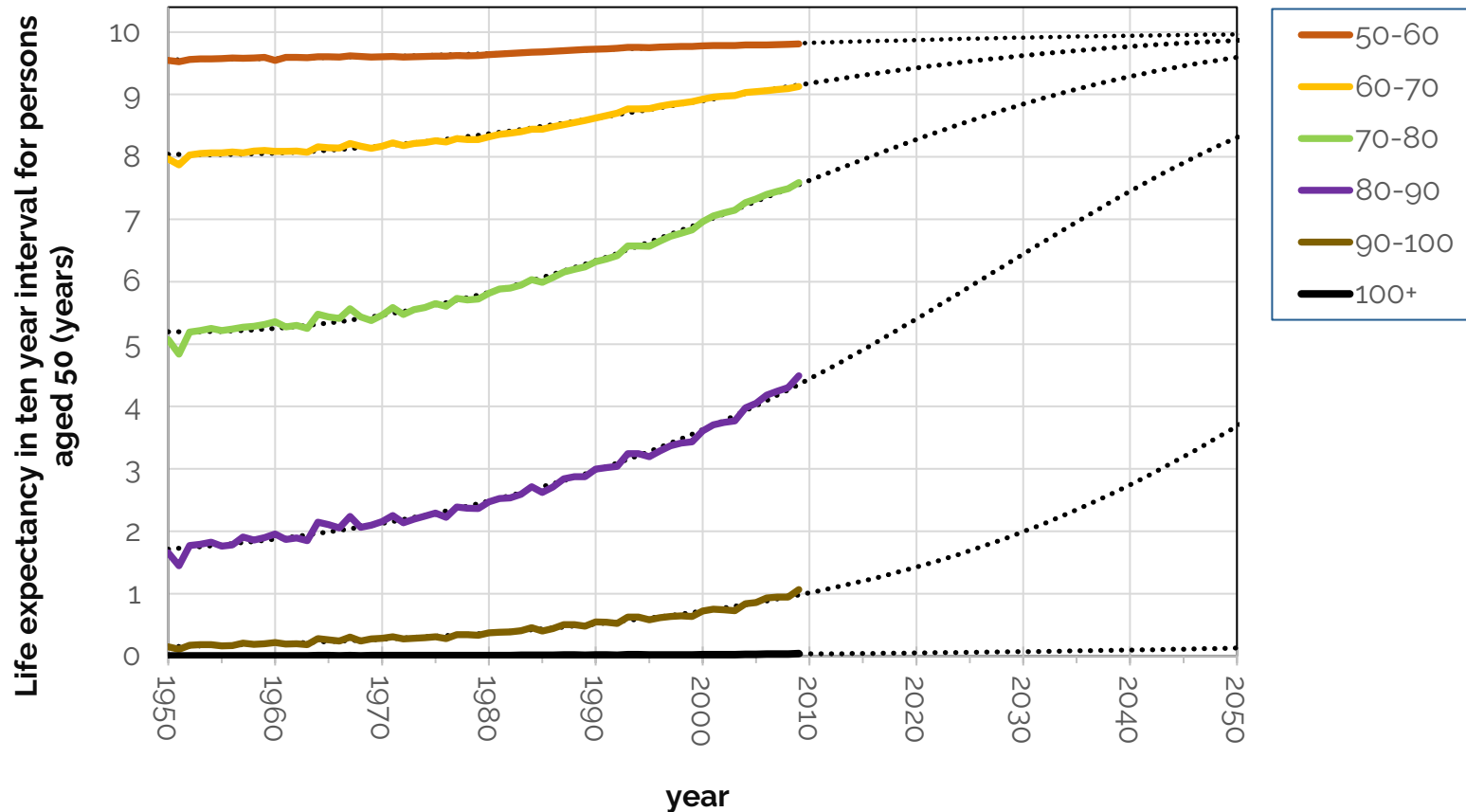
- Life expectancy in the UK began to stall after 2010 after 60 years of almost continuous improvement.
- In 2020 the pandemic led to large increases in mortality which has exacerbated the problem causing life expectancy to fall further.
- The majority of deaths occur in middle and older age, so the focus of our attention is the population aged 50 and older.
- The number of people over 50 increased by 18% in a decade – from 21.6m in 2010 to 25.5m in 2020
- People over 50 make up 38% of the population. Changes to longevity in this crucial age group matter to the whole economy

# A different way of looking at life expectancy

- As we age the probability of surviving the next ten years declines. For example, a partial life expectancy (PLE) of 5 years means you are only expected to live half of the next ten years. <sup>(1)</sup>
- For a 50-year-old in 2010 the probability of living to age 60 is 98% nearly 10 extra years, but for someone aged 70 the probability of living to 80 is only 76% or 7.6 extra years.
- We split life expectancy into ten-year steps for people aged 50, 60, 70, 80, 90 and 100 and compared trends at each age in PLE since 1950.
- We then measured how many years of life had been lost or gained in each decade of life.
- Finally, we estimated how combined changes to life expectancy from age 50 since 2010 have filtered down and impacted UK economic activity and health.

