



The latest evidence on longevity: Impact on your fund

London Borough of Hackney Pension Fund

March 2019

Introduction

This report contains the key findings of our analysis for the London Borough of Hackney Pension Fund. Throughout, we have focussed on why your results matter and suggested how you can apply them to keep on top of your longevity risk.

We've tried not to clutter the report with technical terms and jargon. But combining state-of-the-art techniques with the most appropriate data is fundamental to the quality of your results. We've included a very brief summary of how we do this on the next page.

Greater detail, in-depth analysis and further explanation can be found in your suite of full reports, available from the members' area of www.clubvita.co.uk.

We hope that you find this report accessible, informative and, above all, useful. As always, we'd be delighted to receive any feedback on this or our other services to you.

We are grateful for the continued support of you and all our other members. We are confident that by sharing their data, every member of Club Vita benefits and gets out more than they put in.

For and on behalf of Club Vita LLP

13 March 2019

“ We've tried not to clutter the report with technical terms and jargon. ”



How we performed your analysis

Your analysis is built on the combined data of 231 diverse funds, paying 2.9 million pensioners from across the UK. Between them, they provide records of some 1.5 million deceased pensioners.

The **size of the data** is crucial to the statistical credibility of your analysis, and its **long history** ensures we can share with you invaluable insights on pension scheme **longevity trends**. And by asking each subscriber for fresh data every year we keep your analysis **up to date**.

Perhaps most important of all is the **richness of the data**. By getting postcodes, pension amounts, salaries, reason for retirement (and much more) direct from the administrators of every scheme, we can test exactly what factors impact on lifespans. It also means we can apply our results accurately to your fund - in essence picking out those many individuals who are most like each of your members and using their experience to provide up-to-date, relevant information.

A few key results:

- By combining affluence (salary or pension) with postcode, our model is **much more predictive than using postcode alone**.
- We use **salary**, in preference to pension amount, because it is a better measure of affluence (for men).
- By combining affluence, postcode, reason for retirement and occupation type, we capture a **spread of 10 years** in men's average lifespan – so our model works well for all kinds of schemes.

These features in combination are what drive the robustness of our analysis, and the robustness of the decisions our members make as a result.

“ The size of the data is crucial to the statistical credibility of your analysis ”



Your key longevity issues

The world of longevity never stays still for long, and it can often be difficult to establish which changes are, or are not, relevant to your fund. In this report we highlight the key issues you should be aware of:

Current longevity

- Impact of the latest changes in longevity – what does the latest experience of defined benefit pensioners mean for your fund?
- Experience of your members – are your members surviving for longer or shorter periods than expected and what does this mean for your funding position?
- Some members are more influential than others – the experience of the pensioners with the highest pensions is important to your fund.

Future longevity trends

- Recent longevity trends will influence the assumptions you set for how the life expectancy of your members will change in the future. It is important to understand the reasons behind recent experience before relying on it to set the longevity trend assumption for your fund.
- The future is uncertain, yet many pension schemes base their funding, contribution and investment strategies on a single assumption of how life expectancies will change in the future. Using our 'Alternative Futures' can help you explore how resilient your strategies are when things don't turn out in line with your assumption.

“ Given an uncertain future, how resilient is your strategy? ”

The latest evidence on current lifespans

New evidence on longevity emerges every year. That's why we annually update your VitaCurves (longevity assumptions matched individually to the characteristics of each member of your fund).

Taking account of the latest VitaCurves would decrease your liabilities by 1.2%, compared to your current funding assumptions. This impact is broken down below.

Membership group	Approximate change in liability using VitaCurves (with data calibrated spanning 2014-2016) rather than current funding assumption
Actives	-1.2%
Deferred Pensioners	-1.0%
Pensioners and Dependants	-1.2%
Overall	-1.2%
Change to future service contribution rate	-1.2%

These figures are based on a broad approximation to scheme benefits and financial assumptions which are designed to reflect a market consistent basis. Full details of the assumptions used are included in the VitaCurves report

This impact will change from year to year due to:

- recent longevity improvements being different to those you assumed
- the impact of emerging evidence for people like your members, captured in these latest VitaCurves
- changes to your data or membership profile

In particular the latest longevity experience includes 2015, a year which saw a 5.6% increase in deaths registered in England & Wales. We saw a similarly heavy year across Club Vita, leading to reduced expectations of projected life expectancy amongst most pensioners.

