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Unit Linked Funds: Unit Creation and Investment Processes

Unit-Linked Funds

George McCutcheon MSc FIA discusses unit creation and investment processes in unit-linked funds.

Background

Life companies need to place greater focus on ensuring consistency in the timelines of the unit creation and investment processes in unit-linked funds. The critical importance of this issue has been reinforced by the Financial Conduct Authority's currently in-progress thematic review of the management and governance of unit-linked funds. Some life companies may need to change their business processes to ensure that the FCA requirements are met.

The FCA thematic review of the management and governance of unit-linked funds is assessing whether:

a. Firms have adequate systems and controls in place to ensure that funds are administered and managed fairly and in accordance with customer expectations;
b. Assets backing unit-linked policies are appropriate for policyholders; and
c. Policyholder benefits are calculated fairly and accurately.

The FRS research report, titled "UK Unit Linked Funds Thematic Review", suggested that the FCA as part of its conclusions might place special focus on the issue "Are there weaknesses in the liability unit allocation, asset unit creation and investment processes used by some life companies and in particular in the context of the operation of mirror funds?"

One of the key requirements for equity in unit pricing is that the unit prices of unit-linked funds shouldn't be impacted by policyholder cash-flows. This is a necessary condition to meet the requirements that funds are being administered and managed fairly and that policyholder benefits are being calculated fairly and accurately. This equity in unit pricing requirement can't be routinely and consistently met unless there is consistency in both the timelines and amounts of the unit creation and investment processes.

Thematic Review Background

Of the three key risks being assessed in the FCA thematic review of unit-linked funds, two have specific relevance for the unit allocation and investment processes viz

- Whether funds are administered and managed fairly in accordance with customer expectations.
- Whether policyholder benefits are being calculated fairly and accurately.

The FCA thematic review includes an analysis of the unit allocation and investment processes including timelines for:

- Customer instructions received
- Customer monies received
- Customer units allocated on policy administration system (call these "liability units")
- Units created on the fund administration system (call these "asset units")
- Cash position advised to fund manager
- Cash passed to fund
- Cash invested in underlying assets (call this the "asset purchase process")

Whilst the thematic review analysis is in respect of all types of unit funds, it has specific resonance for mirror funds.

A review of these timelines might indicate that some life companies do not operate on a forward pricing basis. It is also likely that the review will identify a mismatch between the timelines of the liability unit allocation, the asset unit creation and the asset purchase process. It will be interesting to see how the FCA will view this issue and how it seeks to ensure that there are no detrimental effects to policyholders arising from timeline mismatches in these processes. This might be particularly relevant in the context of the operation of mirror funds. The FCA and customer expectation would be that the tracking error should be close to zero for gross of tax mirror funds (unless there are valid reasons to

expect otherwise which are explained in the marketing literature, e.g. the fund holds 5% of its assets in cash for liquidity purposes) and that the business processes used for the asset unit creation and the asset purchase processes should not result in non-zero tracking errors which would cause distorted investment returns for policyholders.

Unit Creation and Investment Processes in Unit-Linked Funds

In the context of the thematic review, fair calculation of policyholder benefits would mean not just fairness in the unit pricing process but also fairness in the various other processes that determine policyholder values such as asset unit creation and the asset purchase process.

Fairness would require that the unit prices of unit-linked funds shouldn't be materially impacted by policyholder cash-flows (which lead to asset unit creation and the asset purchase process). In the historic era where unit linked business for life companies consisted of offering a small number of funds (mainly managed funds) and daily policyholder cash-flows were small relative to the size of the unit linked funds, the issue of consistency in timelines between unit creation and the asset purchase process wasn't considered overly important. However times have changed and in the era of specialist funds and mirror funds, it is no longer unusual that daily policyholder cash-flows can be material in the context of the unit fund size. Of course this can result in the need to adjust the unit pricing basis but significantly there is also the issue of the critical importance of consistency in the timelines and amounts of unit creation and asset purchases if equity in unit pricing is to be maintained.

Such consistency requires firstly that the unit creation process operates on a forward pricing basis i.e. the unit creation cash-flows are specified in advance of the valuation point of the unit pricing underlying the unit creation process and those cash-flows are then notified to the fund managers ahead of that valuation point and the unit creation process subsequently takes place based on those unit prices and those unit creation cash-flows. Secondly it requires that asset purchases take place at the valuation point for those unit creation cash-flows.

If instead the life company operated on the basis that the unit price is determined say at a close of business valuation point and then an over-night batch process takes place on the policy processing systems to determine the number of liability units and the liability unit cash-flows and then those same figures are used as the number of asset units and the unit creation cash-flows (and notified to the fund managers) at some point on the following day, then that would constitute backward pricing and would impact on the unit prices of the existing policyholders. The reason being that it would not be possible to match the unit creation cash-flows with corresponding asset purchase transactions at the same asset prices as used in the calculation of the unit prices.

