The UK Structured Products Association ('UKSPA')

Stress Testing Best Practice for Member Firms: December 2015

Best Practice documents published by UKSPA are not mandatory for Member Firms to follow, but rather are intended to act as practical working examples.

Member Firms may wish to adapt their existing product governance procedures, either in full or in part, based on these Best Practices, in the interests of consistency across the market.

The Stress Testing Best Practices will be reviewed by UKSPA on a semi-annual basis.

Contents

Contents 2
Background 3
Benchmarks 5
Value for Money ('VfM') Testing 7
Stress Testing 8

Background

The FCA's Structured Products Thematic Review (TR15/2) states their expectations for Product Stress testing and modelling thus;

Firms should adequately stress-test products to identify how they are likely to perform in a range of market conditions, and how the customer could be affected. For structured products we have made clear that:

• stress-tests should be forward-looking as well as backward-looking, given the limited value of 'past performance' in replicating potential future returns

• stress tests should analyse the resilience of the product over its proposed term, in particular so that the product's risk profile may be properly assessed

• where there is a value for money test versus an alternative, such as a comparison with the returns from cash products, there should be a sufficiently demanding hurdle rate (or 'threshold') to reflect the opportunity cost of the 'next best' use of the customer's money, and

• The stress-testing and modelling exercises should be considered by the firm as part of its new product approval process both for the initial and any subsequent tranches

In addition, for quantitative modelling we have made clear that firms should undertake simulations to understand expected profitability from the investor's point of view. In particular, they should consider what a reasonable comparison is for the next best use of the investors' money. Any assumptions made must be reasonable, based on publicly available data, and should not result in a misleadingly favourable impression of potential returns. Firms should also establish thresholds on the probability of stressed outcomes that are likely to be acceptable for the intended target market.

Furthermore the FCA stated with respect to information to distributors;

Manufacturers should ensure that the information provided to distributors is sufficient, appropriate and comprehensible in form and substance, including consideration of whether it would enable distributors to understand it sufficiently to provide suitable advice (where advised sales are envisaged) and to extract any relevant information and communicate it to the end customer... Manufacturer firms are therefore reliant on their distributors ensuring the information provided to the end customer is accurate and provided in a manner likely to be understood by the target market, including the information arising from the manufacturer firm's product analysis (for example, the output from their stress-testing and modelling).

Following further discussions with the FCA and input from the working group, this document contains the Best Practice agreed upon by Member Firms.

Please note that the contents of this Best Practice document currently cover products that are linked to the performance of *equity* indices and shares only.

Benchmarks ("*the next best use of the investors' money*") for use in Value for Money Test

Each product should be reviewed individually and an appropriate benchmark determined. The below are guidelines for vanilla equity linked structured products

Benchmarks for <u>capital protected</u> products with an investment term of 6m+ .

Fixed Rate Bonds ('FRBs') available from UK high street banks are the most appropriate benchmark to be used for 100% capital protected products, both notes and deposits.

UKSPA will make available to Member Firms a monthly online report of currently available FRBs, by varying maturities, which would also include the Bank of England published 2-year rate.

Member Firms are advised to select one of the following from that report to be used as the benchmark for a capital protected product:

- The FRB included in the report that is the closest match (in terms of CDS, credit rating and/or closest term) to the product they are looking to benchmark; or
- Or alternatively the average of all or an appropriate sub-set of the FRBs included in the report.

- Where using a Fixed Rate bond is not appropriate (i.e. there are no appropriate next best alternative), a proxy for the FRB, using appropriate Swap Rates from the Bloomberg Page IRSB and appropriate CDS levels from the Bloomberg Page CDSW, should be used

Note: For products that have the possibility to mature early (e.g. Autocalls)**,** the full maturity of the product should be used rather than expected duration

Benchmark for capital at risk products with an investment term of 6m+.

For capital at risk products, where there is an element of capital protection (for example Put-Spreads/Down-&-In-Puts) Member Firms are advised to consider the same FRB benchmark as they would for a capital protected product, adjusted by a *risk premium* designed to reflect the additional risk of capital loss.

The risk premium should reflect the average expected loss of the product on an annualised basis across the three market scenarios as found in UKSPA Stress Testing best practices:

Benchmark = FRB + (Average (min(0(Expected Loss)), annualised)

Where*:*

Average *(Expected Loss, annualised) = the average of the expected annualised losses (i.e., loss * probability) generated across the Bull, Neutral and Bear Stress Tests, with all positive return is set to zero.*

Benchmark for delta-1 products.

