



# KPMG's Pensions Accounting Survey 2018

**An insight into market trends  
at 31 December 2017**

May 2018

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# Introduction



KPMG's Pensions Accounting Survey 2018 looks at trends in best-estimate assumptions based on 230 of KPMG's clients with UK Defined Benefit (DB) pension schemes reporting under IFRS, UK GAAP or US GAAP at 31 December 2017. Our data sample spans the whole of the market, including companies who are advised by all the leading consultancies. This enables us to provide a detailed insight into market-wide practice helping discussions that go beyond accounting.

Following on from the significant volatility experienced across the economy in the previous year, 2017 was much more stable. High inflation, driven by depreciating sterling, and the UK's looming departure from the EU, have taken their toll on the economy with the lowest annual growth in five years.

Despite this, for the first time in more than a decade, the Bank of England increased its benchmark interest rate. This increase of 0.25% returned interest rates to levels seen before the announcement of the UK vote to leave the EU in 2016. It is hoped that this will help to bring inflation back down to the 2% p.a. target.

As the rise in interest rates had already been largely priced into the market, it was slightly surprising that this was followed by a minor fall in the longer term bond yields relevant for pension schemes. This was driven by a statement made by Mark Carney, Governor of the Bank of England, that future rate rises would be 'gradual' and 'limited'.

This led to investors revising their expectations of the pace of future increases downwards, driving down the bond yields.

However corporate bond yields recovered, and finished the year only slightly lower than at the start. These lower yields would generally have increased pension scheme liabilities relative to last year.

Asset returns were not as strong as 2016. UK equities performed relatively well returning 13% over the year. On the other hand corporate bonds only returned 3%, a noticeable decrease compared to 12% in 2016.

The effect on individual pension scheme balance sheets would depend on the types of assets held, and the level of hedging in place.



## Financial headlines

**Median net discount rates (measured as the difference between the discount rate and RPI inflation) are negative for the second consecutive year. 2016 was the first time we saw negative net discount rates since our survey began and this trend is continuing with net rates shifting even further downwards.**

- The median discount rate assumption fell from 2.7% last year to 2.5% at 31 December 2017.
- Despite a number of companies looking to alternative approaches to setting their discount rate assumption, the distribution of assumptions remains closely packed around the median.

- Around 90% of companies surveyed had a discount rate assumption within 0.1% of the median reflecting the flat shape of the yield curve, with only small differences for different durations.
- The range of discount rate assumptions adopted has decreased from 0.8% last year to 0.5% this year.
- Long term inflation expectations have remained stable with a median assumption of 3.3%.
- The range of RPI inflation assumptions adopted has decreased from 0.8% last year to 0.7% this year.

## Demographic headlines

**Life expectancy assumptions have continued to decrease for the third consecutive year.**

- The median life expectancy assumption has fallen by 0.2 years for current pensioners, and 0.6 years for future pensioners.
- The Continuous Mortality Investigation Bureau (CMIB) continually updates its research and produces annual updates of the CMI projection model. For the

past three years, these updates have projected a slowing rate of future mortality improvements. With 77% of the companies surveyed adopting the latest CMI projections at the time (CMI 2016), this has resulted in assumed life expectancies falling.

- Despite the significant transfer value activity seen this year, only 3% of companies surveyed have included an explicit assumption in their accounts around future transfer expectations.

## Looking ahead

**There are a number of issues which could affect companies during 2018 and beyond, including:**

- The decision of the International Accounting Standards Board (IASB) to revise its proposed changes to IFRIC 14.
- The Financial Reporting Council's (FRC) review into best practice for pension disclosure notes.
- The variations in the approach to setting the discount rate assumption.

- The changes to the way service cost will be presented under US GAAP published by the Financial Accounting Standards Board (FASB).
- The changes to how the IAS 19 pension expense is calculated after the occurrence of a special event.

We explore these issues and more on pages 14 to 21.

# Key headlines

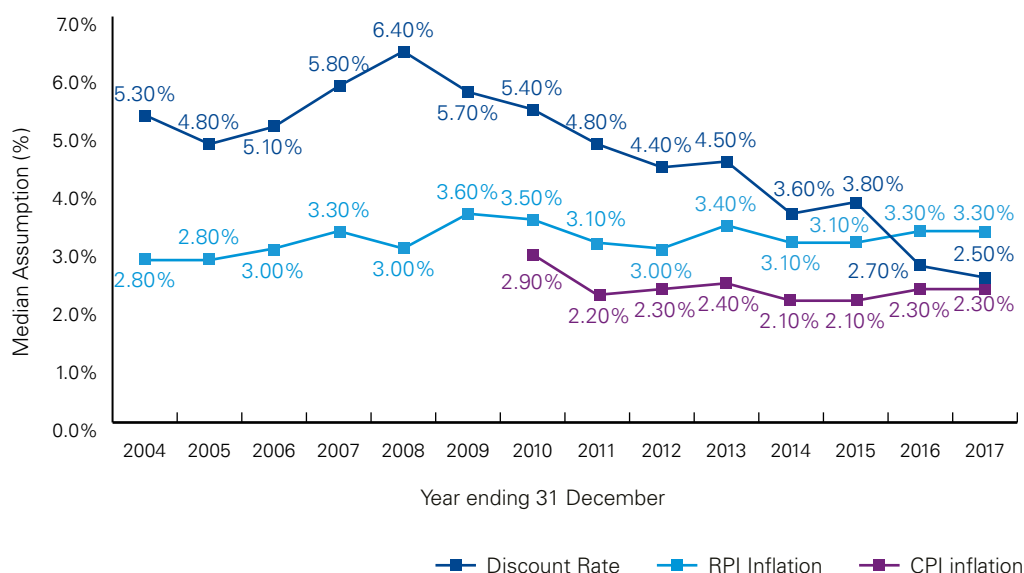
## Financial assumptions



Real AA discount rates have fallen slightly at -0.8% compared to -0.7% last year.

- The median discount rate at 31 December 2017 was 2.50%. This reflects a decrease of 0.20% compared to the median last year.
- The median RPI inflation rate was 3.30% at 31 December 2017 (in line with the median rate last year).
- The median CPI inflation assumption adjustment and inflation risk premium also remained unchanged from the previous year at 1.00% and 0.20% respectively.

## Movement in Median Assumptions



Source: KPMG analysis

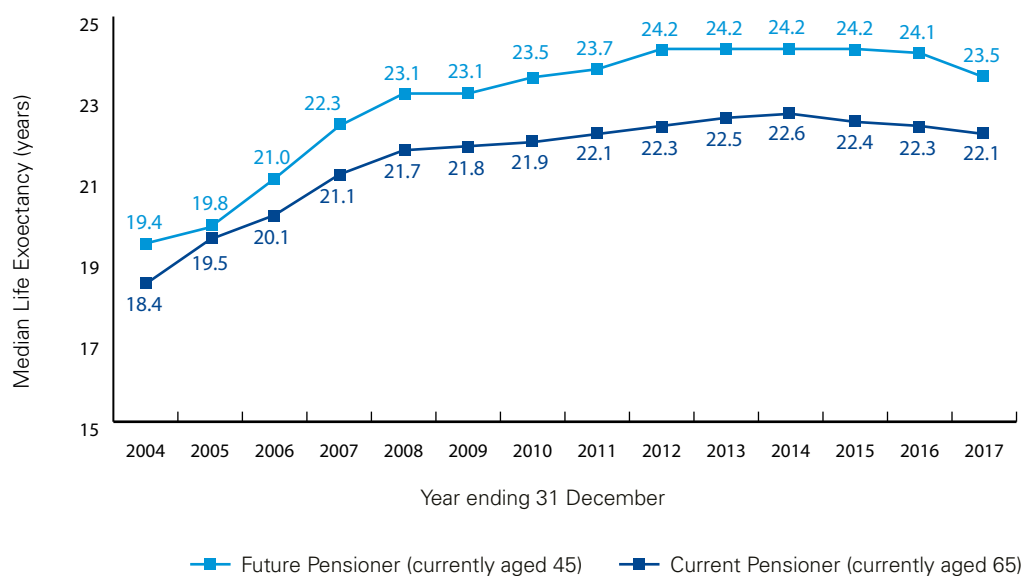
## Demographic assumptions



Median assumed life expectancies have decreased by 0.2 years for current pensioners and by 0.6 years for future pensioners.