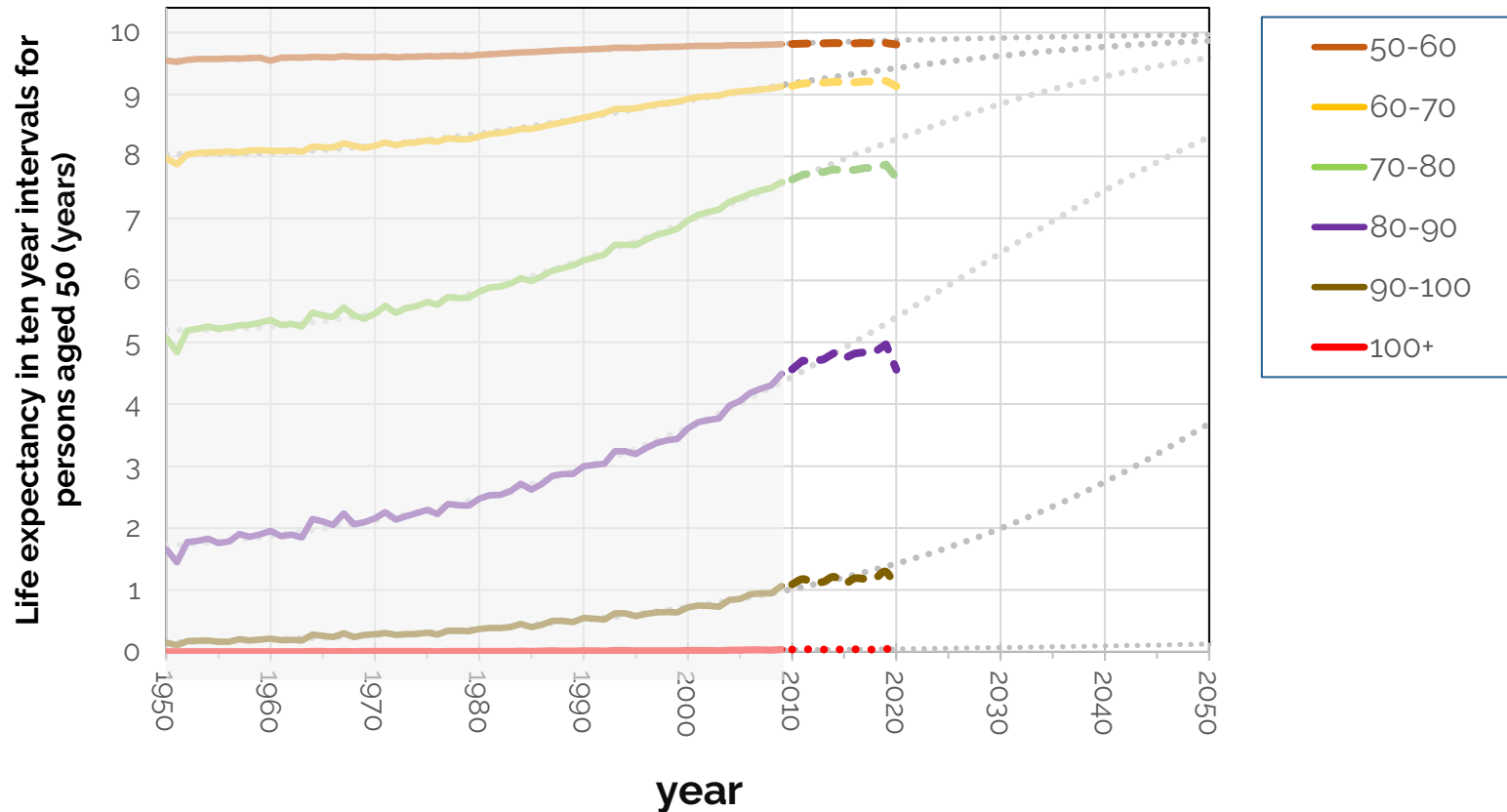
(1) For derivation see 'On the decomposition of life expectancy and limits to life', Mayhew and Smith, Population Studies. Vol 69, 1 (2015)

# There has been almost continuous improvement in life expectancy among people aged 50+ between 1950 and 2010



- Between 1950 and 2010 UK life expectancy at age 50 increased 7.9 yrs to 32.7yrs
- At age 50 you could expect to live 9.8yrs of the next 10yrs, up 0.3yrs compared with 1950 (red line)
- At age 60 you could expect to live 9.1yrs of the next 10yrs, 1.2yrs more than in 1950 (orange line)
- At age 70 it is 7.6yrs (+2.6yrs) (green line) and at age 80 it is 4.6yrs (+2.9yrs) (mauve line)
- At age 90 it is 1.1yrs (+0.9yrs) (brown line).
- Under age 50 the prospects are that you will live fractionally under 10years, and differs little with other countries

# UK data show a decline in life expectancy from 2010 onwards compared with the long-term trend



- To understand what has changed since 2010, we compare latest life expectancy data with what would have happened if the long-established trend had continued
- We then measured the difference between actual life expectancy and trend from 2010 to 2020 – shown here as colored hatched lines

The dotted black lines show the long-term trend in life expectancy of UK 50-year-olds. Thicker hatched lines show the deviation from trend in actual life expectancy from 2010.