For products with little or no protection features whatsoever (i.e. where investors are fully exposed to the negative performance of the underlying asset), FRBs (with or without a risk premium) are not necessarily an appropriate benchmark. We recommend that Member Firms consider an alternative benchmark on a case by case basis that has a closer payoff profile to the product in question (such as an ETF).

Value for Money ('VfM') Testing

Each product should be reviewed individually and an VfM test determined. The below are guidelines for vanilla equity linked structured products

A product could be deemed to have passed a product manufacturers internal VfM test if

a) The annualised IRR returns of the product exceed the relevant benchmark rate, using back-testing scenario, in more than 50% of scenarios.

And

b) The annualised IRR returns of the product, exceed the relevant benchmark rate, in more than 50% of the sample paths obtained, in at least one of the three forward looking scenarios simulations Bull/Neutral/Bear.

   The results of this information may be appropriate within a financial promotion (for example: "This product is designed for investors with a positive or neutral view on the underlyer")

There may be times where it may be appropriate to launch a product despite failing the above. For example, where specific market research support a product despite failing a VfM back-test. It such circumstances it is recommended this should be documented accordingly for transparency with distributors

Stress Testing

Each product should be reviewed individually with respect to stress testing. The below are guidelines for vanilla equity linked structured products with medium term fixed maturities

Firms should adequately stress-test products to identify how they are likely to perform in a range of market conditions, and how the customer could be affected.

Stress testing results can be used to;

a) Aid product manufacturers internal product governance approvals
b) Help distributors determine suitability and appropriateness of a product for an investor's specific needs.
c) Determine the Risk Premium to be applied to the Benchmark for capital-at-risk products.
d) Determine the 'worst case' average loss of a product to help match against Target Market needs based research

The following standardisation of inputs is designed to provide similar stress testing results to distributors for similar products, with the aim of making comparisons between different products easier. If a Member believes a product requires the use of different stress testing inputs as may be the case from time to time, it is recommended that these changes are highlighted in any distributor communications

<u>Stress testing parameter inputs:</u>

- **Volatility**: Average Realised volatility between 5 years and 1 year.

  This measure is publically available and easily observable and should account for both short and medium term variability. 110% of the volatility level should be used in the Bear scenario, 100% for Neutral scenario, and 90% of the volatility level in the Bull scenario, to reflect typical behaviour of volatility

  It should be noted that for products with certain Shorter or Longer dated maturities an alternative period may be considered

- **Interest Rate**: MID rates curve available on Bloomberg function 'IRSB'.

  This page gives access to all the main swap rates across a range of currencies. For terms not listed on the IRSB page, a linear interpolation between the two closest points should be applied.

- **Correlation**: 1-year historical correlation (calculated on the log returns, using 3 days returns).

  This value is a reliable proxy for Monte Carlo simulations.

- **Dividends**: We suggest the use of a 'Full Yield' model for forward simulations, based on average the average historical data between 5 years and 1 year.

  To extract the historical dividend yield for an underlying (index or stocks), we suggest using the Bloomberg Excel function 'TOT_RETURN_INDEX_GROSS_DVDS' compared to the price return of an index. This will need to be manual for proprietary indices.

  It should be noted that for products with certain Shorter or Longer dated maturities an alternative period may be considered

- **Repo Rate**: 0%, so as not to include any bias.

  The repo reflects the cost of buying the stocks and therefore will be negative in most cases. Since most products are overall long equity, setting a repo rate at 0% will provide us with more conservative simulations in the majority of occasions.

Stress testing scenarios:

Using these inputs, Member Firms should produce a Bear, Neutral and Bull stress test, according to three different impacts on the trend of the underlying.

Bull: Trend = Rates + (*Underlying Growth*)
Neutral: Trend = Rates
Bear: Trend = Rates – (*Underlying Growth*)

Where *Underlying Growth* for Total Return products = (EQPR)

Where Underlying Growth for Price Return products = (EQPR – Dividends)

Where EQRP represents any expected growth + income received from the underlying above the risk-free rate

Simulations should be run as of close of business with a frequency of 50,000.

For indices, EQRP should be calculated using CRP of the country where the index is the same (e.g. CRP GB for FTSE100) or the underlying weighted basket of equities

Investor Expected loss in very poor market scenarios:

To address FCA concerns that investors may have a 'worst case loss' view that needs to be accounted for in target market needs based analysis, it is recommended as part of the needs based target market analysis to compare investors expectations of losses "if their investment performed very poorly" to expected product performance.

To facilitate this comparison, stress tests are recommended to calculate the average annual loss on capital invested across each of the three performance scenarios for the worst 5% of trajectories.