For more information

For further details, see your **VITACURVES** report, available from the members' area of www.clubvita.co.uk. This also explains how your advisors can access and make direct use of your VitaCurves (either for individual members, or average assumptions for key sections of your fund) in their calculations for you.

“ Taking account of the latest VitaCurves would decrease your liabilities by 1.2% ”

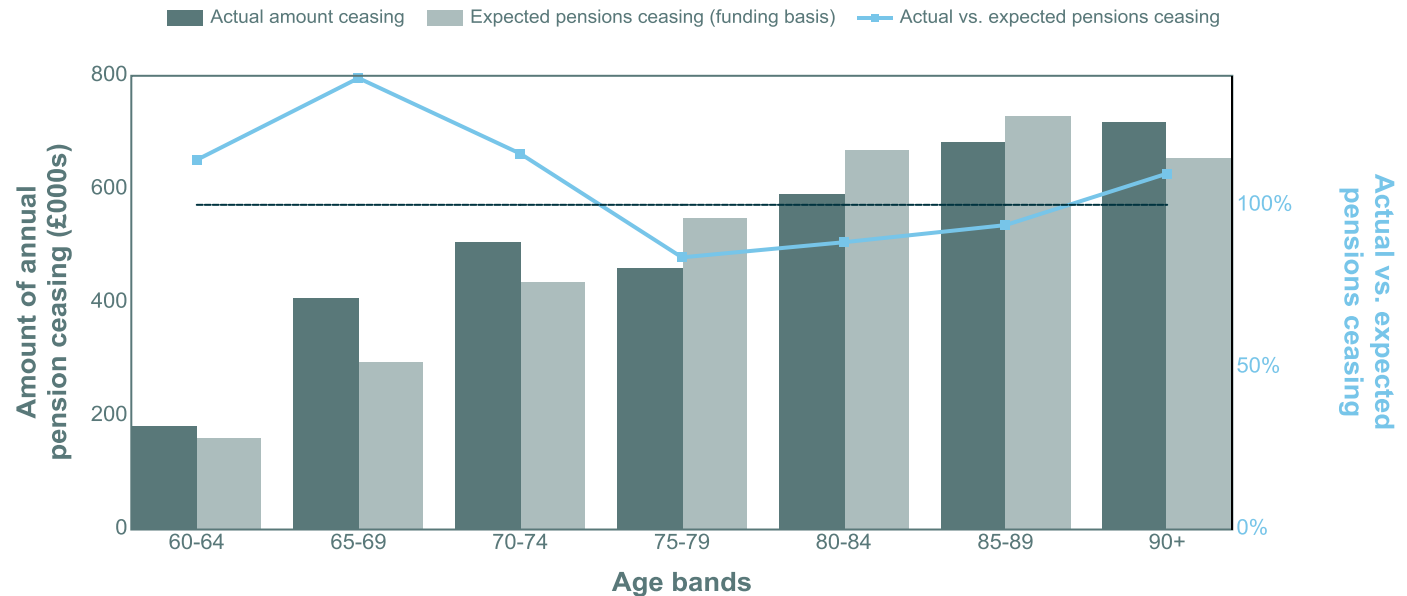
Why this matters

- This analysis tells you if your funding assumptions (for current longevity) remain on track.
- You can build this latest information into your decision making, for example:
 - on longevity de-risking (such as longevity swaps or buy-in)
 - on financial de-risking (such as trigger points or cashflows underlying Liability Driven Investment strategies)
 - on funding

Your fund's own experience

However well you set your fund's longevity assumptions, your experience will vary from year to year. This can lead to funding gains (if fewer members survive than expected) or strains (if more survive than expected).

Fund experience over three years to 31 August 2018 split by age group (All types of pensioner)



The chart above looks at experience over the last three years and contrasts the actual amount of pension ceasing (dark grey bars) with the expected amount ceasing (light grey bars) at each age range. In each case the expected number is based upon your current funding assumption as described in your VitaMonitor report.

