UBS

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What does "life expectancy" actually mean?

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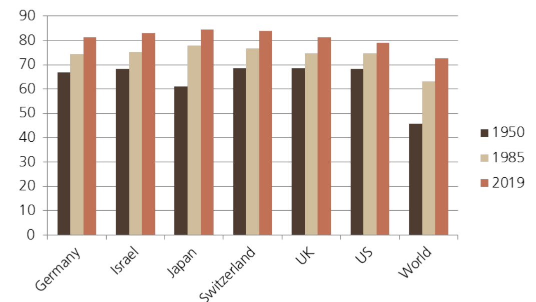
- Retired investors face a multitude of risks, all of which fold up into a single overarching one: longevity. With global life expectancy on the rise (see **Figure 1**) investors may be exposed to greater longevity risk.
- Most longevity discussions focus on extensions of median life expectancy which have been impressive and shouldn't be understated, but life expectancy estimates are statistical measures and don't take into account any personal factors.
- Many investors end up underestimating life expectancy, and this can lead them to miscalculate how much growth they require in their portfolio and to invest too conservatively.
- With a better understanding of what life expectancy projections actually mean, families will be better equipped to position their wealth to effectively hedge longevity risk.

Figure 1: Life expectancy is rising globally

The average number of years a newborn would live if the pattern of mortality in the given year were to stay the same throughout its life



Source: Our World in Data, UBS

Life expectancy is rising

Good news: we are living longer. And longer lifespans mean more years to enjoy retirement. The bad news is that we have to work harder to actually be able to enjoy those retirement years.

The average life expectancy is increasing by about three years every generation according to a recent study from the Proceedings of the National Academy of Sciences. The study even suggests that people can expect to live about six years longer than their grandparents, on average.

While this news means we have more years to look forward to, the extension of longevity brings many investors anxiety regarding their finances. To account for the added uncertainty of a longer retirement it's prudent to increase the assets set aside for retirement or to reevaluate viable spending amounts.

In order to be able to effectively plan for these longer horizons, investors need to be able to adequately estimate the number of years in retirement so they can incorporate appropriate projections of longevity into their financial plans.

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Life expectancy can be misleading

The term "life expectancy" refers to the number of years a person can expect to live. It is based on an estimate of the average age that members of a particular population group will be when they die. While life expectancy measurements are often used as a guideline when planning for longevity, there are some important aspects of it that can be misleading.

For starters, it's important to understand that very few people will die at precisely the age indicated by life expectancy, even if mortality patterns stay constant. For instance, very few people born in the US in 2019 will die at age 78.9 (the life expectancy noted in Figure 1)—most of them will die much earlier or much later. In other words, if everyone born in the US in 2019 planned for a retirement horizon that lasted to age 78.9, about half of the plans would succeed and most of the others would fail. That's essentially the same odds as winning or losing a coin toss.

What's more, factors such as obesity and socioeconomic status cause the "average" longevity to vary significantly among different populations and cohorts. For instance, individuals that retain a healthy body mass index throughout their lives can reasonably add 2 to 3 years to the median numbers. Life expectancy estimates are statistical measures and don't take into account any personal factors such as lifestyle choices or family medical history. So, the length of life for an average person is not very informative about the predicted lifespan for a person living a particularly healthy, or unhealthy lifestyle.

Another misleading aspect of life expectancy is that it is not uniform across the lifetime. Life expectancy in Japan, at birth, is 84 years. At the age of 65, life expectancy in Japan is 22 years. To think about this example differently, you could say that a 65-year-old in Japan has added 1,095 days (or three years) to their life expectancy compared to when they were a newborn.

Adding three years on to the end of your life doesn't just mean you'll have to fund three more years of regular spending amounts. You'll want to account for increased spending amounts during those years thanks to the hefty costs associated with rising health-related issues. Life expectancy increases as you get older and planning for a horizon based solely on the expected lifespan at birth could be detrimental to an individual's wealth, especially as it relates to their financial security later in life.