# Change in life expectancy by decade of age starting in 2013 (in years)

Age/year	50-60	60-70	70-80	80-90	90-100	100+	Total Gain(+)/ Loss(-)
2013	0.0	-0.1	-0.1	0.0	0.0	0.0	-0.1
2014	0.0	-0.1	-0.1	0.0	0.1	0.0	-0.1
2015	0.0	-0.1	-0.2	-0.2	-0.1	0.0	-0.6
2016	0.0	-0.1	-0.2	-0.2	-0.1	0.0	-0.7
2017	0.0	-0.1	-0.3	-0.3	-0.1	0.0	-0.8
2018	0.0	-0.2	-0.3	-0.3	-0.1	0.0	-1.0
2019	0.0	-0.2	-0.3	-0.3	-0.1	0.0	-1.0
2020	-0.1	-0.3	-0.6	-0.8	-0.4	0.0	-2.3

## Summary

- Life expectancy began noticeably to stall in 2013; declines initially affected 60, 70 and 80-year-olds; 80 to 90-year-olds were next in line.
- By 2018 life expectancy among all those aged 50+ was 1.0 years lower than trend but also lower in absolute terms.
- When the pandemic struck 70-80 and 80-90-year-olds suffered most resulting in a combined fall in life expectancy of 2.3 years over the period in all age groups (bottom right corner of table).

# UK in comparison with other advanced economies

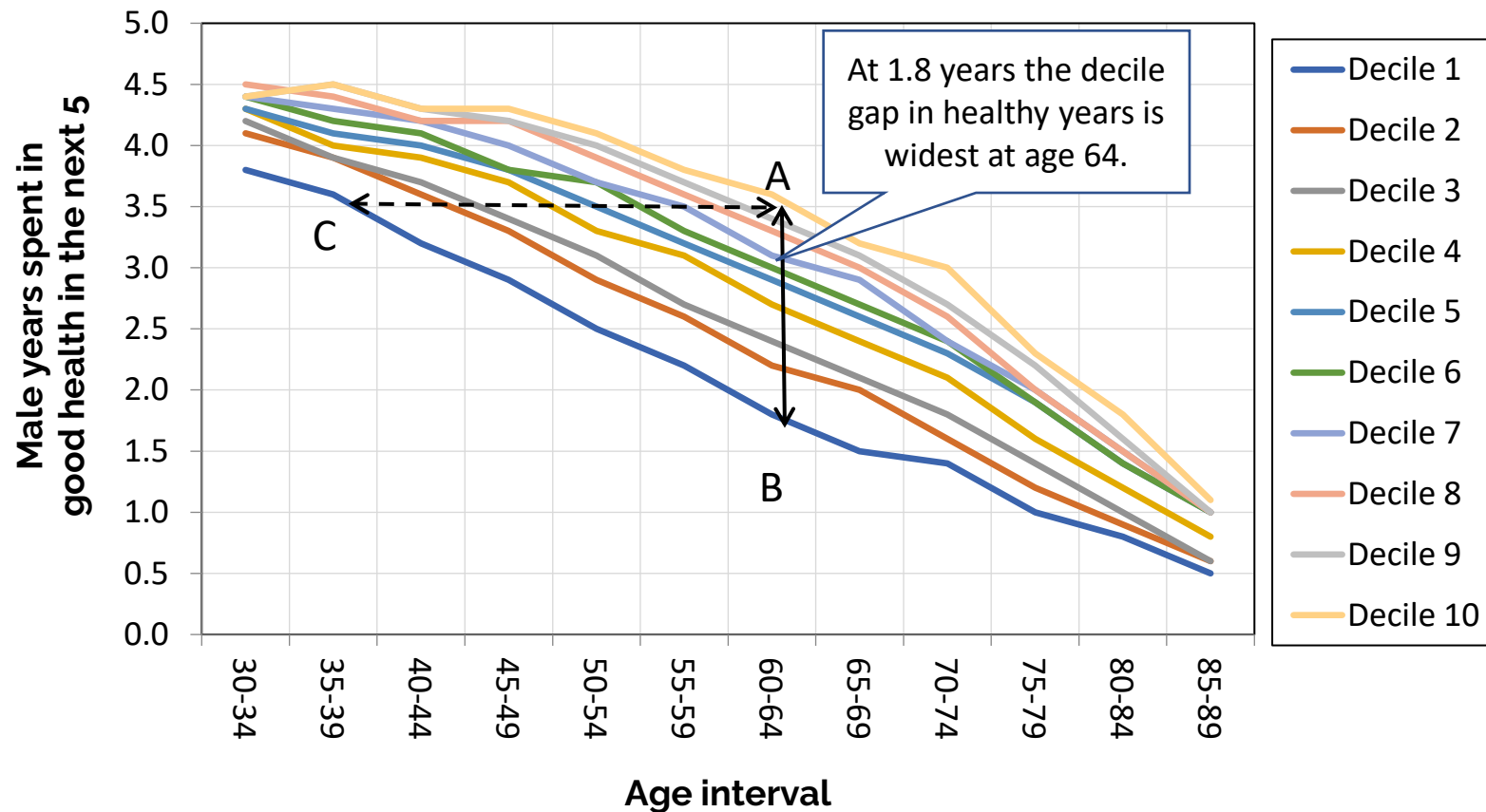
- The UK is an outlier in terms of recent changes in life expectancy globally and is one of only four major countries with stalled life expectancy
- Out of 17 advanced economies, 11 increased life expectancy at age 50 between 2010 and 2020
- Most improved were Norway (+1.8 years), Finland (+1.5 years), Australia (+1.5 years). Least improved but still positive were France and Netherlands.
- Those in the 'stalled' category experienced small reductions. These were the US (-0.2 years), Italy (-0.2 years), Spain (-0.1 years), and the UK (-0.1 years).
- Taking a longer view from 1950 onwards the UK was consistently among the bottom ranked countries with the US being the lowest ranked
- In that period the UK increased life expectancy at 50 rose by 7.8 years, the highest increase being Japan (+13.5) and the lowest the US (+5.9).