The ratio of these two numbers is shown as a light blue line. Where the blue line is above 100%, there were more deaths than expected - typically leading to a funding gain - and vice versa.

The table below shows **the impact of your fund's experience since the last valuation** (as at 31 March 2016) **has been to leave your liabilities relatively unchanged.**

	Year ending			Since last valuation
	31 Aug 2018	31 Aug 2017	31 Aug 2016	
Extra (less) pension in payment at year end (£k)	41	(16)	(56)	1
Estimated % increase (decrease) in liabilities	0.0%	0.0%	0.0%	0.0%

When combined with the latest VitaCurves (see previous page), we estimate this would **in aggregate decrease your liabilities by 1.2%.**

For more information

For further details of this and other monitoring, see your **VITAMONITOR** report, available from the members' area of www.clubvita.co.uk.

Why this matters

- Your fund's experience is ultimately what drives the costs that emerge.
- For very mature or small schemes these impacts can be significant.
- Experience consistently different to your assumptions may suggest changes are needed.
- But it should be kept in mind that this experience can be volatile.

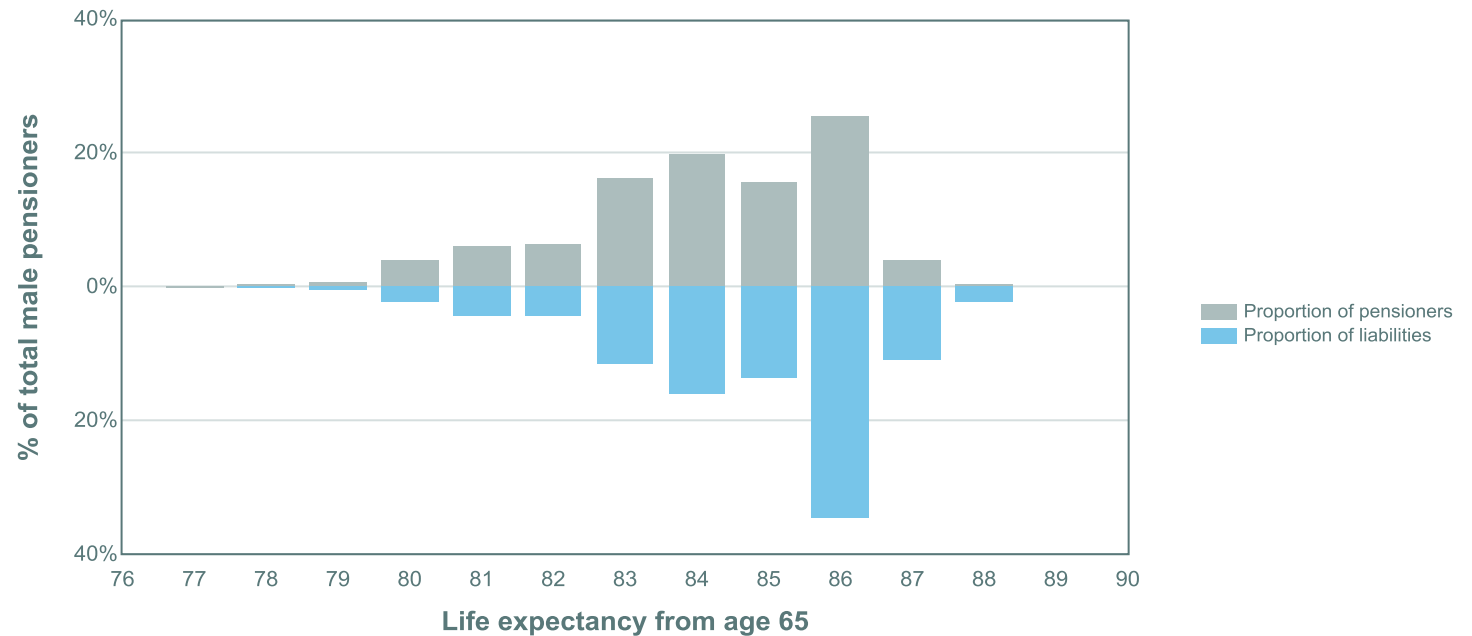
“ The impact of your fund's experience since the last valuation has been to leave your liabilities relatively unchanged ”

Diversity and concentration of risk

The chart below shows the wide range of life expectancies predicted by your VitaCurves analysis. The top half shows the spread of life expectancies from 65 (to the nearest year) for male pensioners. It illustrates that some members are expected to live much longer than others.