As a separate point in general there would be unplanned gains/losses from its unit-linked business for the life company unless customers are allocated units based on the unit prices that are used for the creation of the equivalent number of asset units in the internal funds. If the life company is operating the unit creation process on a forward transaction basis then such unplanned gains/losses will arise unless the life company can accurately determine the liability unit cash-flows prior to the valuation point. In contrast, if the unit creation process doesn't operate on a forward transaction basis, the continuing unit-holders in the unit fund will bear the gain/loss where the cash-flow into the fund to create a number of asset units equal to the number of liability units allocated to the policyholder, is equal to that number of asset units multiplied by the liability unit price at which the liability units were allocated to the policyholder.

In both of the above scenarios it is essential that the size of the gain/loss is determined and monitored on a daily basis. Where the life company is bearing the gain/loss it will need to monitor the size of these gains/losses for risk management and financial reporting purposes.

Mirror Funds

Consider the case of a non-taxed mirror fund (e.g. where an internal linked fund is offered that invests 100% in a particular external collective investment fund). In the absence of specific provisions to the contrary in the fund marketing material, the customer expectation might reasonably be that the unit performance of the internal fund

should exactly track the unit performance of the underlying collective investment fund subject only to the differential in annual management charge between the internal fund and the external collective fund i.e. in common parlance the tracking variation/error should be zero. For a non-taxed fund, there would be transparency on the tracking error but for net funds taxation introduces some complications arising from the application of different tax rates to different parts of the investment return, the issue of the placing of value on tax losses and the gearing effect arising from the accruing of tax provisions within the fund and so the tracking error is less transparent. The likelihood is that regulators would (in the absence of explicit fund marketing material specifying that non-zero tracking variations could arise from the operational procedures of the fund) consider material non-zero tracking variations to be unit pricing errors.

Life companies marketing mirror funds seek to meet two objectives:

1. The tracking error should be zero
2. There should be no unplanned gains/losses to the life company from the business processes used to manage mirror funds

For a mirror fund, the tracking error will not be zero unless the investment in the underlying external collective fund is

- At the same valuation point; and
- For the same amounts.

as underlines the creation of the asset units in the internal fund.

Thus the mirror security price used in the internal fund valuation used for the unit creation needs to be the same as the mirror security price obtained from the asset purchase process and the exact unit creation cash-flow has to have been invested in the mirror security. This means that the unit creation process needs to operate on a forward pricing basis.

Implications for Life Companies

Life companies seek to meet two objectives in respect of their unit-linked business:

- Equity in unit pricing should be maintained; and
- There should be no gains/losses to the life company from the business processes used to manage the unit funds.

In practice, there can be conflicts between these two objectives in establishing the business processes used by life companies to manage the unit-linked funds.

The mirror fund example serves to both illustrate the more general issue of the critical importance of the consistency of the timelines for unit creation and the asset purchase process and also the mechanism needed to ensure that the equity in unit pricing requirement in respect of unit creation and the asset purchase process can be routinely and consistently met. The required mechanism is that the cash-flow from the unit creation process should be invested in the underlying assets of the unit linked fund at the same valuation point as underlines the unit price used for the unit creation process.

However, for some life companies, their policy administration systems may not be capable of determining the amounts of the policyholder cash-flows in advance of the valuation point at which they are to be processed to enable asset unit creation and the asset purchase transactions to take place at that valuation point and for the same amounts.

The timelines and constraints imposed by policy administration systems might mean that some life companies struggle to meet the perfect scenario of allocating liability units to customers, creating the asset units in the unit funds and transacting the asset purchases all at the same valuation point and all based on the same amounts. That is where difficulties might arise in respect of the two possibly conflicting objectives of the life company. Some life companies might be prioritising the objective of maintaining equity in unit pricing with the consequence of gains/losses to the life company. Other life companies might be using the approach that the gains/losses arising from

time-lags in the various business processes would be borne by the unit funds so that there are no gains/losses to the life company but equity in unit pricing issues might arise.

From a regulatory perspective, the critical requirement is that funds are administered and managed fairly and in accordance with customer expectations. Hence if a life company operates on the basis that the effects of time-lags in the various business processes are borne by the unit funds, a minimum but not sufficient requirement from a regulatory perspective would therefore seem to be that this should be fully explained in the fund marketing material so that the customer is made aware of the issues. The term 'not sufficient' is used because, notwithstanding full disclosure, policyholder cash-flows significant in relation to the fund size could result in unfair results and hence the requirement of funds being administered and managed fairly would not be met. Whilst it might be expected that the averaging of gains/losses over time may not materially impact continuing unit-holders in the fund in the long term, it is essential that any gains/losses are within a small daily tolerance which can be justified in terms of the general Treating Customers Fairly ("TCF") requirement.