# Impact on economic activity

- A fall in life expectancy is generally preceded by a period of ill health which can vary in time according to pre-existing health conditions, age and other factors.
- A decline in life expectancy takes years off healthy lives but the effect is asymmetric. We estimate that a one-year loss in life expectancy equates on average to a 2.5-year loss in healthy years<sup>(2)</sup>
- A UK male dying at age 80 could expect to spend on average 64.5 years in good health, but if his life expectancy is only 78, he will spend less than 60 years in good health.
- Downward changes in life expectancy are a warning sign of shortened working lives with dire implications for the UK workforce and is ruinous for the economy.
- We don't know if the decline in life expectancy is a temporary blip or a transition to a new norm – if the former it is likely to take years to get back to trend.
- Bold action is needed to address the challenges faced by a growing, ageing and unhealthier population to ensure a more sustainable public purse and sustained economic growth

(2) See: 'Levelling up – the great health challenge', Mayhew, Chan, Cairns, 2023. Forthcoming Geneva Papers on Risk and Insurance and ILC

# Age and deprivation are strongly predictive of adult health inequalities and lifespan



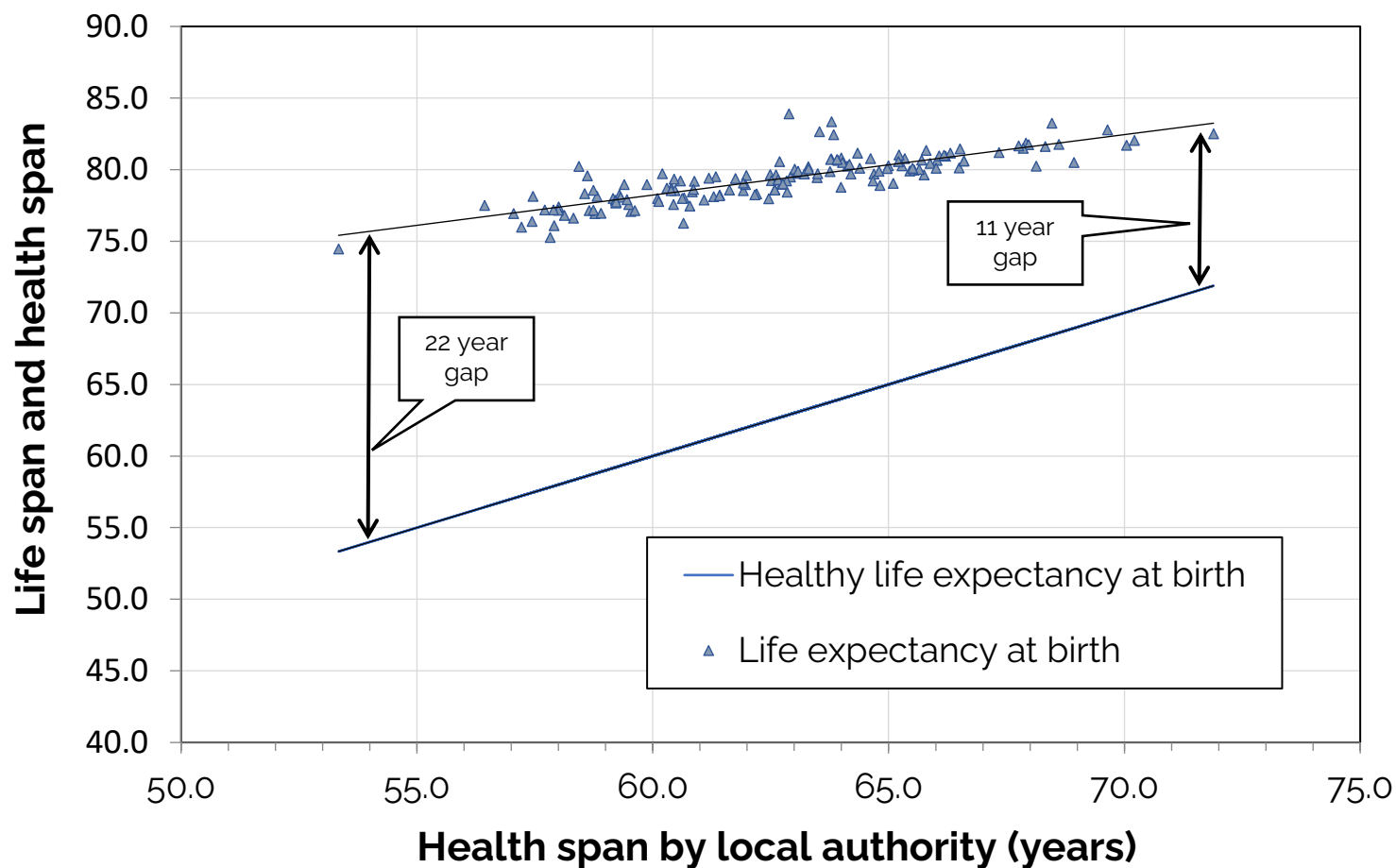
Health expectancy is the number of years an individual is expected to live in self-assessed good or very good health. The Index of Multiple Deprivation (IMD) is a measure of relative deprivation in England in which small areas are ranked and divided into deciles. The most deprived areas are in decile 1 and the least in 10.

