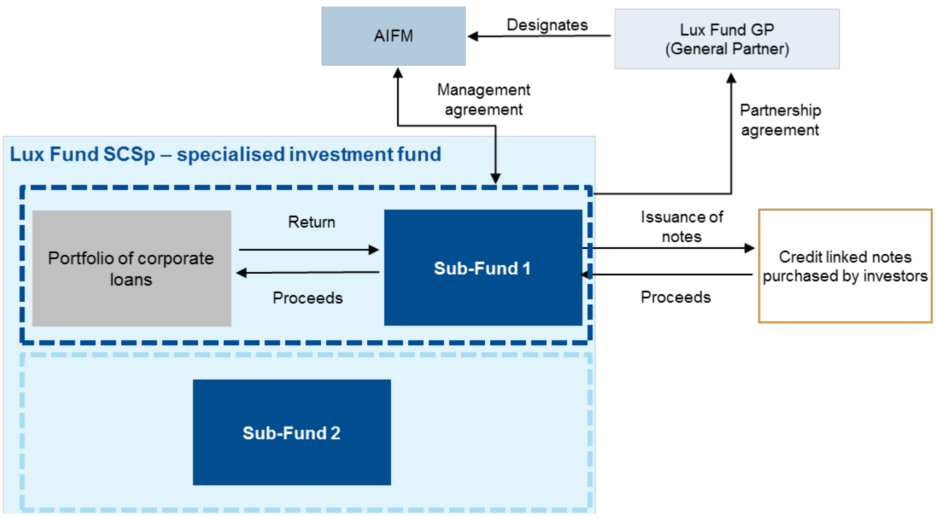
Credit-enhanced repackaged debt structures: the differences are in the detail

The credit profiles of repackaged debt fund transactions exhibit significant differences depending on the profile of their contemplated 5% credit enhancement. Credit enhancement funded up front in the form of reserves or over-collateralisation is superior, given the non-granular portfolios underlying these transactions both in terms of absolute uplift and uplift stability under different default-timing profiles.

In 'Direct lending funds risk assessment' (13 February 2020), we highlighted the increased use of rated repackaged debt to gain exposure to direct lending funds or private debt strategies. This report examines the impact of the different ways to build credit enhancement, using examples of structures seen in the market.

Fund managers use rated repackaged debt financing to attract investors such as pension funds and insurance companies. Luxembourg-domiciled entities issue most of these debt instruments in Europe, as Luxembourg offers comprehensive and flexible frameworks for securitisation and fund activities. Figure 1 illustrates the typical structure of a Luxembourg specialised investment fund issuing credit-linked notes that offer a risk-return profile that mirrors the fund's investments.

Figure 1: Specialised investment fund structure



Source: Scope Ratings

This repackaged debt is generally only attractive to institutional investors if the credit-linked notes achieve an investment-grade rating. Considering the non-investment-grade profile of private debt portfolios, the rated instruments need credit enhancement. They normally benefit from over-collateralisation (OC), either in the form of excess spread, additional refundable reserves, or a lower instrument notional compared to the fund's net asset value. Figure 2 summarises some of the mechanics in structures used in the market.

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Figure 2: Existing credit enhancement mechanics

Existing credit enhancement mechanics	Mechanics

Over-collateralisation	• Obtained when asset value exceeds remaining principal liability due
	• OC is obtained through:
	  ○ a purchase the assets at a discount
	  ○ an issuance of debt at a premium

Cash reserve account	• Can be used to fund expenses and cover portfolio losses • Usually funded at inception of the transaction
Excess spread	• Corresponds to interest payments on assets net of senior fees, expenses and interest payments due under the notes • Can be substantial as interest due is usually set well below expected asset yields • If used to pay down the notes or invest in new assets, OC is improved • If paid as a variable coupon, does not create credit enhancement • Can be used to replenish the cash reserve account

In the following case study, we compare the relative impact of the different credit enhancement mechanics using a model transaction.