The bottom half of the chart also shows the spread of life expectancies from 65, but here we have shown the proportion of member liabilities at each age. Taking both parts of the chart together, you can understand how influential certain groups of your members are to your fund.

Spread of life expectancies for male pensioners



It is clear that the traditional approach of using **a single assumption** simply did not reflect the reality of how longevity differed for pension scheme members, and **was an oversimplification for many purposes**. Using VitaCurves allows you to set a longevity assumption that reflects the characteristics of each member of your fund.

The larger bars for high life expectancies in the bottom half of the chart relate to more affluent individuals with larger pensions. In fact, across the whole fund:

- 50% of the liabilities are concentrated on 14.2% of members
- 10% of liabilities are concentrated on just 1.2% of members (i.e. 273 individuals)
- The “bottom” 50% of members account for less than 10.8% of liabilities

This means that **the lifespans of the members with the largest liabilities will have a disproportionate effect on the finances of the fund.**

Understanding where you have a concentration of risk enables you to make better decisions on how to reduce risk. It would generally be most efficient, in terms of the most reward for the effort applied, to focus de-risking efforts on the members with the largest individual liabilities.

Why this matters

A single longevity assumption is an oversimplification for situations such as:

- setting (appropriate) contribution rates for employers with different types of members
- assessing the cost of designing member options (e.g. enhanced transfer values or pension increase exchanges) where take up will be skewed to certain groups
- calculating liabilities for subgroups of the scheme (e.g. buy-in for older members)

The VitaCurves analysis enables you to allow for the spread of life expectancies wherever it benefits your decision making.

“ Lifespans of the members with the largest liabilities have a disproportionate effect on the finances of the fund ”

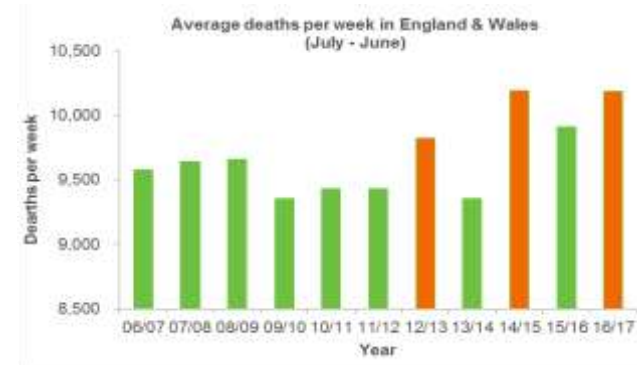
A volatile start to the 2010s

How longevity will increase in the future ('future improvements') is an important assumption for all pension schemes. Setting this assumption involves projecting recent levels of improvement into the future, so understanding the drivers of recent longevity experience is critical.

We have seen lower improvements in longevity in recent years (since 2012/3), which has resulted in lower rates of longevity improvement being projected into the future. As a result the value placed on liabilities has typically fallen.

One way to look at improvement patterns is to consider deaths over the course of a year. In the chart to the right¹ we start each year in July to fully capture each winter season – where we tend to see most deaths. The chart shows that:

- The average number of deaths had generally been falling over the period to 2011/12.
- The most recent five year period has seen three 'heavy' years (shown in orange), typically followed by some 'bounce-back' in death rates in the following year.



Note that despite the increased volatility, longevity is still generally increasing (if mortality rates were unchanged we would expect the death rate to increase by 2-3% p.a. due to aging of the population).

The increase in 2012/13 has been attributed to the weather. An extended period of dull and wintry weather, was followed by a harsh cold snap in February and March 2013. All of which led to particularly heavy mortality.

2013/14 seemed to be a 'bounce-back', however the further increase in numbers of deaths in 2014/15 was initially attributed to the winter flu. The flu vaccine provided to vulnerable people (mainly the elderly, pregnant women and young children) offered little protection against the flu strain prevailing in the early months of 2015.