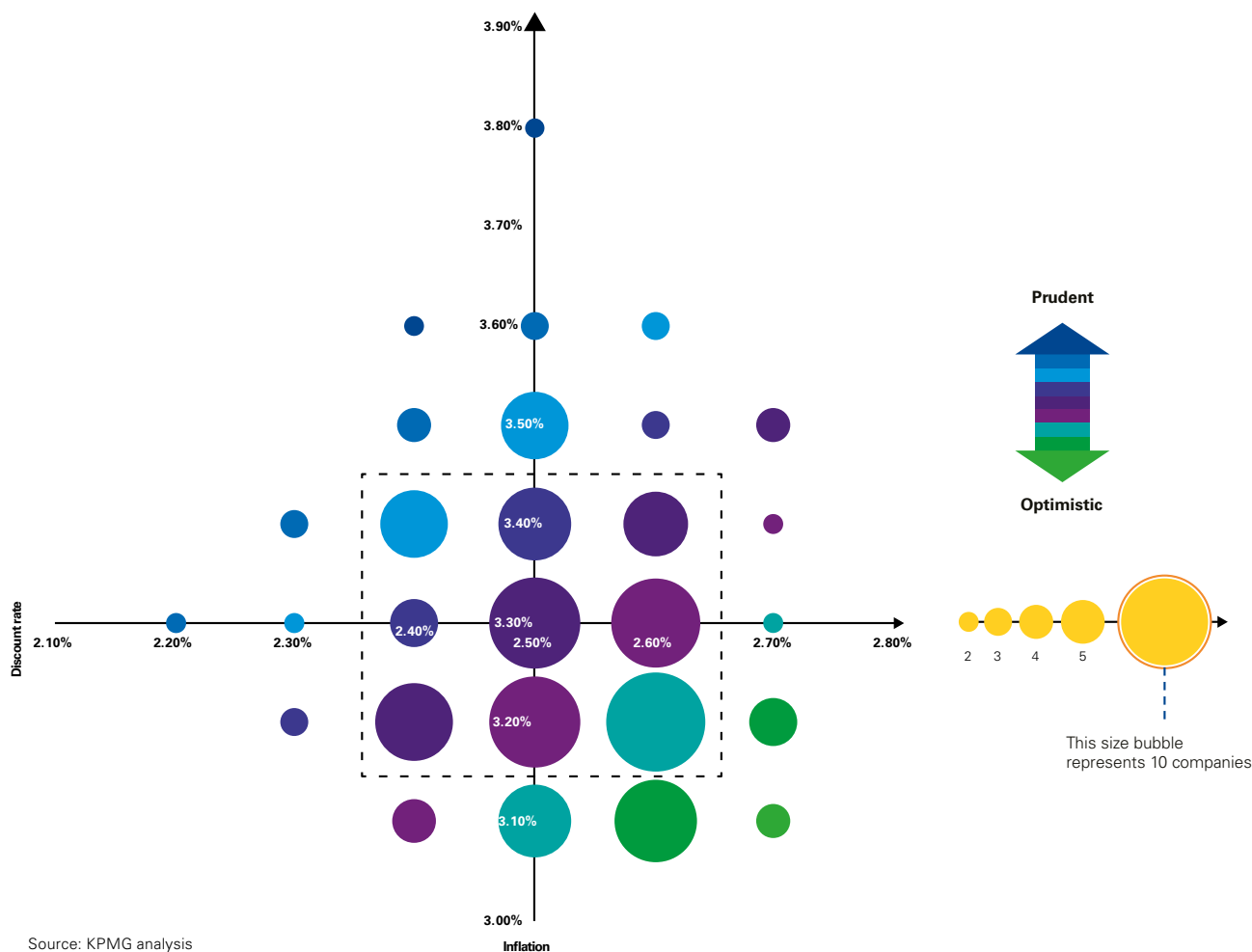
- The trend of falling life expectancies seen over the past three years has continued. This is due to the slowing rate of future mortality improvements projected by the Continuous Mortality Investigation Bureau (CMIB) over the past three years.

### Movement in the life expectancies



# Key headlines (continued)

## Overall strength of financial assumptions adopted

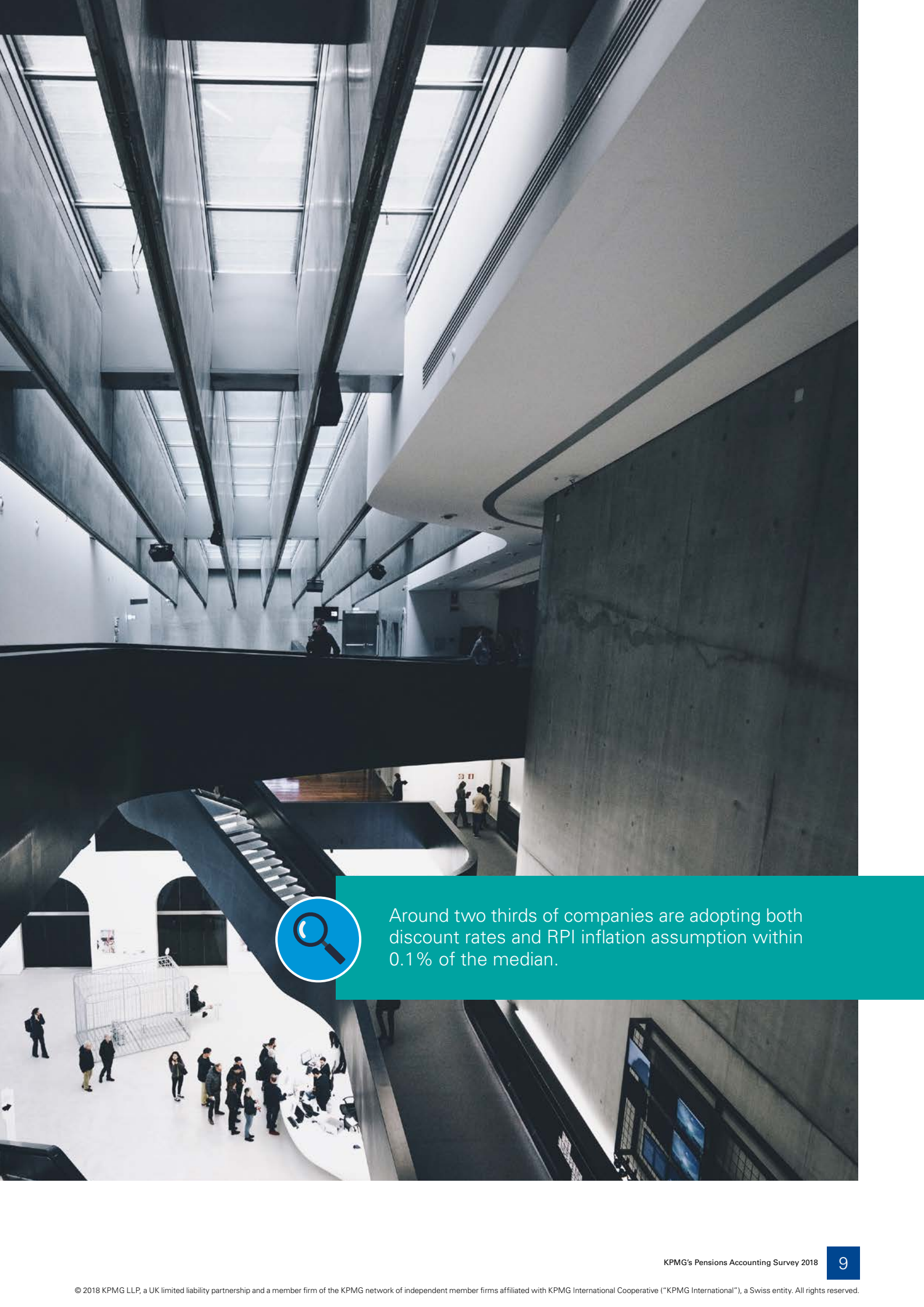


The bubble chart above shows the discount rate assumption plotted against the corresponding RPI inflation assumption adopted by each company in our data sample. The size of the bubble indicates the number of companies adopting those assumptions.

The axes cross at the median discount rate and RPI inflation assumption. Therefore, companies who are in the bottom right square are adopting assumptions that are more optimistic than the median, and companies who are in the top left square are adopting assumptions that are more prudent than the median.


Given the flat shape of the corporate bond curves and the inflation curves this year there is less variation in assumptions by duration. This has resulted in the majority of companies being very tightly packed around the median. The graph shows around two thirds of companies are within the central square that sits within 0.1% of both the median discount rate and the median RPI inflation assumptions. Outside of this square there are slightly more companies towards the optimistic end of the chart.






Around two thirds of companies are adopting both discount rates and RPI inflation assumption within 0.1% of the median.

# A look back to 2017



2017 was a relatively stable year for pension schemes, especially compared to the marked volatility experienced during 2016. Many schemes would have finished off the year with balance sheet positions similar to that at the start of the year, although this will vary depending on the asset mix schemes held.