Different credit enhancement scenarios

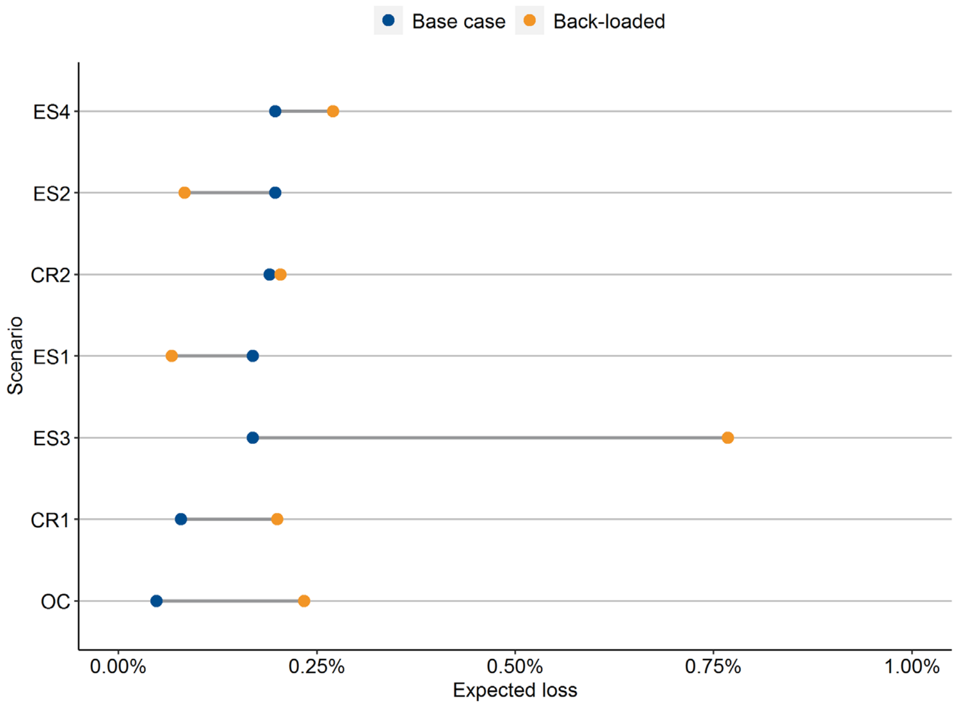
We have designed seven scenarios to assess the impact of the different credit enhancement mechanics currently existing in the market, see Figure 2. These scenarios are described in Figure 3.

Figure 3: Different scenarios

Scenario	Description
ES1	All excess spread is used to early amortise the notes
ES2	All excess spread is used to invest in new assets during the reinvestment period, amortise the notes thereafter
ES3	The excess spread used on a “use it or lose it” basis, i.e. only covering portfolio losses. Otherwise, the excess spread is paid as variable coupon to the investor and therefore not used to repay the rated promise.
ES4	The excess spread is used as in ES2 but only to the extent that the ratio portfolio NAV / Notional of notes is above 105%. Remaining excess spread is paid as variable coupon.
CR1	A cash reserve of 5% of notes’ notional is funded at inception. The reserve amount is maintained at the maximum of cumulative loss ratio and 5%.
CR2	A cash reserve of 5% of notes’ notional is funded using excess spread. The reserve amount is maintained at the maximum of cumulative loss ratio and 5%.
OC	Issued notes represent 95% of the portfolio notional (EUR 380m instead of EUR 400m in all other scenarios). Excess spread is used to cover portfolio losses.

Using the assumptions described above, we obtained the cash flows of the different scenarios in Figure 3 and computed the expected loss of the notes. To highlight the sensitivity of the different scenarios to defaults happening late in the transaction’s life, we also computed the expected loss of the notes using a higher weighted-average default timing of 3.5 years. Results are summarised in Figure 4.