Perhaps an equally important but often overlooked aspect of longevity is the changing distribution of mortality over the life cycle. Only 50 years ago, a 65-year-old faced roughly an equal probability of death every year until they were 85, at which point 80% had passed away. As it is now, death was guaranteed; only the timing of it was extraordinarily uncertain.

Today, the distribution surrounding the probability of death has become much more peaked. Survival into a person's 80s and 90s is much more likely. An average 65-year-old female today has a greater than 30% chance of living to 90. Survivorship odds for a couple compound these statistics further (see **Figure 2**). In fact, there's a 50% probability that at least one member of a two-person household currently aged 65 will live to be 90.

Based on this data, we'd advise against using median life expectancy when making decisions within your financial plan. In most developed countries, a value that reflects at least one member of a couple making it to 100-105 and age 95 for an individual can provide a higher margin of safety.

How do I invest for my lifetime?

One of the main challenges in retirement is that we don't know how long we will live, so we have to invest (and spend) for an uncertain horizon. This uncertainty is known as, longevity risk. But, with life expectancy on the rise and mortality distribution more peaked, we believe it's fair to say that longevity *risk* has become longevity *certainty* for most households.

This longevity certainty is important to keep in mind when it comes to structuring wealth within our Liquidity. Longevity. Legacy. framework. That's because the planning horizon will have a direct impact on how you should allocate funds for your lifetime (see **Figure 3**).

Underestimating your planning horizon can put you into a situation where you haven't set aside enough assets and you'll be forced to significantly reduce spending later in life just to make sure your plan can last. And overestimating your lifespan may cause you to allocate too much to fund spending in the Longevity strategy, meaning less capital in your Legacy strategy potentially earning higher returns. There's no way to estimate life expectancy with precision, but choosing a planning horizon that's mindful of your personal situation and lifestyle —not the average situation of a large population—is a good place to start.

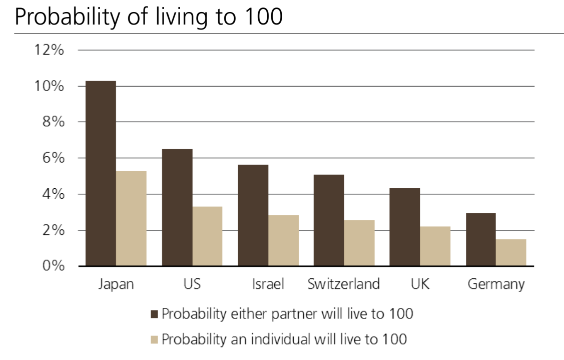
Navigating longevity

There are actions families can take to mitigate longevity risk, such as allowing for spending flexibility and/or adding a direct insurance hedge to the portfolio such as a deferred fixed annuity. But study after study indicates that most people underestimate how long they will live making it difficult to determine just how much risk needs to be mitigated.

In addition to focusing on investment returns, spending rates and direct hedges when investing for your lifetime, we encourage investors to also think about how they'll actually navigate that longevity. As you think about planning for retirement, consider what it is you want to do and what will be needed regarding resources when you get there. Physical, cognitive, financial, and social resources become strained in old age. Consider what actions need to be taken today to ensure the highest quality of life down the road.

Figure 2: Survivorship odds for couples compound the need to plan for longevity

Probability of living to 100



Source: The Human Mortality Database, UBS

Figure 3: Planning horizons matter when making portfolio decisions

Longevity sizing required (as a multiple of years of "Year 1" retirement spending), based on years of retirement

Years of retirement	Conservative	Moderately Conservative	Moderate	Moderately Aggressive	Aggressive
10 years	9x	10x	10x	10x	10x
20 years	17x	17x	17x	17x	18x
30 years	23x	23x	23x	23x	24x
40 years	28x	27x	27x	27x	29x
50 years	32x	30x	30x	30x	31x
60 years	35x	33x	32x	32x	33x

Source: UBS. Assumes that a 20% probability of failure (the likelihood of needing to cut spending at some point in retirement) is acceptable. For more information on sizing the Longevity strategy see our report, Should you reduce risk?

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