Therefore both the 2012/13 and 2014/15 spikes could potentially be caused, at least in part, by what could be described as 'one-off' external events. Accordingly most commentators cautioned against reading too much into them when projecting future trends.

However, it is difficult to point to similar one-off reasons for the elevated numbers of deaths observed in 2015/16 and 2016/17. Commentators to date have identified two potential areas that require further investigation – the rise in Alzheimer's and dementia related deaths, and the impacts of austerity on health and social care budgets, albeit there may be other relevant factors.

¹ The chart is based on weekly death data published by ONS and covers the England & Wales population, although similar patterns are seen in Club Vita data.

What this volatility means for you

So what does this mean for schemes setting assumptions for how longevity will change in the future? Schemes are tending to take one of the following approaches:

Retain existing assumption

Many schemes are nervous about automatically reflecting the recent experience. Their concern is that the recent falls in longevity improvements will prove to be a temporary feature and their effects will be reversed by longevity improvements in future years. This reversal could be driven by the fittest pensioners who are more likely to have survived the recent winters.

Fully reflect recent experience

Some schemes are fully reflecting recent experience. They will hold a view that recent experience is likely to be repeated in the future, in essence that longevity will improve at a slower rate in the future than during the period from 2000 to 2012. In doing this they accept that if a reversal in longevity improvements occurs future increases in funding reserves will be required.

Partially reflect recent experience

Other schemes are partially reflecting recent experience. These schemes are typically nervous that recent falls in longevity improvements will prove to be a temporary feature, but accept that we *may* be entering a period of slower longevity improvements.

In our experience most pension schemes are now making at least a partial allowance for recent heavier experience in setting their assumptions. Whichever approach is adopted, it is important that schemes continue to monitor their longevity experience to give early warning of future changes in funding reserves. You are able to do this using your **VITAMONITOR** report, available from the members' area of www.clubvita.co.uk.

“ Adoption of the latest longevity projections could reduce liabilities by 2-5%, with the risk of future bounce back ”

A scheme-specific approach to improvements

The most widely used longevity improvement assumptions make use of England & Wales population data, making it of less direct relevance to pension schemes than the experience of defined benefit scheme pensioners. However your fund already uses the experience of defined benefit scheme pensioners as a starting point for the assumption used for how life expectancies will change in the future.

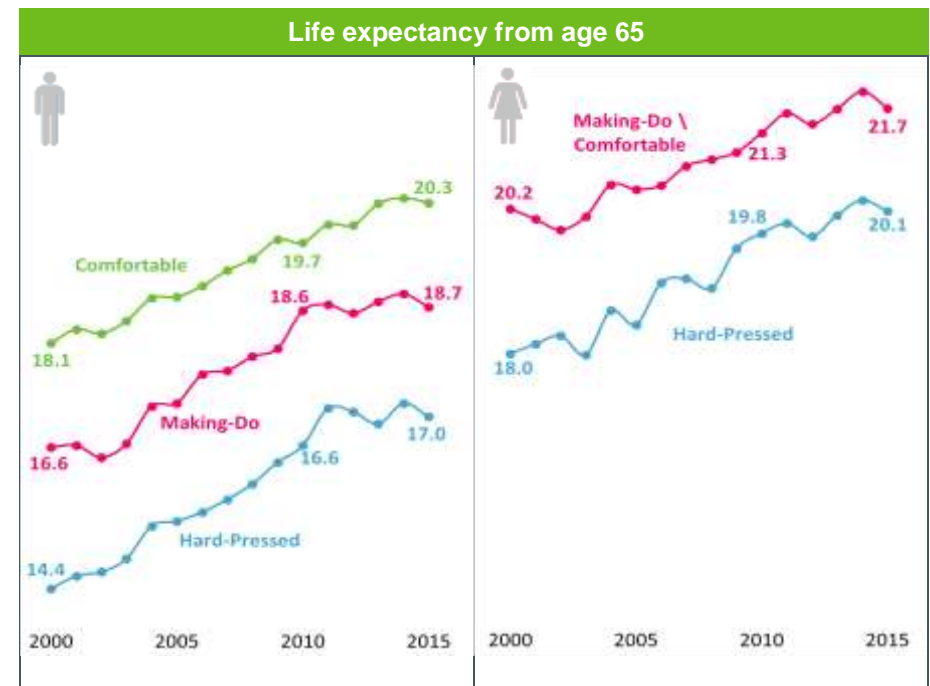
In 2017, we concluded a research project with the PLSA (formerly the NAPF) investigating historic longevity improvements within defined benefit pension schemes over the period from 2000 to 2015. This was a follow up to our previous research, published in 2014, which looked at experience over the period from 2000 to 2010, and identified that:

- Life expectancy had increased at different rates for different types of defined benefit pensioner; and
- Pensioners could be categorised as one of three types - 'Comfortable', 'Making-Do' or 'Hard-Pressed' – based on broad affluence and lifestyle measures.

While between **2000 and 2010** the (longer lived) 'Comfortable' male group saw the slowest increase in life expectancy of the three types of pensioner, between **2010 and 2015** improvements continued at a **steady rate**, in line with 2000 to 2010. By contrast, over **2000 to 2010** the 'Hard-Pressed' group (who are shorter-lived) saw the fastest increase in life expectancy, but life expectancy for this group has remained level from 2011 to 2015.

For women, we found that both groups had seen little change from 2011 to 2015, following the 'Hard-Pressed' group seeing faster increases in the 2000s.

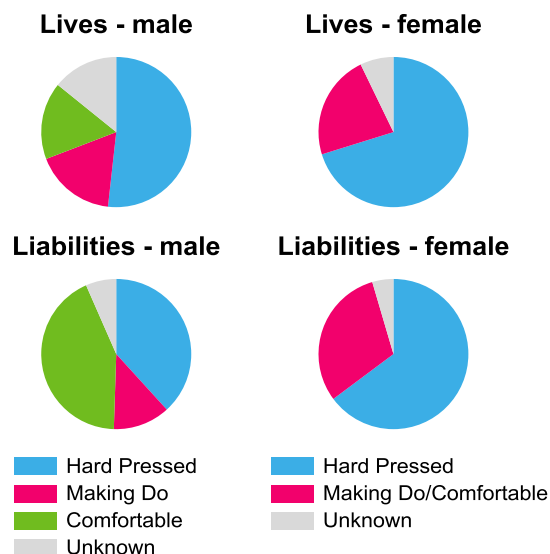
The headline result of these changes is that the gap between life expectancy of the shortest and longest lived defined benefit pension scheme members **reduced over 2000 to 2010**, but has subsequently **widened over 2010 to 2015**.



These trends highlight the importance of pension schemes considering their socio-economic profile when setting assumptions for how longevity may change in the future.

What this research means for you

Every pension fund is different and has its own socioeconomic profile. The breakdown of your fund's members by longevity trend group is shown below.



Why this matters

- These differential trends make it critical to use up-to-date base tables. Club Vita provides you with the most up-to-date, relevant information available.
- The differences seen are likely to persist in the future. The PLSA study provides the tools to set an improvement assumption relevant to your population and to explore the likely impact of different longevity scenarios on your fund's finances.

The majority of your fund's liabilities relate to those in the **making do** and **comfortable** groups (excluding any "unknown" members). As discussed on the previous page, from 2010 to 2015 **Comfortable** members saw **higher improvements in life expectancy** than average for pension scheme members, while **Hard-Pressed** and **Making-Do** members saw **lower improvements**. The good news is that you are already capturing these emerging trends by using VitaCurves.

What does this mean for the future?

Recent trends are a helpful guide to the short term. Your actuary can use the PLSA study to fine tune short term expectations to reflect your fund's population.

Much more material to your funding and investment strategy is how trends will evolve over the medium and long term for these different groups. Will life expectancies continue to diverge, or start to converge again (as they did over the 2000s)? We explore different potential scenarios over the next two pages.