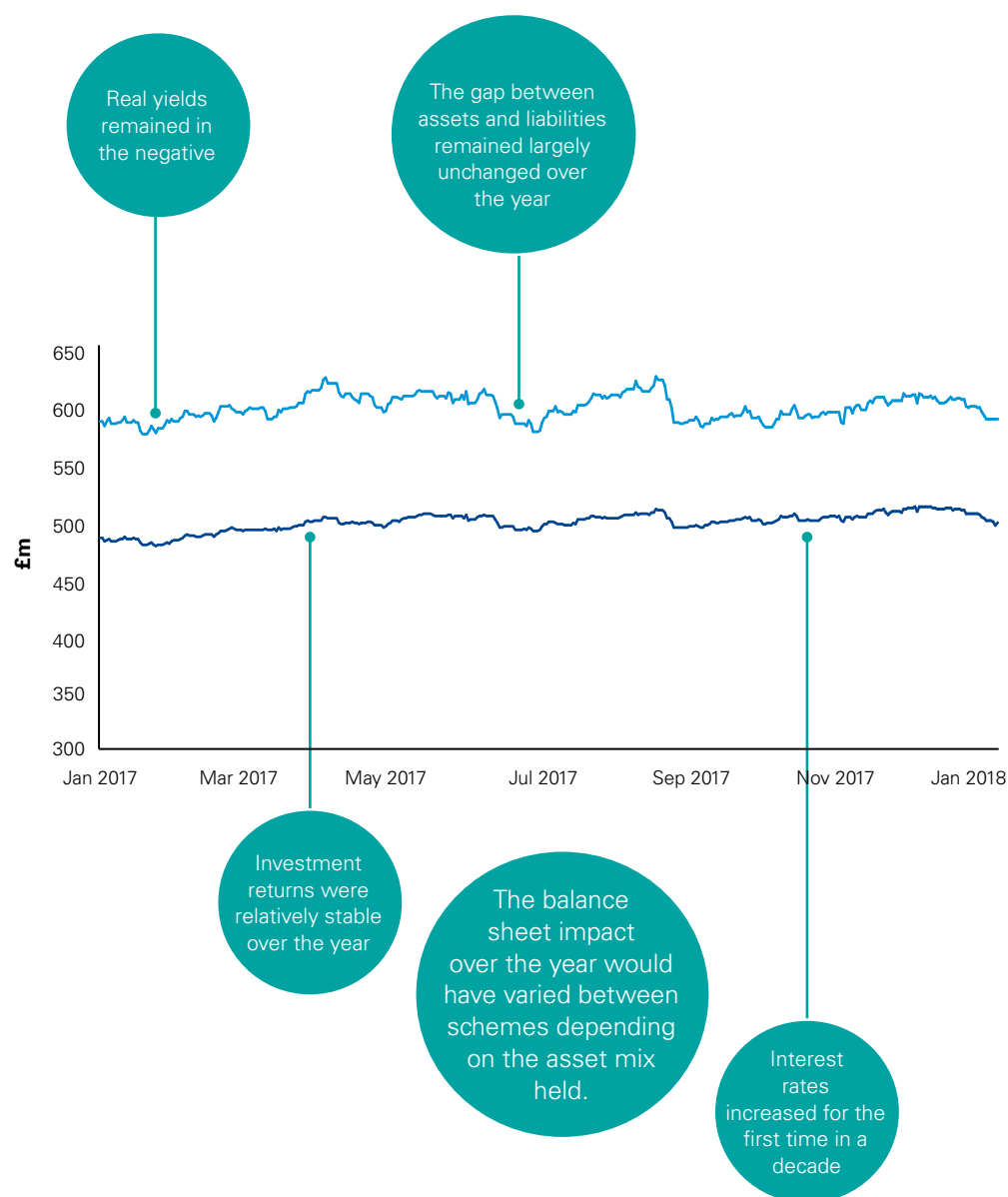


Low bond yields and increased pensions freedoms, which came into effect during 2015, have resulted in an increase in the number of members opting to transfer their benefits out of DB schemes. It is estimated that since April 2015, around £50bn has been transferred out of private sector DB schemes.

Despite this, 97% of companies surveyed have not adopted an explicit assumption about expectations for future transfers out of their schemes. Limited scheme experience data and uncertainty around whether the recent high transfer activity is likely to be a continued trend has left most companies opting to hold off from making an explicit assumption within their accounts.



The chart to the right, based on KPMG's Fusion tool, shows how assets and liabilities may have moved for a typical scheme over the year.



Source: KPMG Fusion for a typical pension scheme with a small level of interest and inflation hedging in place, and limited exposure to global investments.



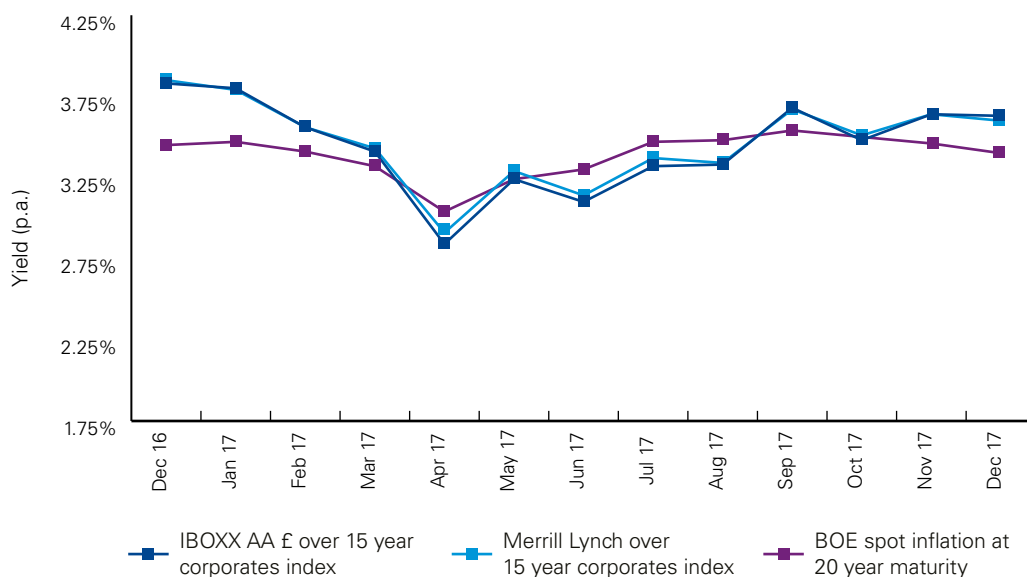
# A look back to 2017 (continued)

## Liabilities

Both nominal and real discount rates (based on the difference between AA corporate bond yields and assumed RPI inflation) have finished slightly lower relative to the beginning of the year (illustrated in the chart below).

Real yields finished around 0.1% lower than at the start of the year. For a typical scheme with a duration of around 20 years, we estimate this will have meant an increase to defined benefit obligations of around 2% over the year.

### Yield trends over 2017



Source: KPMG analysis

## Assets

Overall, assets performed well over the year, albeit not as strong as during 2016. The Fusion snapshot on the previous page shows assets were fairly stable over the year, with moderate growth. The actual returns achieved will vary significantly across schemes depending on the mix of assets held and any hedging strategies in place.

A typical pension scheme invested in a combination of equities and bonds could have seen assets return just under 10% over the year. This compares to just under 25% last year.

Typical asset class returns over the year are set out below:

- Corporate bond yields produced an annual return of around 3%, noticeably lower compared to 12% over 2016 (IBOXX corporate AA index for all maturities)
- Gilt yields performed similarly:
  - Conventional gilts returned 3%, compared to 19% in 2016 (FTSE fixed interest government bonds, over 15 years index)
  - Index-linked gilts returned 3%, compared to 33% in 2016 (FTSE index linked government bonds, over 15 years index)
- The Stock market performed better compared to the bond market:
  - UK equity returned 13%, compared to 17% in 2016 (FTSE all share index)
  - Global equity returned 14%, compared to 30% in 2016 (FTSE all world excluding UK index)



Slightly lower corporate bond yields may have increased liabilities by around 2% for a typical scheme with a duration of 20 years.



# A look ahead to 2018 and beyond



The pensions accounting landscape is constantly evolving. On the following pages we discuss some topical issues which could affect companies during 2018 and beyond.





## What is IFRIC 14?

IFRIC 14 determines whether a company can recognise any pension scheme surplus that exists. Furthermore, if the sponsoring employer has a funding commitment in excess of the IAS 19 deficit, then IFRIC 14 requires recognition of this excess when the surplus that would result on fulfilling that commitment cannot be recognised.



## IFRIC 14

**Following concerns that some employers may be able to make changes to their plan rules to avoid adverse outcomes of the proposed changes to IFRIC 14, the International Accounting Standards Board (IASB) has decided to revisit the topic.**

### What has changed?

In September 2017, the IASB decided to revisit the proposed changes to IFRIC 14 (which date back to the June 2015 Exposure Draft).

IFRIC staff will now carry out a review to establish a 'principles-based' approach to the recognition and measurement of net defined benefit assets (i.e. plan surpluses).

This means there is now uncertainty on the potential for balance sheet impacts in respect of UK plans, however in our view there is a direction of travel towards possible greater restrictions on asset recognition in the future.

