The Actuarial Profession
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Consultation response from the Institute and Faculty of Actuaries

Pensions Protection Fund

Guidance for bespoke investment risk calculation

June 2011

About the Institute and Faculty of Actuaries

The Institute and Faculty of Actuaries is the chartered professional body for actuaries in the United Kingdom. A rigorous examination system is supported by a programme of continuous professional development and a professional code of conduct supports high standards, reflecting the significant role of the Profession in society.

Actuaries' training is founded on mathematical and statistical techniques used in insurance, pension fund management and investment and then builds the management skills associated with the application of these techniques. The training includes the derivation and application of 'mortality tables' used to assess probabilities of death or survival. It also includes the financial mathematics of interest and risk associated with different investment vehicles – from simple deposits through to complex stock market derivatives.

Actuaries provide commercial, financial and prudential advice on the management of a business' assets and liabilities, especially where long term management and planning are critical to the success of any business venture. A majority of actuaries work for insurance companies or pension funds – either as their direct employees or in firms which undertake work on a consultancy basis – but they also advise individuals and offer comment on social and public interest issues. Members of the profession have a statutory role in the supervision of pension funds and life insurance companies as well as a statutory role to provide actuarial opinions for managing agents at Lloyd's.

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Catherine Mo
Levy Policy Manager
Pension Protection Fund
Knollys House
17 Addiscombe Road
Croydon
CR0 6SR

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Dear Catherine

Pension Protection Fund Consultation:
Guidance for the Bespoke Investment Risk Calculation

I am writing on behalf of the Actuarial Profession in response to the above consultation document issued by the PPF in May 2011.

Our comments on the detailed questions set out in the consultation are shown below.

A. Is the guidance clear and accessible for the intended audience of trustees, scheme representatives and investment advisors?

Overall we believe the guidance is clear, subject to the following:

- Para 2.4 states that parts 1-3 of the guidance are aimed at all stakeholders, whilst parts 4-10 are primarily aimed at investment professionals. However, para 3.2 then states that the guidance in parts 5-10 is "to help schemes carry out the calculations themselves".

- Although it is ultimately for schemes to submit the results of a bespoke calculation, we believe there is a wider question as to whether, in addition to giving schemes guidance on how to undertake these calculations, the PPF should require any such calculations to be signed off by a suitable investment professional.

- Para 2.9 advises schemes that the bespoke approach is unlikely to provide for a reduced levy unless risk-reducing derivative strategies are in place. However, para 4.2 then implies that the bespoke calculation (with the refined set of asset stresses) will be of interest to any scheme for which the wider set of stresses provides a closer match to the actual investment benchmark. For example, a scheme holding a long gilt portfolio or maturity date (LDI) funds would benefit from the bespoke approach (as implied in para 4.2), although this appears at odds with para 2.9 which refers solely to derivative strategies.

- This also raises a general point about the list of bespoke asset categories being different from the standard calculation via Exchange – we believe that, in general, this will encourage schemes without derivative strategies to investigate whether the bespoke calculation will make a difference to their levy costs. Whilst we agree that the bespoke calculation requires a more detailed asset breakdown than

currently available from Exchange, could the future data collection via Exchange be expanded for all schemes with a view to moving the "standard" calculation closer to the current bespoke approach?

In addition, we think that it would be helpful for the guidance to explain:

- How often the bespoke stress calculation will be required.
- By when each calculation must be submitted.
- What is meant by the latest available audited scheme accounts date – latest available by the date the stress calculation is carried out, by when it is submitted, or by the deadline for submission?
- The implications of the above (depending on which applies) for the issue of audited accounts the day before the deadline for submission of the stress calculation and/or the issue of audited accounts after the stress calculation has been carried out but before the deadline for submission.

B. Is there sufficient information on the definitions and formulae associated with the bespoke approach in the guidance?

We believe that there are potential issues around PV01 and IE01 calculations, in particular when seeking these numbers from third parties (eg asset managers or investment banks), given that there are a number of conventions needed to calculate them. Firstly, there is a sign question: schemes and consultants tend to speak of positive interest rate and inflation sensitivity, e.g. £1.2m PV01, when this is the change in value for a 1 basis point fall in interest rates for a typical LDI swap portfolio (that receives fixed). In contrast the draft guidance and market convention would calculate the sensitivity to a 1 basis point rise in interest rates (although the guidance refers simply to a change in interest rates at some points). This negative number is then multiplied by a negative move in rates in the guidance to produce a positive stress number. We don't dispute the correctness of the PPF convention, but just wish to point out that there is room for error due to lack of precision.

A more subtle, and fortunately usually more minor question, arises from how PV01 is calculated: is it the par curve or the spot curve that is shifted by 1 basis point? Market convention is more mixed here - par would have been overwhelmingly common 10 years ago but spot is increasingly used now. Page 25 mentions that it is the spot curve that is intended to be bumped – however this may not be what asset managers provide in their normal reporting packages. The difference is a function of the yield curve shape - at the end of 2010 at some tenors you could get 10% differences in PV01 by choosing par rather than spot.