“ From 2010 to 2015 the majority of your members saw higher than average longevity improvements ”

Alternative futures

How life expectancy will increase in the medium to long term is hugely uncertain. Nevertheless, in various different situations trustees are called upon to set an improvement assumption. There is a huge diversity of possible outcomes to consider, but discussions often focus on a small range, often couched in actuarial language.

In particular, typical sensitivities set out what happens to cashflows and liabilities if pensions were paid for 1 year more than expected. But they don't highlight the fact that most schemes are assuming a rapid slowdown in improvements, nor do they give any insight into specific scenarios. For example, what happens if life expectancies were to increase steadily as they did over the 2000s, or reduce to previous levels, or if the gap between shortest and longest lived continued to increase?

As part of Club Vita's PLSA study, we created 8 scenarios to help trustees understand the range of potential scenarios that could transpire over the coming decades².

Our scenarios cover a wide range of outcomes, ranging from material declines in life expectancy to prolonged continuation of recent increases. By focussing on the real world events that would need to occur for these scenarios to unfold, rather than focusing on improvement rates themselves, we help to give some context to each scenario to aid discussions.

How your fund would be impacted by each of these scenarios will depend on a number of factors, including the profile of your fund against the longevity trend groups shown on the previous page, as well as the age profile and maturity of your fund.

On the next page we investigate the approximate financial impact of each scenario, relative to your current funding. In doing so we have updated your current funding assumption to reflect recent mortality experience, which is likely to have reduced liabilities.

You may wish to explore one or more of these scenarios in more detail with your advisers – for example, to consider how your fund's funding and investment strategy would change if longevity trends developed in line with one of these scenarios.