### Implications for companies

Current expectations are that a revised IFRIC 14 will not be published in the near future. It is likely that any new proposal will need to be re-exposed, which could delay any decision for at least another two years. Until then, companies should follow the current version of IFRIC 14.

In our view no new disclosures are required as a result of these deliberations. However the Financial Reporting Council still expects UK corporate reporters to disclose information around the availability of a net pension asset.

# A look ahead to 2018 and beyond

(continued)

## FRC thematic review of pensions disclosures

Each year, the Financial Reporting Council (FRC) carries out a thematic review of particular topics. In November 2017, it published a report setting out the findings from its review of pensions disclosures. The FRC's findings go beyond the requirements of the accounting standards and highlight areas of good practice to ensure disclosures provide high quality information to the reader.

The FRC's expectations for pensions disclosures are in line with the overall disclosure objective of IAS 19, which states that:

"An entity shall disclose information that:

- Explains the characteristics of its defined benefit plans and risks associated with them;
- Identifies and explains the amounts in its financial statements arising from its defined benefit plans; and
- Describes how its defined benefit plans may affect the amount, timing and uncertainty of the entity's future cash flows."

In its report, the FRC covers a number of key areas, highlights what can be considered as good practice, and identifies where improvements can be made. It also references examples of companies whose published accounts meet its expectations, and are a good example to follow.

### Implications for companies

Companies should consider updating their disclosures for the areas that the FRC has focused on.

## Areas highlighted for good practice in pension disclosures:

### Investment strategy

- Clear description of the investment strategy and its inherent risks.
- A better explanation of any asset-liability matching strategies and providing more disaggregation of asset disclosures.

### Balance sheet recognition

- Disclosing policy that would apply to any potential balance sheet asset.
- Disclosure of any judgement made in assessing the position.

### Funding commitments

- Reference to the triennial valuation.
- Explanation of the difference between the triennial valuation and accounting values.
- Details of funding arrangements and expected contributions beyond the next year.
- Clear disclosures about contingent contributions.

### Scheme profile

- Disclosing the weighted average duration of the scheme.
- Disclosing further details on the maturity profile of the obligations.
- Use of graphs, charts and tables to convey this information better.

### Strategic reports

- Include commentary in strategic reports, not just the pensions note.
- Sufficient detail included in the strategic report to reflect the significance of the pension scheme to the entity and shareholders' funds.





Just over 41% of companies are adopting a discount rate of 2.6% or higher which likely incorporates a move to an alternative discount rate approach. More details are provided on page 23.

## Variations in discount rate approaches

Following record low corporate bond yields during 2016, we have seen more companies consider changes to their discount rate methodology, to help alleviate some of the negative effects of low discount rates. Whilst IAS 19 is quite prescriptive about how the discount rate may be set, subtle variations around bond selection and extrapolation of the yield curve may be possible.

We have seen some companies hitting the headlines this year for making material changes to their discount rate approach. This has led to discount rates increasing by up to as much as 0.4%, significantly reducing the deficit values disclosed.

However this scale of change has been in the minority with the range of discount rate assumptions in our survey still closely packed around the median assumption.

The alternative approaches provide a range of discount rate assumptions, with some having only a small impact through to other more aggressive methodologies. The ultimate impact will depend on scheme characteristics, with less mature schemes affected more.

Companies making a material change will be expected to disclose the change along with the impact on the financial statements under the requirements of IAS 8. Companies should therefore consider how such a disclosure will be received by investors, analysts and the press. Management will also need to consider the audit committee's likely view and the appetite for potentially more difficult conversations with auditors and/or increased scrutiny from readers of the accounts.

Persistent low yields may continue to push alternative approaches. However we expect many clients may take a "wait and see" approach before considering adopting any of the more aggressive methodologies in the market. Whilst compliant with IFRS, it remains to be seen to what extent the FRC will scrutinise the more aggressive approaches.



# A look ahead to 2018 and beyond

(continued)

## Variations in discount rate approaches (continued)

### Alternative approaches

IAS 19 states that the discount rate should be based on high-quality corporate bond yields of a term consistent with the underlying benefit obligations. In addition, the discount rate, like other assumptions, should be unbiased.

We have seen variations in three key areas over the year which can lead to higher discount rate assumptions:

#### 1. Single agency approach

The typical bond universe considered consists of bonds that have been rated as AA by the majority of the rating agencies (normally at least two out of three). A single agency approach includes all corporate bonds that have been rated AA by at least one of the main rating agencies. This will increase the size of the bond universe that can be used compared to the standard approach.

#### Potential impact



Discount rate could increase by around 0.10%-0.15%



Liabilities could reduce by around 2.0%-3.0%

*For a scheme with a duration of 20 years*

#### 2. Removing quasi-governmental bonds

There are currently a number of UK bonds that are considered to be corporate bonds, but could be eliminated on grounds of having at least a quasi-governmental aspect to them. For example we have seen approaches that remove university, housing association, or Transport for London bonds.

#### Potential impact



Discount rate could increase by around 0.05%



Liabilities could reduce by around 1%

*For a scheme with a duration of 20 years*



### 3. Extrapolating the curve

Corporate bond data is limited at the longer terms. Given pension scheme cash flows are long term in nature there is a need to extrapolate the yield curve at the longer end once the data becomes limited. IAS 19 says very little about how a yield curve should be extrapolated so there is scope for variation in approach. For example, the yield curve could be extended in line with a fixed spot or fixed forward rate could be assumed over longer durations, or swaps or gilts data can be used. Less mature schemes will be more affected by any change made here.

#### Potential impact



Discount rate  
could increase by  
around 0.15%



Liabilities could  
reduce by around  
5%

*For a scheme with a duration of 20 years*

A combination of the above approaches, could see a large change in the resulting discount rate assumption, particularly for an immature scheme, however is likely to attract scrutiny from auditors and analysts.

# A look ahead to 2018 and beyond

(continued)

## US GAAP – Service cost presentation

The Financial Accounting Standards Board (FASB) recently published an amendment to US GAAP which will require the separation of the net periodic pension cost into the service cost and other components. This is likely to make the expected return on assets assumption less significant, and may influence the behaviour of companies when it comes to making decisions about pensions exercises in the future.

Currently, under US GAAP all elements of the net periodic pension cost are reported in the same line of the income statement within operating income.

During March 2017, the FASB published an amendment which will require the separation of the net periodic pension cost into the service cost and other components. Current service cost will be the only element presented within operating income, with all other elements (interest cost, expected return on assets, amortisations, curtailments, settlements and termination benefits) presented separately from the service cost component and outside a subtotal of income from operations.



### *Timescales*

This will be effective for public entities for years beginning after 15 December 2017, and 15 December 2018 for non-public entities. Early adoption is permitted.

In addition companies who may have been put off running certain liability management exercises in the past due to unattractive accounting implications may reconsider this decision. The requirement to accelerate recognition of actuarial losses if settlement accounting applies, may no longer be a concern if those losses are reported outside of operating income.

## US GAAP – Settlement accounting

Under US GAAP cash equivalent transfer values are potentially counted as a settlement which is different to IFRS, where a payment has to be on non-standard terms to trigger a settlement.

Under US GAAP, if the sum of all transfer payments made during the year exceeds the service cost and interest cost for the year, then settlement accounting is required. This essentially requires accelerated recognition of any unrecognised actuarial gains or losses, including any gain or loss arising from the transfer payments themselves. For example if a scheme discharges 5% of its liabilities, then settlement accounting would require the sponsor to recognise 5% of unrecognised gains or losses.

Given the high levels of transfers over the year we are starting to see the threshold breached, giving a profit and loss impact for US GAAP reporters even without a company initiated exercise.

## Impact on company pensions strategy

This could significantly influence the behaviour of companies going forwards.

Earnings forecasts will need to be carefully considered to rebase expectations. For example, a company could have a prior service gain currently being amortised through profit and loss from previous scheme benefit changes.

It is also possible that the expected return on asset assumptions may not be deemed as critical by management if the operating benefit of this disappears.



## Changes to IAS 19

The International Accounting Standards Board (IASB) published an amendment to IAS 19 in February 2018 which changes how the pension expense is calculated for the balance of the year, immediately after a special event has occurred (plan amendment, curtailment or settlement). In addition, clarification was provided around how the calculation of these special event items are reported when there is an asset ceiling restriction.

Under current IAS 19, when there is a benefit change during the year, the pension cost for the whole year, both before and after the change, is based on the actuarial assumptions at the start of the year.

In future the components of the pension cost after special events will be remeasured based on assumptions at the date of the event. This will bring IFRS in line with US GAAP in this regard.

In addition, the IAS 19 changes clarify that any gains or losses on special events will go through the profit and loss account, regardless of any asset ceiling restriction. Any change in the effect of the asset ceiling will be considered separately and will be recognised via Other Comprehensive Income.

When carrying out benefit change exercises or settlements, companies should consider the impact of the new IAS 19, as this might influence a company's choice over the timing of such exercises.



