The Trustee toolkit downloadable

Investment in a DB scheme

Scenario two

In this scenario you will meet with the other members of the investment sub-committee and Lesley to look at various scenarios for the scheme's investment strategy.

As you work through this scenario you will be tested on your knowledge at decision points. Here you will have the option to work through a related technical tutorial before returning to the scenario or you can skip the tutorial. You can always work through the tutorial separately later if you would prefer. This scenario includes two tutorials:

▶ Future projections and scenario analysis

▶ Stochastic modelling

The Pensions Regulator

The investment sub-committee meets

After the last meeting, the trustees asked Lesley, the investment consultant, to attend the next meeting of the sub-committee to look at the current investment strategy in light of the trustees' concerns.

John says: "Lesley will be joining us in about an hour, but before then I thought it might be useful for Brian to take us through what we're going to be looking at today."

Brian says: "Thank you John. As I understand it you asked Lesley to create some scenarios based on your scheme's current investment strategy. This is split between growth and matching assets, which I think you covered in your last board meeting. The split is 40% growth assets with a mix of global equities and property and 60% matching assets. This covers a range of sterling bonds including investment grade corporate bonds and index-linked gilts.

Lesley will be presenting a range of scenarios including falls and rises in interest rate and inflation, plus changes to market conditions such as a sharp fall in equities. This will help you to understand the risks in the current strategy."

Lesley's presentation

Lesley joins the meeting and talks the trustees through the scenario output. Lesley says: "Thank you for inviting me, nice to see you all again. I sent a report to you to read before the meeting which is made of two parts: scenarios based on various market conditions and then projection models of what could happen to the scheme in these situations. I met with Robert, your scheme actuary, before producing these so we both have a good understanding of your funding strategy, employer covenant strength and investment strategy."

John says: "I think it might be useful, Lesley, to explain what a scenario analysis is."

Lesley says: "Well as you know, interest rate duration and inflation duration can tell you what might happen to the scheme's finances if there was a change to market conditions overnight. A scenario analysis allows us to look at a combination of variables such as: what if interest rates fell by 0.5%, whilst inflation rose by 0.5% and your equity holding fell by 10%? We can then calculate what would happen to your asset and liability values to see how much risk you are carrying in the scheme in this scenario."

Decision point: Scenario analysis

The trustees continue talking about different kinds of scenario analysis. Take a look at the definitions below. Match the definition to the correct category.

Definitions: Economic conditions, projection model, stress test

1. Market variables are chosen to have a realistic combination based on boom, bust, recovery or recession

2. Scenarios based on adverse movements of individual variables based on the likelihood of it happening

3. The scheme's assets and liabilities are calculated separately each year to include incoming and outgoing monies and changes in market conditions. These are 'rolled forward' to build up a detailed picture of the scheme's finances over time

Answers at the back

? Need help with this question? Read the Tutorial 'Future projections and scenario analysis'

Output from the analysis

Lesley has presented the scenario analysis to the trustees and they are discussing the results.

Charlotte says: "So Lesley has shown us some stress tests based on our existing investment strategy and projected these forward with the help of Robert. I must say I'm very concerned about the 'equity market fall' scenario and projection as this shows that our deficit would be considerably higher in that situation, and quite soon too. We would need to look at increasing contributions from the employer for the recovery plan now in that situation, which we already know the employer covenant can't support at this point. Although we know it's strengthening, I think it's risky that we are reliant on strong equity market growth to cover any problems there."

John replies: "We also know that interest rates have fallen 0.25% in the past couple of months which will cause us some pain and the markets are predicting they are likely to fall again as it showed in the forward look report from Lesley. I see in the interest rate fall scenario that we are carrying a large amount of interest rate risk as our liabilities have a much longer duration than our assets, which I'm uncomfortable with."

George asks: "So do we need to ask Lesley to start looking at some alternative strategies?"

Brian comments: "Yes, that would be a good idea. We can ask Lesley to produce some stochastic models on alternative strategies."

John says: "Stochastic models? Sounds complicated, what will they do that the scenario analysis can't?"

Decision point: Stochastic models

From the statements below, which three are correct of stochastic models?

Stochastic models plot historical market data to which the trustees can input their current investment strategy to see how it would have performed.

Instead of one economic scenario, a stochastic model creates a range of random scenarios based on assumptions and projects the scheme's finances thousands of times to creates a database of results for analysis.

The output from a stochastic model can be presented as a sorted list of outcomes called percentiles. This can tell what percentage chance there is of certain outcomes.

Value at Risk analysis is a type of statistics calculated from the stochastic model output that can tell trustees 'how much worse than expected could the outcome be'

If an outcome is 5th percentile it is in the top five most likely outcomes for the scheme

Answers at the back

? Need help with this question? Read the Tutorial 'Stochastic modelling'

The sub-committee's next steps

The trustees discuss whether to go ahead with Brian's recommendation.

John says: "I believe we are all agreed that we need to look at alternative investment strategies for the scheme to try to reduce the risk we are carrying whilst still giving us the opportunity for growth."

Charlotte replies: "Stochastic modelling does sound like a good way forward, especially as the scheme is carrying some fairly big risks relative to the employer's ability to support them right now."

Brian says: "There is going to be a cost involved in getting this done, so you will need to look at that and get the board's agreement first."

John answers: "Yes, good point Brian. George, can you find out the costs and together we'll put a report together for the full board to discuss and decide whether to go ahead?"

Rounding up

George finds out the costs and the sub-committee prepares a report for the board showing the results of the scenario analysis, the risks they have discovered and recommending that they engage Lesley to create stochastic models on different investment strategies, with a recommendation for any changes to the current strategy.

Now that you have completed this scenario we would recommend that you begin to work through the 'Check your scheme' worksheet for this module.

Answers

Decision point: Scenario analysis

The answers are: 1. Economic conditions, 2. Stress test and 3. Projection model.

Market variables chosen to have a realistic combination based on environments such as boom, bust, recovery or recession scenarios is a scenario based on economic conditions.

Scenarios based on adverse movements of individual variables based on the likelihood of it happening are called stress tests.

Finally, projection models calculate the scheme's assets and liabilities separately each year to include incoming and outgoing monies and changes in market conditions. These are 'rolled forward' to build up a detailed picture of the scheme's finances over time.

Decision point: Stochastic models

The correct statements are the second, third and fourth.

Stochastic models allow for the randomness of future market conditions based upon assumptions for key variables. This produces a range of outcomes for the scheme and their likelihood of occurring, not how the scheme would have performed using historical data.

Outcomes at 5th percentile mean that the result given happens in the best 5% of the model outcomes rather than being one of the top five of the most likely outcomes.