- This chart shows the number of years out of the next 5 a male adult can expect to live in good health by age and deprivation decile.
- A man living in the least deprived area, decile 10, is healthiest throughout the life course and in decile one the least.
- The health gap is widest between ages 60 and 64. In decile 1, 1.8 years are spent in good health; in decile 10 it is 3.6 years. (A to B)
- A male aged 60 to 64 in decile 10 has the same expectation of good health as a man aged 35 to 39 in decile 1.
- The pattern is analogous to data from in 2011 to 2013, showing how little has changed

# Number of years out of the next five expected to be spent in good health (England Males) by deprivation decile based on tabulation of previous chart

Male age/decile	1	2	3	4	5	6	7	8	9	10
30-34	3.8	4.1	4.2	4.3	4.3	4.4	4.4	4.5	4.4	4.4
35-39	3.6	3.9	3.9	4.0	4.1	4.2	4.3	4.4	4.5	4.5
40-44	3.2	3.6	3.7	3.9	4.0	4.1	4.2	4.2	4.3	4.3
45-49	2.9	3.3	3.4	3.7	3.8	3.8	4.0	4.2	4.2	4.3
50-54	2.5	2.9	3.1	3.3	3.5	3.7	3.7	3.9	4.0	4.1
55-59	2.2	2.6	2.7	3.1	3.2	3.3	3.5	3.6	3.7	3.8
60-64	1.8	2.2	2.4	2.7	2.9	3.0	3.1	3.3	3.4	3.6
65-69	1.5	2.0	2.1	2.4	2.6	2.7	2.9	3.0	3.1	3.2
70-74	1.4	1.6	1.8	2.1	2.3	2.4	2.4	2.6	2.7	3.0
75-79	1.0	1.2	1.4	1.6	1.9	1.9	2.0	2.0	2.2	2.3
80-84	0.8	0.9	1.0	1.2	1.4	1.4	1.5	1.5	1.6	1.8
85-89	0.5	0.6	0.6	0.8	1.0	1.0	1.0	1.0	1.0	1.1