The changes are effective for years beginning on or after 1 January 2019.

# Discount rate

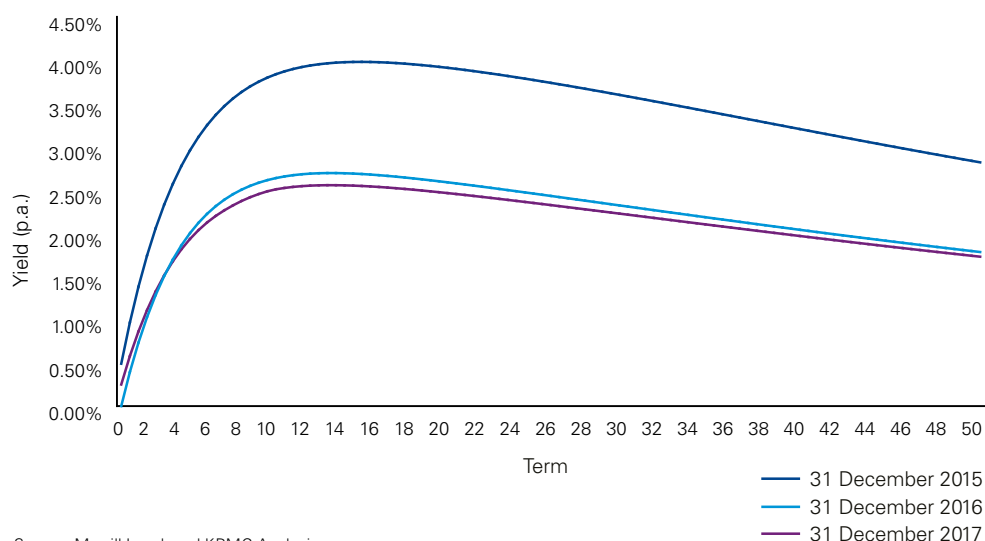


The discount rate is used to calculate the present value of future liabilities in a scheme.

The yield on the iBoxx Sterling AA Corporate Over 15 Year index, which has a duration of around 15 years, decreased by 0.18% over the year.

The graph below illustrates how the yield curve has changed over the past three years.

**AA corporate bond yield curves**



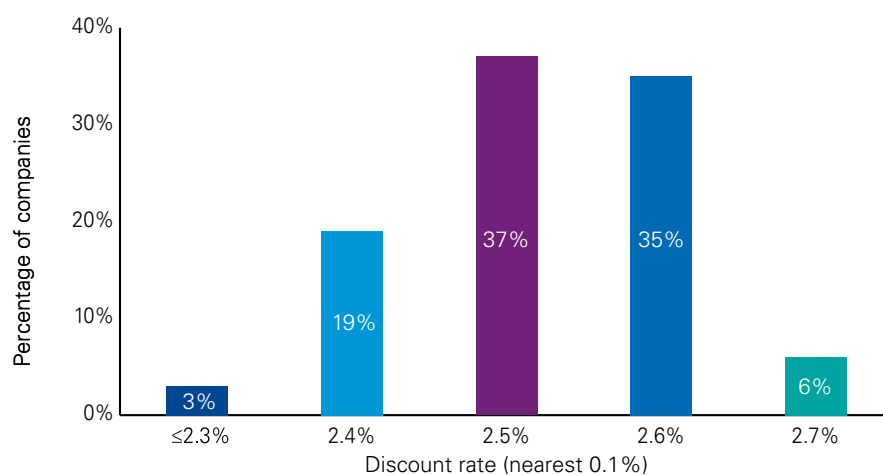
AA corporate bond yields (and hence discount rates) have increased at very short durations, but decreased over longer durations, compared to last year. However these changes are very slight, and the general shape of the curve has remained broadly unchanged compared to last year.



## Distribution of discount rate assumptions

The graph shows the overall distribution of discount rates adopted by companies at 31 December 2017.

The median discount rate has decreased by 0.20% over the year to 2.50% at 31 December 2017.



Source: KPMG analysis



Around 91% of companies adopted an assumption within 0.10% of the median discount rate compared to 85% last year.



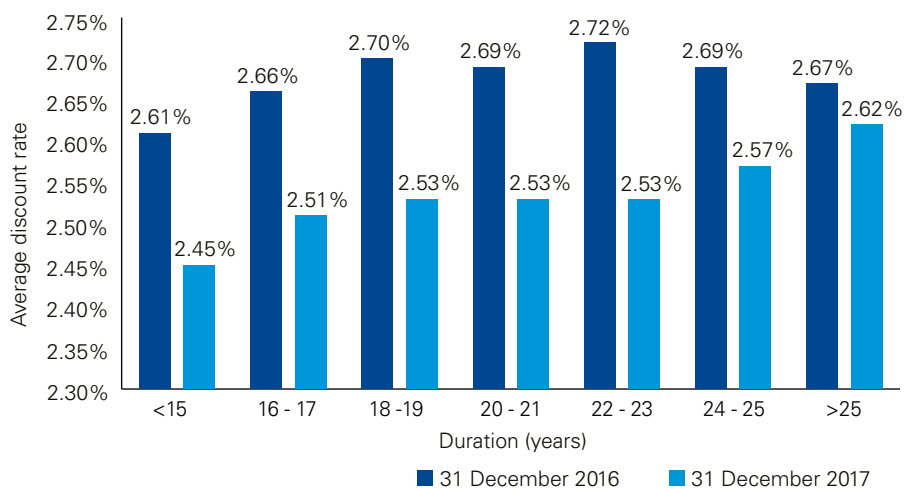
# Discount rate (continued)

## Distribution of discount rate assumptions by duration

The graph shows the discount rates used by schemes grouped by the duration of their liabilities. This uses our survey sample in 2016 and 2017.

Discount rates for schemes have fallen over the year. This is slightly more pronounced for mature schemes (shorter duration) than for immature schemes (longer durations).

Duration has had less of an effect on the average discount rate this year, reflecting the flat shape of the yield curve at 31 December 2017. There is a tight range of average assumptions for schemes with a duration of around 16 to 23 years.



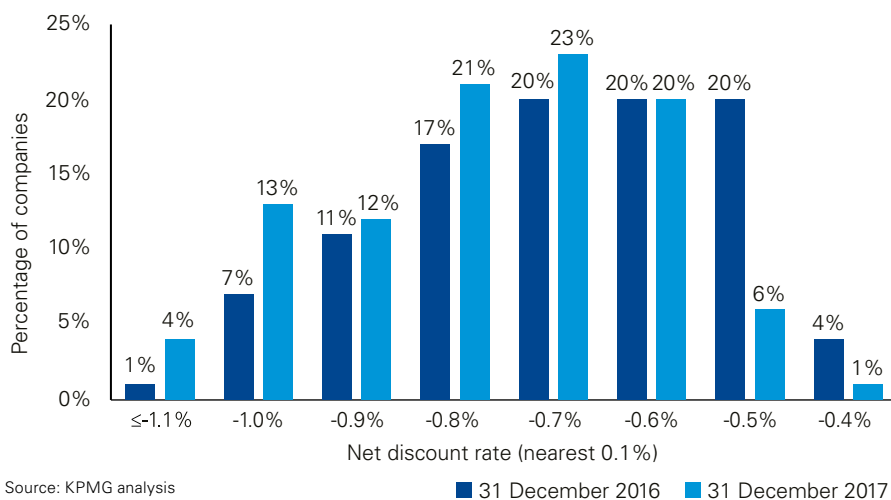
Source: KPMG analysis



## Distribution of net discount rate assumptions

Net discount rate assumptions are negative for the second consecutive year since our survey began.

The median net discount rate has decreased slightly from -0.70% last year to -0.8% at 31 December 2017.



The median net discount rate has fallen by 0.1%. This would increase liabilities around 2% for a typical scheme with a duration of 20 years.

# Inflation



The inflation assumption is typically used as a basis to set other assumptions used for pensions accounting such as pension increases in payment, deferred revaluation and long-term salary growth.

The median RPI inflation assumption of 3.30% at 31 December 2017, has remained unchanged compared to last year.