Therefore daily limits would need to be set for the maximum impact on the unit price arising from time-line mismatches and procedures established for adjustment cash-flows if these limits are breached.

Hence any life company which passes these gains/losses to the unit fund should be able to demonstrate that:

a. It has disclosed this issue to policyholders;
b. There are daily limits on the extent to which this process can impact the unit price; and
c. Robust monitoring processes are in place to ensure that the daily limits aren't exceeded.

Where the effects of time-lags in the various business processes are not borne by the unit funds, there could be significant gains/losses for the life company if it has to finance the monetary adjustments required to maintain equity in unit pricing where the life company's routine business processes for unit creation and investment are not configured to minimise such gains/losses.

Solutions for Life Companies

The problems that would otherwise arise in meeting these regulatory requirements can be readily resolved if life companies implement robust business processes for asset unit creation and asset purchases configured to be consistent both as regards timeline and amounts. The critical issue from a regulatory perspective is that funds are administered and managed fairly and in accordance with customer expectations. In actuarial parlance this means that life companies must meet the equity in unit pricing requirement.

There are a number of possible approaches for life companies including:

- The use of a forecast matching approach, i.e. where an accurate forecast of the policyholder cash-flows is used for the asset unit creation (and asset purchases at the valuation point are based on these amounts) and differences between the emerging actual figures and the forecasts utilised are incorporated into the following day's forecast. Both the policy administration systems and the fund administration system needs to be capable of supporting this approach; or
- Delaying the asset unit creation and the asset purchase process for one (or more) day(s) following the customer unit allocations (i.e. until the policyholder cash-flows are known if the policy administration systems cannot produce a reliable forecast of policyholder cash-flows). With this approach, the liability unit price and asset unit price for a particular policyholder transaction would differ but the asset creation process is on a forward pricing basis.

With both approaches, the asset purchase process takes place at the same valuation point and for the same amounts as the unit creation cash-flows. Thus in the context of the timelines described in the FCA thematic review, the cash-flow is known and advised to the fund manager in advance of the valuation point (for the unit creation) and the unit creation process is based on those cash-flows. In particular if these approaches are applied for a mirror fund, the unit price of the internal fund will continue to exactly track the underlying external fund and thus existing unit-holders are

not being impacted by policyholder cash-flows. Both approaches involve running a shareholder 'box' position in each unit fund, i.e. the number of asset units in issue in the unit fund does not match the total number of liability units allocated to policyholders across all policy administration systems. Whilst most life companies are aware that they are running box positions in their unit funds their fund administration systems are generally not able to quantify on a daily basis either the size of these positions or the gain/loss to the shareholder arising from the box positions.

Whilst both the above approaches would meet the objective of equity in unit pricing, the amount of unplanned gains/losses to the life company arising from the box positions taken could be quite different by method and needs to be quantified by the life company firstly for risk management and reporting purposes and secondly for analysing sources of profits.

With the former approach, the box position arises from the differences between the forecast cash-flows and the actual cash-flows and should be quite small. With the latter approach the box position is for the full amount of the asset unit creation for the duration of the asset creation delay. The profits/losses on the box positions would be minimised by the former approach.

The Invest|Pro™ system, specifically designed for the life industry, manages both of the above approaches and also quantifies both the size of the box positions and the resultant gains/losses arising from these box positions.

Biography; George McCutcheon MSc FIA:
Mr. McCutcheon is a graduate of University College Dublin in Mathematical Science and is a Fellow of the Institute of Actuaries. He is a director and co-founder of Financial Risk Solutions (FRS), a software company specialising in the licensing of fund administration software to life assurance companies.
He has presented a number of papers at the Life Convention of the Institute of Actuaries and has co-authored a number of papers for the Society of Actuaries in Ireland, including a 2011 paper on placing value on tax losses in unit linked funds.

About Financial Risk Solutions (FRS)

Financial Risk Solutions Ltd (FRS) is a leading provider of unit pricing and fund accounting software to the Life Assurance and Pensions industries. It was founded in 1999 by actuaries and IT specialists and is one of the leading software providers in its sector. Its Invest|Pro™ product family is a recognised leading benchmark in the investment fund accounting area and customers are some of the biggest brands in Life Assurance and Third Party Administration including MetLife, SEB, IFDS Percana, and Accenture Insurance Services.

Invest Pro™ was specifically designed to securely automate the complexities in companies that perform critical fund administration functions.

FRS's product Invest|Pro™ manages unit pricing and portfolio valuations, asset/liability unit matching, box management, trade order management, investment accounting, financial reporting and compliance with investment mandates in a single application. Product types covered include unit linked funds, portfolio bonds, self-invested/directed pensions, shareholder funds and with-profit funds.

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