# Life span versus health span by local English district (2016-2018)



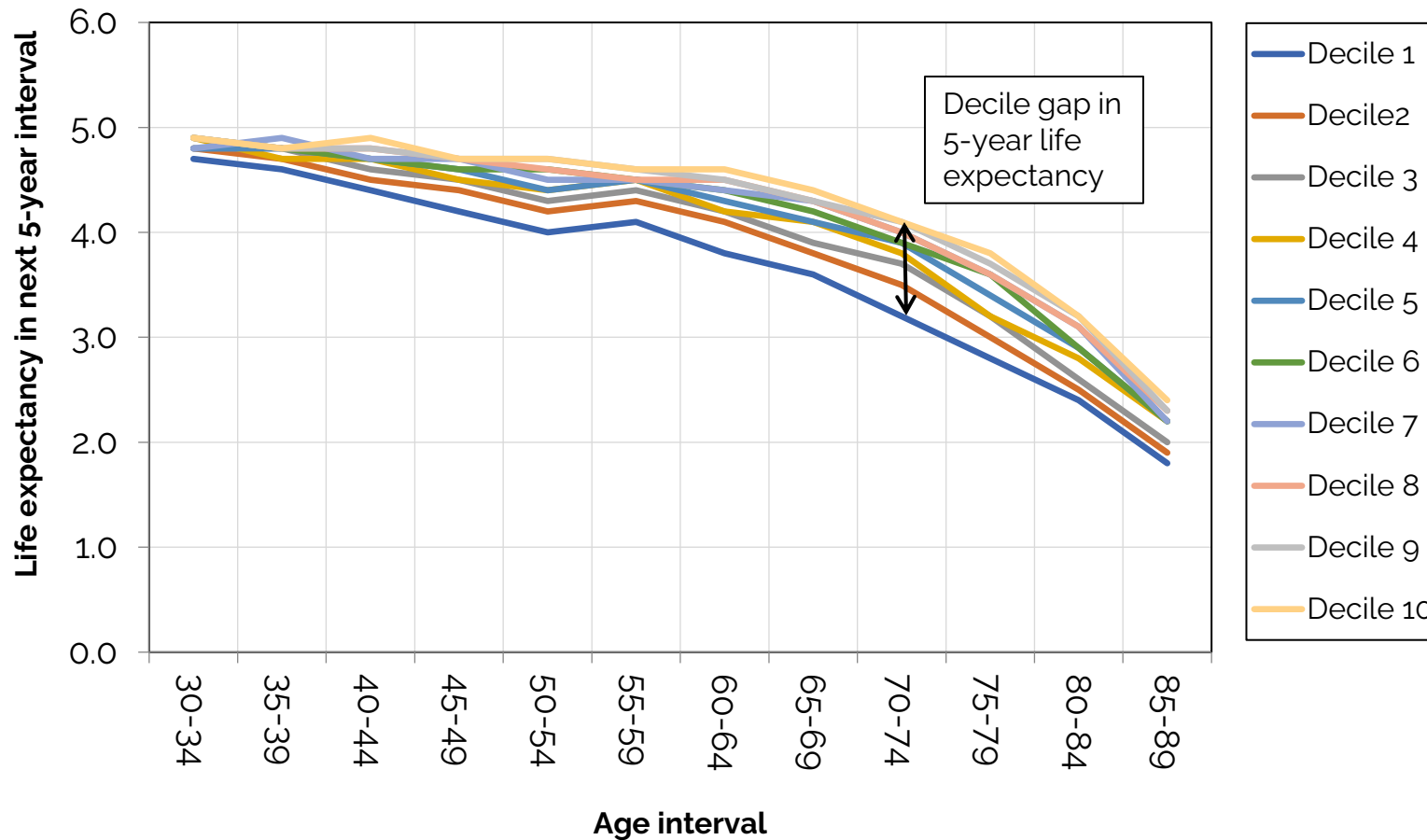
In addition to health and life expectancy by IMD decile, the ONS publishes data on both by local district in England.

Inequalities in health and lifespan are linked to geography. This chart shows gap between life span and health span by local English district.

We find that:

- In the least healthy districts, the HLE\_LE gap is 22 years and in the healthiest only 11 years, a two-fold difference
- A one-year decline in life span has reduces health span by 2.5 years.- about the same as 2010-2012
- The district with the highest health span is Richmond-upon-Thames at 71.9 years with Blackpool the lowest at 53.3 years
- The context is important because healthier people are more likely to be in work and use less health care.

# But inequalities in life span, although wide, are less than inequalities in health (2016-2018)



Partial life expectancy is the years a person of a given age is expected to live in this case out of 5 which is the maximum attainable. At your ages it is close to five no matter what deprivation decile you live in

- The problem is echoed in terms of life span but is less extreme than with health expectancy.
- This chart shows extra years out of the next 5 a man can expect to live by age and deprivation decile.
- It shows the years survived of the next five declines with age but it is lowest in more deprived areas.
- It falls to 3.2 years at age 70-74 compared with 4.1 years in the least deprived decile, a gap of 0.9 years.
- The gap in life expectancy is therefore consistently much less than the gap in health at any given age.
- It means that, in this case, men from deprived deciles spend more years in ill health per 5-year age interval over the life course as well as die sooner.

# Number of years out of the next 5 a man can expect to live by age and deprivation decile (England males) based on tabulation of previous chart