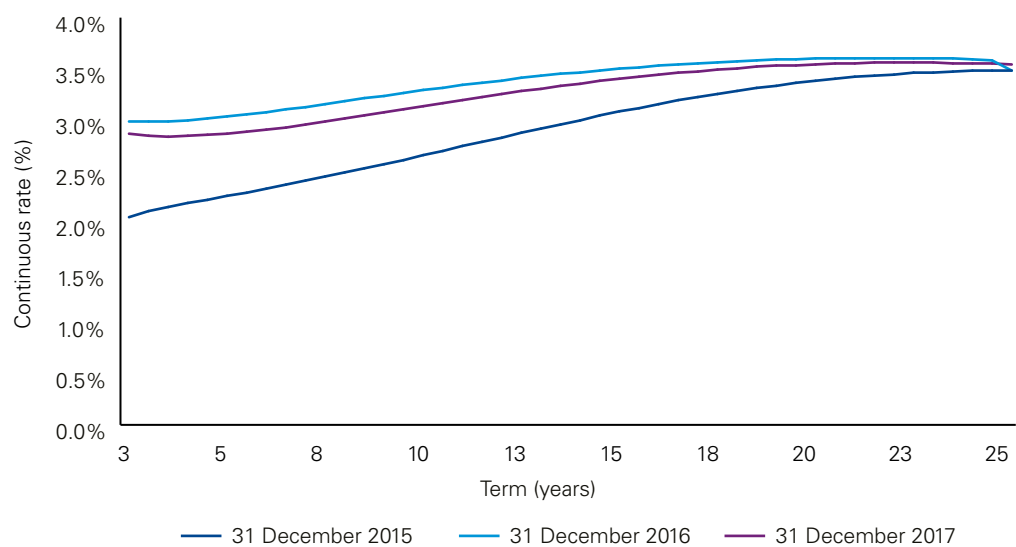
The range in RPI inflation assumptions adopted has decreased from 0.8% last year to 0.7% this year.



## RPI inflation

The graph below shows long term RPI inflation expectations. The shape of the curve is largely unchanged from last year.

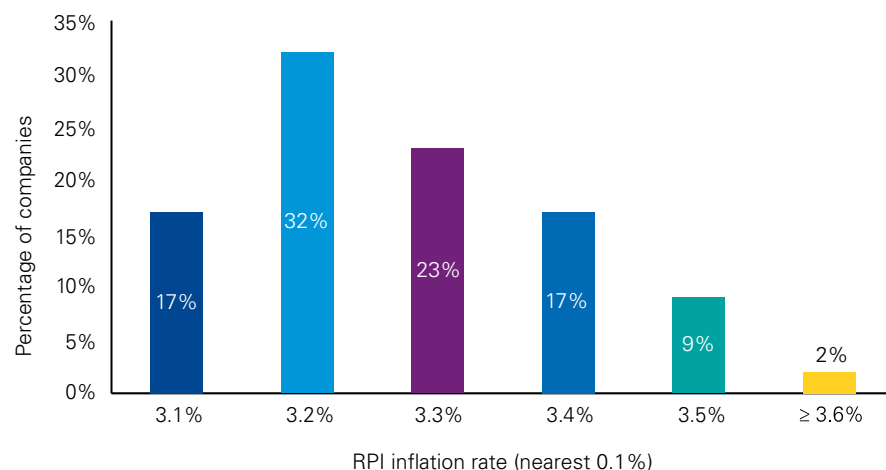
### Movement in Inflation Spot Curve



Source: Bank of England

The graph below shows the distribution of RPI inflation rates adopted by companies at 31 December 2017. The median RPI inflation assumption is 3.30%. The range of RPI assumptions is slightly less tightly packed around the median compared with last year.

### Distribution of RPI inflation assumptions



Source: KPMG analysis

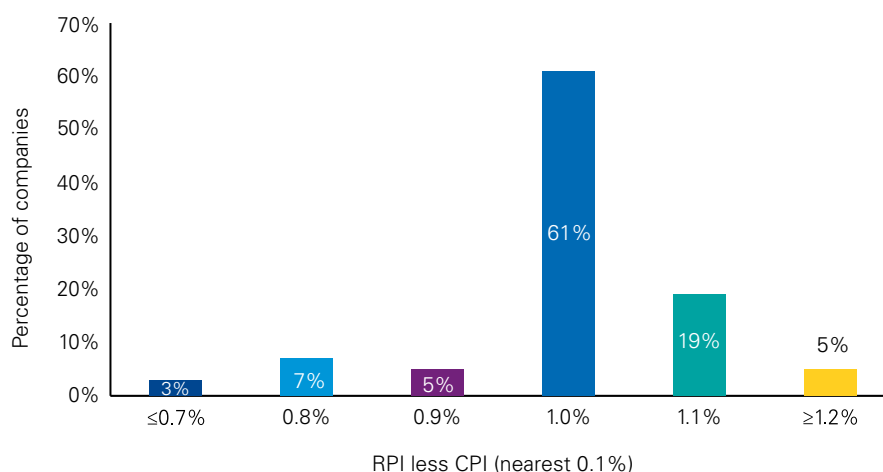
# Inflation (continued)

## CPI inflation

CPI inflation is typically used for deferred revaluation and some pension increases. As there are no market indicators for CPI inflation, it is usually set using an offset to the RPI inflation assumption. The graph below shows

the spread of the RPI-CPI 'wedge' used by companies as at 31 December 2017. There is a clear trend with the majority of companies adopting the median of 1.00%, which is unchanged from last year.

**Distribution of RPI – CPI wedge assumptions**



Source: KPMG analysis



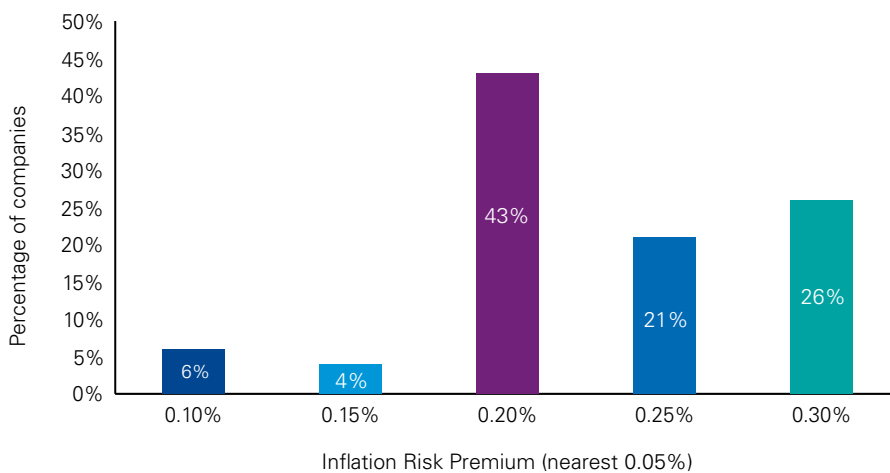
Around 85% of companies are adopting a RPI-CPI wedge of within 0.10% of the median, slightly lower than the proportion last year (90%).



## Inflation risk premium

An inflation risk premium (IRP) is often applied to reflect certain supply and demand effects on the gilts market. These are argued to keep break-even inflation rates artificially high.

### Distribution of inflation risk premium assumptions



Source: KPMG analysis



At 31 December 2017, around 80% of companies used an IRP adjustment.



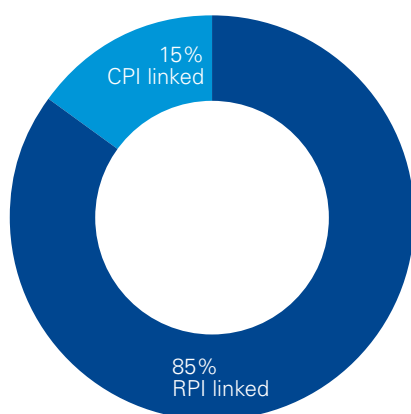
The median IRP remains unchanged since 2012 at 0.20%.

# Inflation (continued)

## Pension increases

The majority of companies have post retirement increases which are linked to RPI inflation.

### Split of pension increase assumptions



Source: KPMG analysis

Given that the Retail Prices Index has been discredited over recent years, we have seen a number of schemes questioning whether this is the right inflation measure for their pension increases to be linked to.

There have been a number of high profile court cases which ruled in favour of certain schemes being able to switch their pension increases from being linked to RPI inflation to be linked to CPI inflation.

Given the growing body of case law in this area, we are starting to see more companies review the wording in their own scheme rules to understand if a change will be possible. It will be interesting to see how this develops in future years.

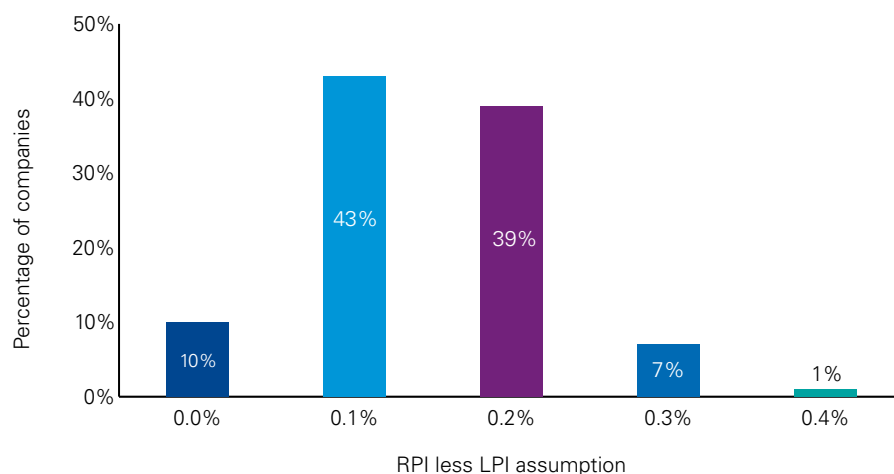




The most common pension increase is inflation capped at 5.00% each year which is known as Limited Price Inflation (LPI). This assumption is usually set by applying an adjustment to the RPI inflation assumption, based on the expected future volatility of inflation. As inflation rates remained stable over the year, we have seen similar offsets being applied to RPI inflation in order to derive the LPI assumption, compared to last year.