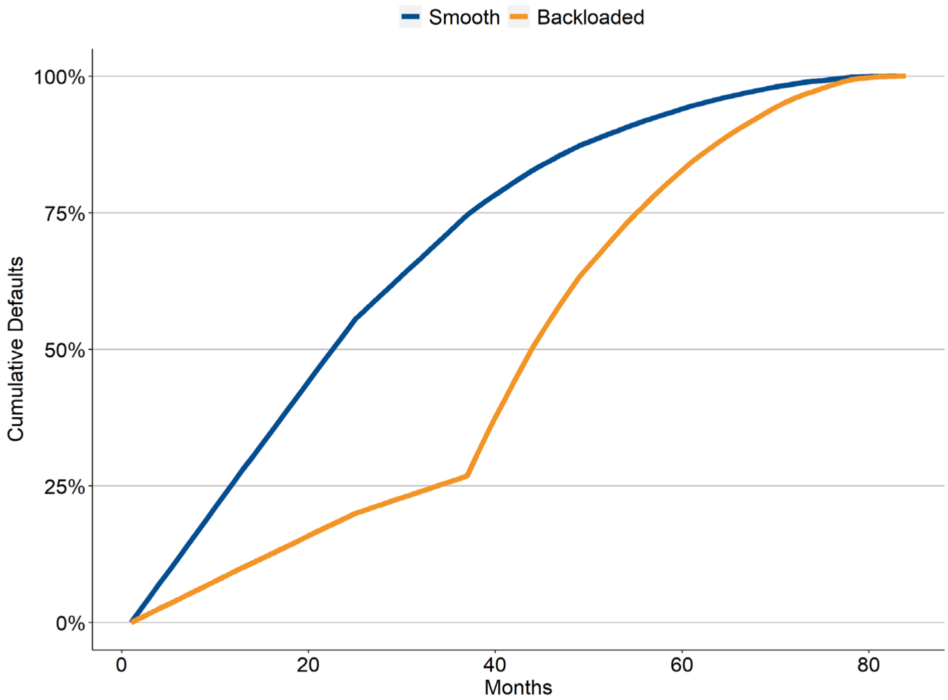
Figure 4: Expected loss of notes for the different scenarios



In the base case, expected losses are very similar due to smooth default-timing assumptions (see Figure 5). In the backloaded default scenario, the results show more dispersion. When the default rate is high, the protective measures specific to the structures (excess spread or cash reserve) kick in early in the life of the transaction. This is strikingly evident when comparing scenarios ES1 and ES3 and, to a lesser extent, scenarios ES2 and ES4. In the backloaded scenario, excess spread is not trapped in the early life of the transaction in ES3 and ES4. When defaults start to occur, the excess spread is not always sufficient to offset losses. When defaults happen early, the two scenarios show the same behaviour, as all excess spread is used.

An additional element to consider is that, given the generally limited granularity of these portfolios, excess spread may be impacted by defaults, in particular if there is a high correlation between asset risk and interest.

Figure 5: Default timing assumptions



In the base case, the most protective scenarios are OC and CR1, since not only the excess spread is utilised but there is also an initial cushion of EUR 20m in the form of OC or cash reserve, respectively. Conversely, scenarios where the excess spread is used to reinvest in assets with similar profile, ES2 and ES4, have the worst outcome in terms of expected loss in the base case. However as we will see, they yield the same benchmark rating as other results in our expected-loss table[1] due to a longer weighted average life (WAL).

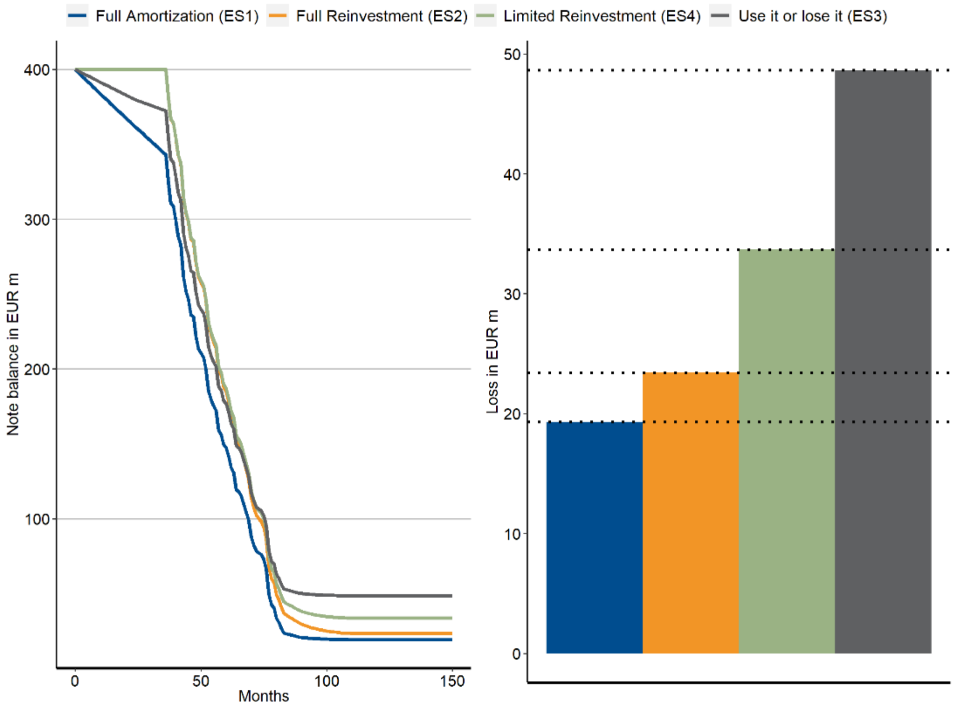
The results are more distinct when default timing is backloaded. The lowest expected losses in this case are ES1 and ES2. This is expected since no excess spread can escape in these scenarios. Interestingly, ES1 and ES2 perform better in a backloaded scenario than in the base case. For ES2, this is because the portfolio builds well in the ramp-up period with low defaults and receives more excess spread over the long term. Similarly, for ES1, fast amortisation helps build a protective level of OC.