Decline in life expectancy

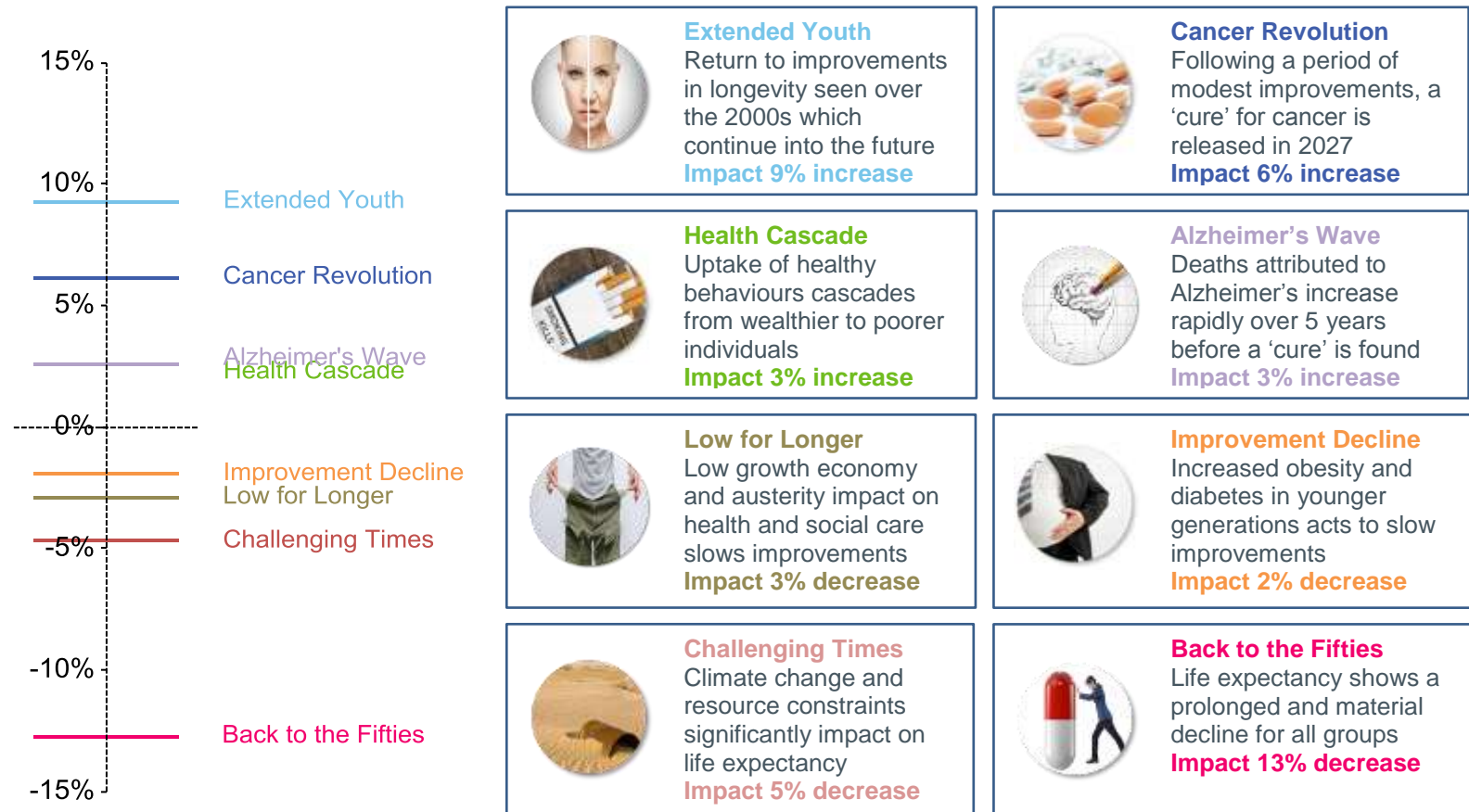

Material increase in life expectancy

“ How do you think longevity will change? ”


² More detail about each scenario is set out in our Longevity Trends publication with the PLSA <http://clubvita.co.uk/Documents/Longevity-model-Jun-17.pdf>

The financial impact of scenarios


We have considered the impact on your funding reserve of the future being in line with each of the scenarios. In doing so we have taken as a starting point your existing approach to setting longevity improvement assumptions. For example, for your fund, given your approach, if the future is like 'Extended Youth' your liabilities would increase by around 9%.


Extended Youth
Return to improvements in longevity seen over the 2000s which continue into the future
Impact 9% increase




Cancer Revolution
Following a period of modest improvements, a 'cure' for cancer is released in 2027
Impact 6% increase



Health Cascade
Uptake of healthy behaviours cascades from wealthier to poorer individuals
Impact 3% increase



Alzheimer's Wave
Deaths attributed to Alzheimer's increase rapidly over 5 years before a 'cure' is found
Impact 3% increase



Low for Longer
Low growth economy and austerity impact on health and social care slows improvements
Impact 3% decrease



Improvement Decline
Increased obesity and diabetes in younger generations acts to slow improvements
Impact 2% decrease



Challenging Times
Climate change and resource constraints significantly impact on life expectancy
Impact 5% decrease



Back to the Fifties
Life expectancy shows a prolonged and material decline for all groups
Impact 13% decrease

We can see for your fund the impact of the various scenarios ranges from a 13% reduction to a 9% increase in liabilities. This **22% spread** is indicative of the range of possible future outcomes that your fund might face (although the reality may be even more extreme than illustrated here).

Why this matters

- Understanding the range of potential outcomes can help justify your current assumption.
- It also provides a framework within which to consider the impact of alternative scenarios on your funding and investment decisions.
- Because our scenarios have specific narratives attached, this allows you to test your assumption against beliefs you have on what the future may hold.

Reliances and Limitations

This report is provided for the exclusive use of London Borough of Hackney Pension Fund as governed by the Club Vita Rules.

It must not be released or otherwise disclosed to any third party (in whole or in part) except as required by law, regulatory obligation or in accordance with the Club Vita Rules. Third parties placing reliance on this report do so at their own risk and Club Vita accepts no liability in relation to any such reliance.

The contents of this report are reliant on the data supplied to us on your behalf including administration data provided by Bruce Barry of Equiniti Pension Solution Operations on 22 November 2018.

This report forms part of a suite of reporting from Club Vita. This report provides a summary of key results from Club Vita's analysis. More detail on the analysis, including key assumptions and any material uncertainties are covered within your full set of reports available via the members' area of www.clubvita.co.uk. In aggregate these reports meet the requirements of TAS 100.

Club Vita LLP is an appointed representative of Hymans Robertson LLP which is authorised and regulated by the Financial Conduct Authority.

© Club Vita LLP 2019