There remains a small range of pension increase assumptions, with around 90% of companies adopting an adjustment within 0.10% of the median.

#### Distribution of RPI-LPI offset assumptions



Source: KPMG analysis



The median adjustment used by companies is 0.10% which remains unchanged since 2010.

# Inflation (continued)

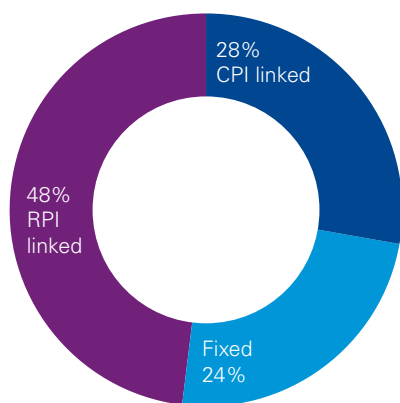
## Salary increases

Salary increases are generally linked to economic growth and inflation levels.

The majority of companies are still referencing RPI inflation, however, there has also been an increase

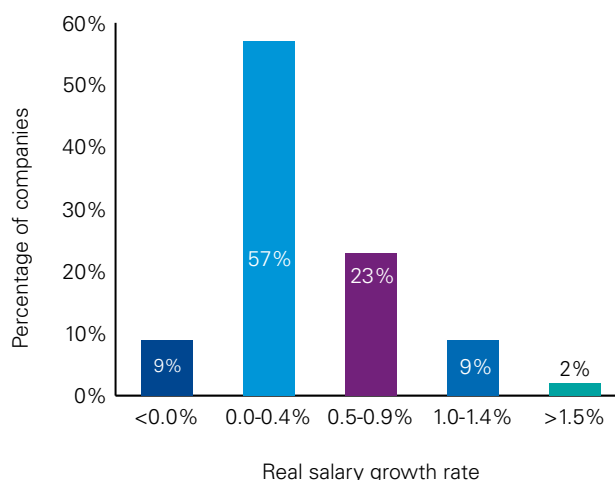
in the number of companies adopting a fixed salary increase assumption (24% compared to 14% last year). Around the same proportion are basing the assumption on CPI inflation as last year.

### Split of salary increase assumptions



Source: KPMG analysis

### Distribution of RPI linked salary growth assumptions



Source: KPMG analysis



The median RPI linked salary increase has remained at 0.00% above RPI inflation at 31 December 2017, in line with last year.





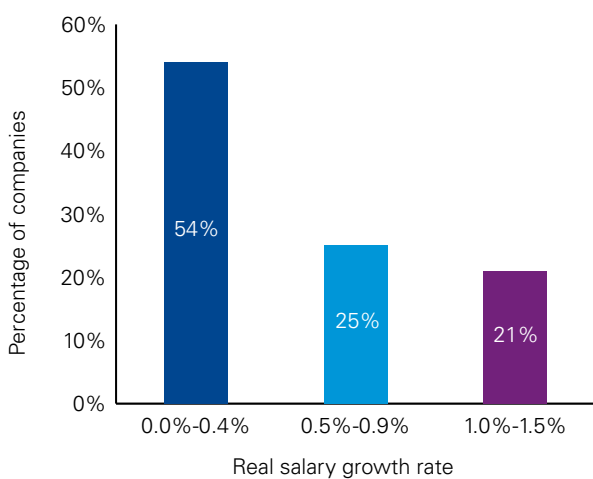
17% of companies adopting salary increase assumptions have capped pensionable salary increases.

The median CPI linked salary increase assumption adopted was 0.20% above CPI inflation at 31 December 2017, compared to 0.50% above CPI inflation last year.

As more companies close their pension schemes to future accrual and active member populations reduce in general, the salary increase assumption becomes

less important. More than 70% of the companies in our sample are closed to future accrual, with more already closed to new entrants. This trend is only expected to continue as companies try to reduce uncertainty in relation to their future pension liabilities. Intermediate measures such as capping pensionable salary increases are also increasingly common.

### Distribution of CPI linked salary growth assumptions



Source: KPMG analysis

# Mortality



Mortality assumptions remain key for pension schemes, with continuing research and new approaches to scheme-specific mortality studies allowing companies to more accurately quantify their longevity risk.

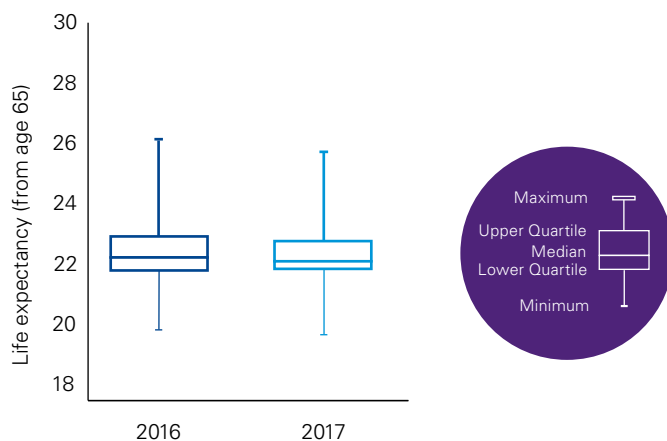
Median assumed life expectancies for current pensioners have reduced by 0.2 years and for future pensioners have reduced by 0.6 years compared to last year, marking the third reduction in recent years for current pensioners, and the second for future pensioners.

## Life expectancies

The graphs below show the spread of life expectancy assumptions used by companies for their current and future pensioners.

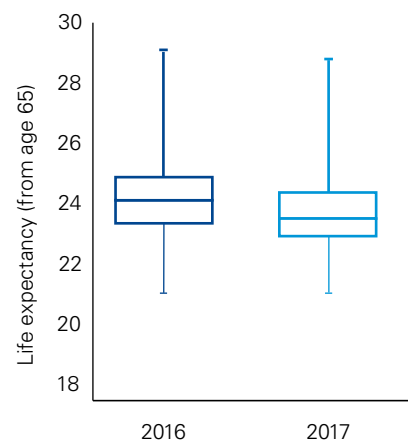
A current pensioner aged 65 is expected to survive a further 22.1 years on average, whereas a future pensioner currently aged 45 would be expected to live a further 23.5 years from the age of 65.

**Distribution of current pensioner life expectancies**



Source: KPMG analysis

**Distribution of future pensioner life expectancies**



Source: KPMG analysis



Median life expectancies for current pensioners have continued to fall for the third year in a row.



Median life expectancies for future pensioners have fallen again this year, reflecting a decrease in the expected rates of future improvements in mortality.



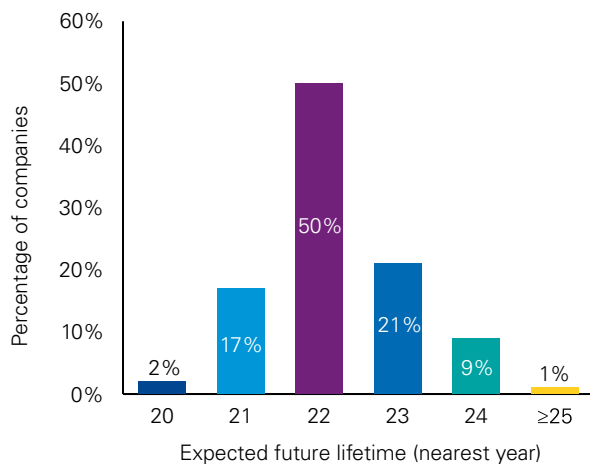


Around 80% of companies are using life expectancies within a 3 year range.

Over the past few years we have seen the median life expectancy for current pensioners and future pensioner decrease. This trend has continued in 2017 and is largely due to 77% of companies adopting the latest CMI 2016 series of projections published at the time, which reflect a decrease in the expected rates of future improvements in mortality.