Male age/decile	1	2	3	4	5	6	7	8	9	10
<b>30-34</b>	4.7	4.8	4.8	4.9	4.8	4.9	4.8	4.9	4.9	4.9
<b>35-39</b>	4.6	4.7	4.8	4.7	4.8	4.8	4.9	4.8	4.8	4.8
<b>40-44</b>	4.4	4.5	4.6	4.7	4.7	4.7	4.7	4.8	4.8	4.9
<b>45-49</b>	4.2	4.4	4.5	4.5	4.6	4.6	4.7	4.7	4.7	4.7
<b>50-54</b>	4.0	4.2	4.3	4.4	4.4	4.6	4.5	4.6	4.7	4.7
<b>55-59</b>	4.1	4.3	4.4	4.5	4.5	4.5	4.5	4.5	4.6	4.6
<b>60-64</b>	3.8	4.1	4.2	4.2	4.3	4.4	4.4	4.5	4.5	4.6
<b>65-69</b>	3.6	3.8	3.9	4.1	4.1	4.2	4.3	4.3	4.3	4.4
<b>70-74</b>	3.2	3.5	3.7	3.8	3.9	3.9	4.0	4.0	4.1	4.1
<b>75-79</b>	2.8	3.0	3.2	3.2	3.4	3.6	3.6	3.6	3.7	3.8
<b>80-84</b>	2.4	2.5	2.6	2.8	2.9	2.9	3.1	3.1	3.2	3.2
<b>85-89</b>	1.8	1.9	2.0	2.2	2.2	2.2	2.2	2.3	2.3	2.4

## ...and on health

- Life expectancy started its relative decline in 2010 before COVID exposed deep-rooted problems in population health.
- Falling life expectancy affects the demand for healthcare by bringing forward in time when health interventions are needed.
- This applies especially to older people who are growing in number and much more likely to use health services.
- Perhaps the most telling statistic is the rise in NHS waiting lists. Numbers waiting increased from 2.5m in 2010 to 5m in 2020 and now stand at 7.5m.

# We are also falling behind our international competitors

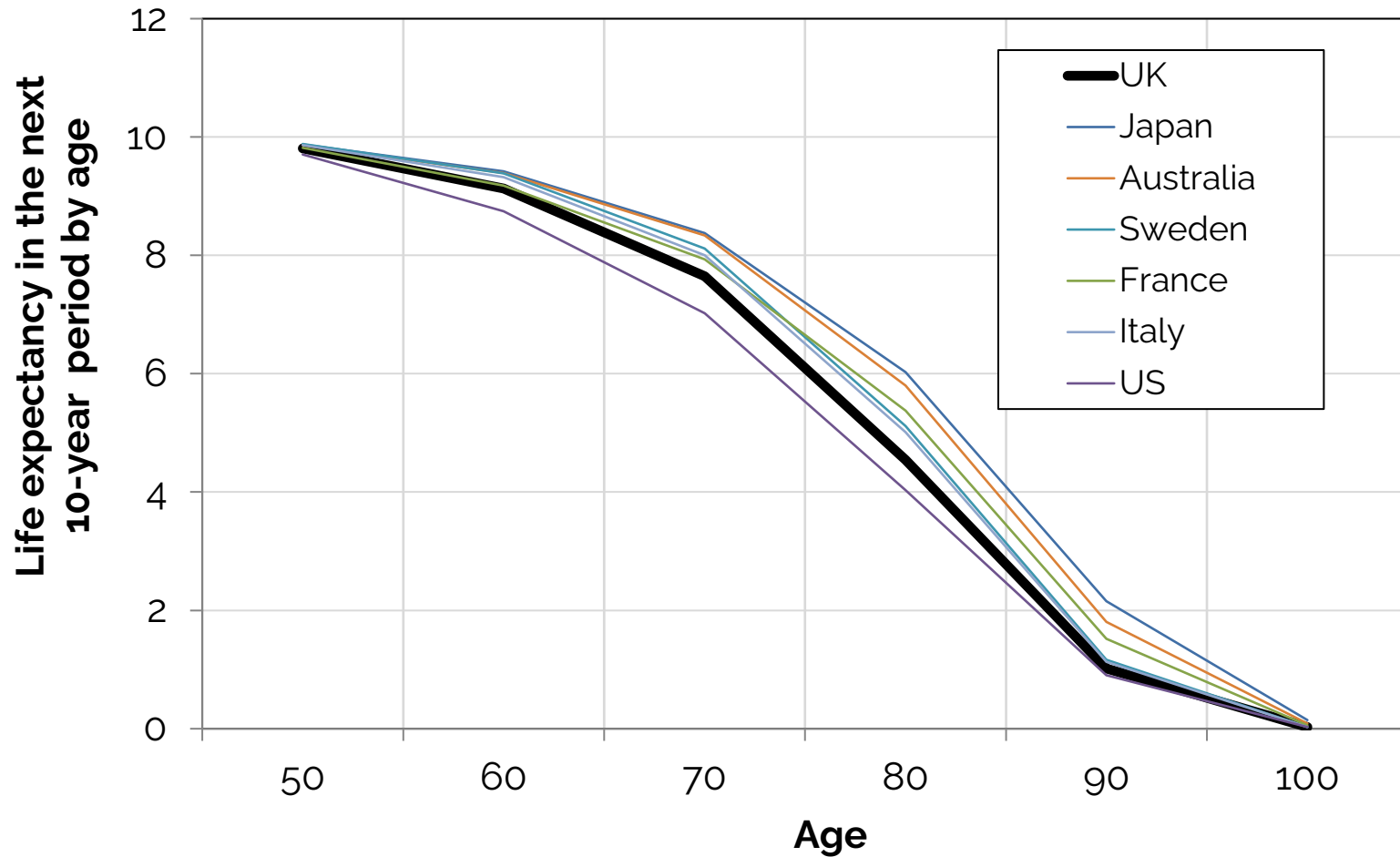


Chart showing extra years out of the next ten a person can expect to live by ten-year age interval and country.