We have some comments and queries on the derivative stress tests. Equity options seem to be intrinsic value only, while swaptions look like they might be based on intrinsic and actual value (rather than intrinsic and time, which would add up to actual value). Looking at each separately:

- Reflecting only changes in the intrinsic value of equity options ignores genuine attempts to reduce equity risk in portfolios via collar strategies. If a scheme enters a 10 year collar strategy where there is a floor purchased (put option) and a ceiling put on returns (sold call), within certain equity ranges the intrinsic value test on equities plus the collar will have a 1 for 1 impact on the value of the portfolio (i.e. a 20% stress test will reduce this by 20%). However, in the early years of the collar, the two option values would move to offset the movement in equity value (both up and down) even if the movement did not breach the strike prices– i.e. there would be a lot less than a 1 for 1 move in the overall value of equities plus collar. This is one of the reasons for introducing such approaches. It seems to us that since this will require bespoke calculation anyway, the options could be properly valued under stress with specification of a few variables, e.g. fix implied volatility at a specific level.

- For swaptions there is an implication that there should be a similar intrinsic value assessment as above, although the example given only uses a value based stress with no intrinsic value. It would be good to get clarity on this. Secondly, if a PV01 approach is being used – is this the PV01 of the swap underlying the contract or the option itself? We assume the latter, which then covers the sensitivity of the entire swaption value. This has two implications – first it means that also including an intrinsic value stress would be partly double counting, and secondly it is not consistent with the approach to equity derivatives.

C. Does the Exchange help file provide sufficient clarity on how to allocate scheme assets?

Yes, our only query being the description of "insurance funds" as including deposit administration contracts and with profit funds which are then stressed by -22%. Would this be appropriate for, say, a with-profits deferred annuity contract?

D. Are there any asset classes or derivative strategies in which schemes are currently invested which you think should be considered separately that are not identified in the guidance and help file?

We might have expected to see separate stresses for overseas fixed interest government bonds or overseas inflation-linked bonds. Contrasting this with the equity stresses, the implication is that non-sterling exposures are risk-reducing for equities but not for bonds.

Should consideration be given to a separate stress test for infrastructure?

We note that the classes "insurance funds" and "unquoted / private equity" from the standard Exchange breakdown do not appear in Table 1 for the bespoke calculation.

In the case of assets that do not match the breakdown, the "other" category exists in both the standard and bespoke breakdowns – would special purpose vehicles be reported in this category? If so, a consideration might be to extend the guidance on special purpose vehicles (ie permitting a non-standard stress) to apply to any "other" asset that cannot be allocated to the main categories.

E. Does the guidance contain an appropriate balance of prescription and flexibility so that there are minimal opportunities for the bespoke calculation to produce different results for a given portfolio?

In our view, yes (subject to the comments made in response to the previous questions above). The one caveat to this would be if the given portfolio contained a special purpose vehicle.

F1. Do you agree with the two-stage approach we have outlined?

Yes, we are of the view that the two-stage approach is clear and consistent with the standard approach via Exchange, with the effect of risk-reduction strategies then being clearly brought in to the equation as a separate step.

F2. What are the advantages or disadvantages if the alternative approach were available as an option?

An advantage of the alternative approach would be a theoretically "more correct" stress calculation on the portfolio. However, the main disadvantage would be additional work (and hence cost). Schemes would effectively do two calculations to see what the "best" result was if the alternative approach were optional.

G. We expect that most LDI strategies will use derivatives and that applying the risk factor stresses offers the most appropriate way to recognize these. Do you agree with this treatment of LDI?

Yes, we agree with this treatment of LDI.

H. We expect that schemes with swaptions should approach investment advisers to do this calculation. Do you agree that this is appropriate, given the complexity of the stress calculation for swaptions?

Yes, we agree that this seems appropriate.

I1. What costs are associated with completing a bespoke calculation, either in general, or with reference to particular schemes or strategies?

This will depend on the complexity of individual scheme arrangements but we would not expect adviser fees to exceed say £10,000.

I2. What advisory costs might be associated with assessing whether the bespoke approach should be undertaken, or optional?

For schemes with derivative strategies the position should be clear; for others the costs of an assessment might be up to say £5,000.

I3. Is the information that is required (eg PV01, IE01) widely available, either in-house or from investment managers?

Yes, we agree that the information is readily available (but see our comments under question B above).

We hope that the above will be helpful but if you have any questions, or would like to discuss any of our responses further, then please do not hesitate to contact me.

Yours sincerely

Martin Lowes
Chairman, Consultations Group,
Pensions Practice Executive Committee