### Current pensioner life expectancy

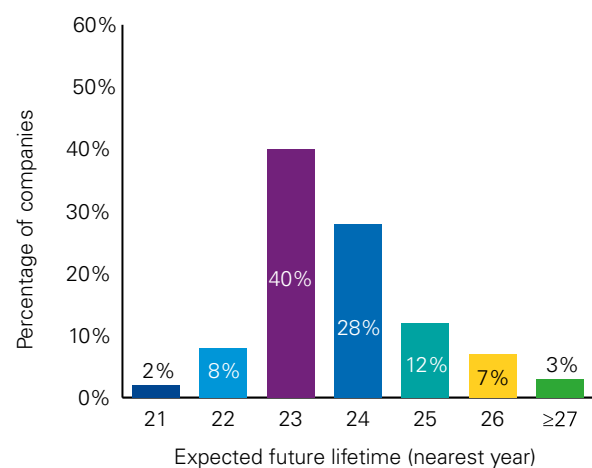
(male currently aged 65)



Source: KPMG analysis

### Future pensioner life expectancy

(male currently aged 45 retiring at age 65)



Source: KPMG analysis

# Mortality (continued)

## Base tables

The vast majority of companies have adopted the SAPS tables (96% at 31 December 2017). These mortality tables are based on actual pension scheme experience rather than life insurance tables such as PA92 and PA00.

Nearly all of these companies have adopted the S2 series published in February 2014. 92% adopted S2 at 31 December 2017 compared to 70% last year.

It is becoming increasingly common for schemes to apply scheme-specific loading factors to the mortality base tables. Around 60% of the companies adopted a scheme-specific scaling factor, compared to 50% last year.

With mortality being a key assumption, mortality studies including postcode analysis and medically underwritten studies can help schemes to more accurately allow for the longevity risk in their population.

## Future improvements

The median gap between current pensioner and future pensioner life expectancies has fallen from 1.7 years to 1.4 years for a 20 year projection.

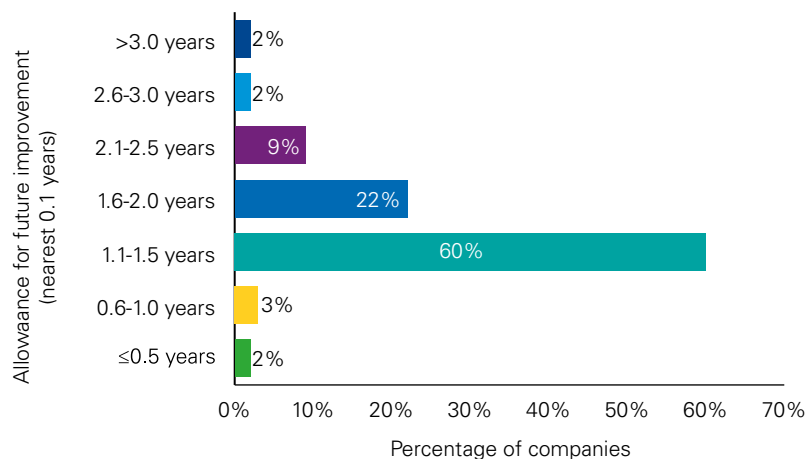
All of companies surveyed adopted projections published by the Continuous Mortality Investigation Bureau (CMIB) for future improvements.

The CMIB is continually updating its research and produces annual updates of the CMI projection model. Companies are tending to use the most recent projections available. 77% of companies are using the CMI 2016 model year for their 31 December 2017 accounting results.

Moving from the CMI 2015 to the CMI 2016 model would have reduced liabilities by around 2%, with a slightly greater impact for schemes with a younger membership.

The CMI 2017 projection model has recently been released, and we expect many companies to be using this model by December 2018. Moving from the 2016 model to the 2017 model is likely to result in a reduction in liabilities of around 0.6%, again with a slightly greater impact for schemes with a younger membership.

## Distribution of future improvement allowances



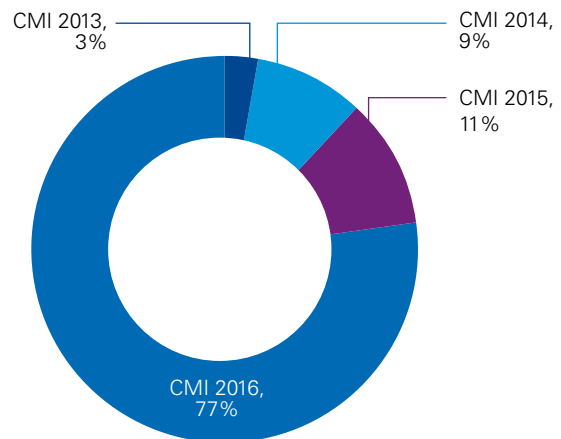
Source: KPMG analysis





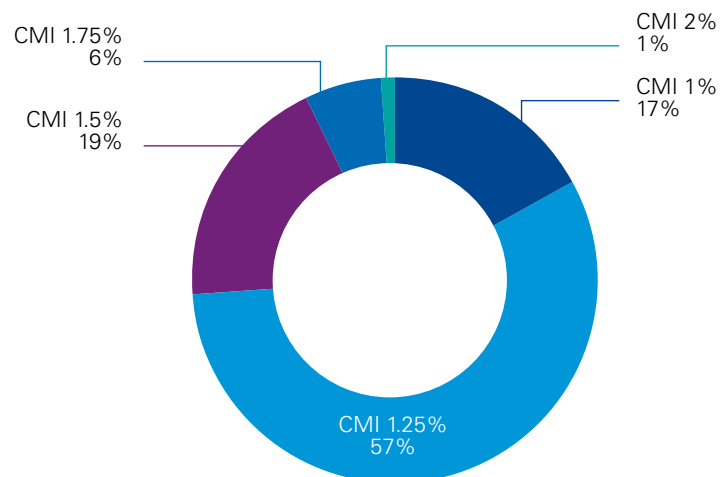
57% of schemes used the median long term future improvement of 1.25%, with the range from 1.00% to 2.00%.

### Distribution of CMI projection models



Source: KPMG analysis

### Distribution of long term future improvements



Source: KPMG analysis

# Mortality (continued)

## Smoothing parameter

A new period smoothing parameter was introduced with the publication of CMI 2016. For the first time, this enabled companies to vary how much weight is placed on the most recent observed data on mortality improvements. In recent years, population data has shown the rate of mortality improvements slowing down.

The default smoothing parameter of 7.5 is intended to be in line with the weightings used in the previous CMI models. A lower parameter than 7.5 smooths the most recent improvements to a lesser extent, and therefore makes the model more reactive to recent data. There could be an argument that for setting best-estimate accounting assumptions, it is appropriate to use a lower smoothing parameter to take more account of the most recent data. This would mean lower life expectancies and lower liabilities.

In our data sample, 97% of companies have adopted the default smoothing parameter. In future years, we may see more companies varying the smoothing parameter.

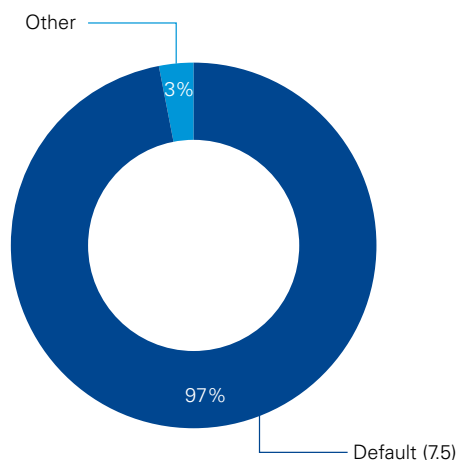
Moving from the default smoothing parameter of 7.5 to 7.0 would reduce liabilities by around 1.4% with CMI 2016, and 1.2% with CMI 2017.

On the other hand moving to a smoothing parameter of 8.0 would increase liabilities by around 1.2% with CMI 2016 and 1.3% with CMI 2017.



The new period smoothing parameter will allow companies to vary to how much weight is placed on more recently observed data.

### Smoothing parameters



Source: KPMG analysis







# Contact us



## London

### **Naz Peralta**

+44 (0)207 311 2403  
narayan.peralta@kpmg.co.uk



## Midlands

### **Alan Pentland**

+44 (0)121 609 6002  
alan.pentland@kpmg.co.uk



## North East

### **Ian Warman**

+44 (0)113 231 3408  
ian.warman@kpmg.co.uk



## South

### **Ray Pygott**

+44 (0)118 373 1369  
ray.pygott@kpmg.co.uk



## North West

### **Richard Hennessy**

+44 (0)161 246 4657  
richard.hennessy@kpmg.co.uk



## Scotland

### **Donald Fleming**

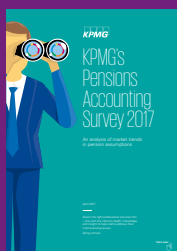
+44 (0)141 300 5784  
donald.fleming@kpmg.co.uk


**Author** Siduth Wijeweera

**Editors** Marlani Pather, Katy Edwards

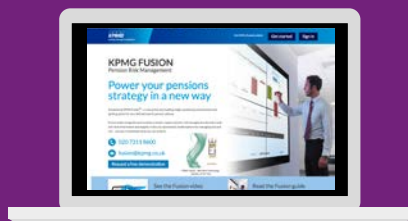
**Data Analysis** Priyal Patel, Paige Stacey

## Last year's survey



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