It shows inequalities in life span persist at the international level when the UK is compared with competitor economies.

An exception is the US but countries such as Japan, Australia Sweden, France and Italy all do better than the UK.

The largest gap occurs is at age 70 and 80 of between 0.7 and 1.5 years of the next ten if the UK is compared with Japan.

A 50-year-old Japanese can person can expect to live 3.8 more years at age 50 than someone from the UK.

If we want people to live longer and more healthily and work longer these differences need to be eliminated.

# Chart showing extra years out of the next ten a person can expect to live by ten-year age interval and country based on tabulation of previous chart

Age	UK	Japan 2020	Australia	Sweden	France	Italy	US
<b>50</b>	9.8	9.9	9.9	9.9	9.8	9.9	9.7
<b>60</b>	9.1	9.4	9.4	9.4	9.2	9.3	8.7
<b>70</b>	7.6	8.4	8.3	8.1	7.9	8.0	7.0
<b>80</b>	4.5	6.0	5.8	5.1	5.4	5.0	4.0
<b>90</b>	1.0	2.2	1.8	1.2	1.5	1.1	0.9
<b>100</b>	0.0	0.1	0.1	0.0	0.1	0.0	0.0
<b>Total</b>	32.2	36.0	35.3	33.7	33.9	33.4	30.4

Of the 17 countries analysed, life expectancy at age 50 life expectancy increased in 12 between 2010 and 2020 while it was stalled or slightly lower in five.

# Things will get worse before they get better – a strategic view

- To the extent that the pattern of inequalities will continue to apply in future years is underpinned by the lack of meaningful progress since 2010.
- The median age of the population will increase from 38 in 2020 to 41 by 2040, making everyone slightly older and inequalities as well as health potentially worse.
- There are now 9.4m economically inactive persons in the UK compared with 8.7 million in 2019, putting the economy at risk.
- Of these 2.8m are long term sick compared with 2.1m in 2019 and a similar level in 2010. The demise in health in middle age is greater than the demise in life expectancy and the gap is increasing.
- Broader labour supply problems in the economy coupled with high levels of inactivity are mirrored in migration figures which is running at 700,000 p.a. compared with 200,000 in 2012

# Future research

- We need to know how much health inequality is due to unhealthy lifestyles, how much to a lack of healthcare resources and how much to income inequality.
- It is likely that poor health is driving income inequalities rather than the other way round as this evidence shows inequalities in lifespan are much narrower. Is job creation a more effective way of closing the gap than throwing ever more money at health care?
- If correct a greater investment in jobs and skills as well as healthier lifestyles across the life course will pay financial as well as social dividends.
- The ILC's report [\*One hundred not out: A route map for long lives\*](#) expands on this analysis, setting out the challenges faced by a growing and ageing population and what solutions are needed to ensure healthier and productive longer lives.

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# Change in Life expectancy at given age compared with

Country	2010	50	60	70	80	90	100	2020	Change
Australia	33.8	0.0	0.1	0.3	0.6	0.5	0.0	35.3	up
Canada	33.3	0.0	0.0	0.1	0.3	0.2	0.0	33.9	up
Finland	32	0.1	0.2	0.4	0.6	0.3	0.0	33.5	up
France	33.4	0.0	0.1	0.1	0.2	0.1	0.0	33.9	up
Iceland	33.3	0.0	0.0	0.2	0.5	0.3	0.0	34.3	up
Ireland	32.4	0.0	0.1	0.4	0.4	0.3	0.0	33.7	up
Italy	33.5	0.0	0.0	0.0	0.0	-0.1	0.0	33.4	stalled
Japan	33	0.0	0.1	0.3	0.6	0.4	0.1	34.5	up
Netherlands	32.3	0.0	0.1	0.2	0.2	0.0	0.0	32.8	up
Norway	32.6	0.0	0.2	0.5	0.7	0.4	0.0	34.4	up
NZ	33.1	0.0	0.1	0.3	0.5	0.4	0.0	34.4	up
Portugal	32.1	0.0	0.0	0.2	0.4	0.2	0.0	32.9	up
Spain	33.5	0.0	0.0	0.0	0.0	-0.1	0.0	33.4	stalled
Sweden	32.9	0.0	0.1	0.2	0.3	0.1	0.0	33.7	up
Switzerland	33.7	0.0	0.1	0.2	0.2	0.0	0.0	34.3	stalled
UK	32.3	0.0	0.0	0.0	0.0	-0.1	0.0	32.2	stalled
USA	31.4	0.0	0.1	0.0	-0.2	-0.1	0.0	31.2	stalled