The main reason for divergence in expected losses from the base case is the excess-spread trapping mechanism, as mentioned when comparing ES1 and ES3. Compared to other scenarios, ES3 ("use-it-or-lose-it") fails to maintain a protection buffer against a wave of defaults late in the lifetime of the portfolio, either in the form of asset or cash build-up, or in the form of early amortisation.

In Figure 6, we observe the main trade-off when simulating a default rate of 40% in the portfolio. We can see that the ES3 scenario incurs more than twice the amount of the loss of a full reinvestment structure (ES2).

[1] Please refer to *Idealised expected loss and default probability tables explained* on how to associate different modelled expected loss rates with different benchmark ratings

Figure 6: Amortisation and loss profiles in a 40% default scenario (backloaded)



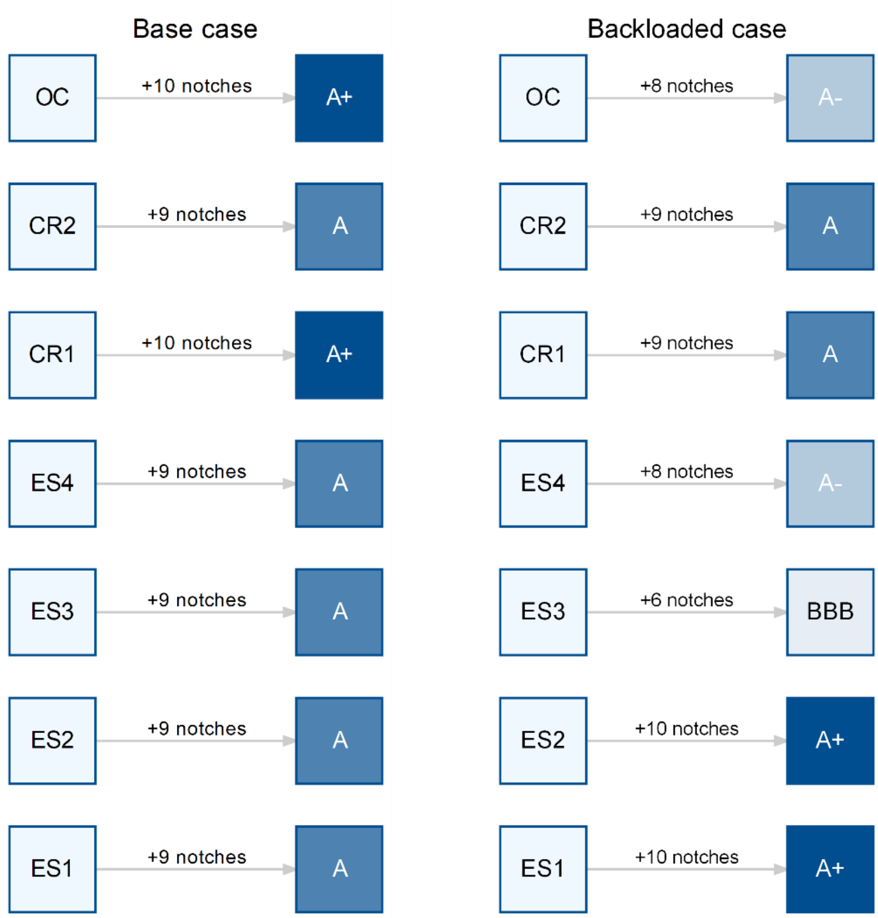
Notch differential

In general, a typical B rated portfolio repackaged and enhanced by excess spread (5% in this example) exhibits a 6-10 notch uplift in model output on the note level. The first panel of Figure 7 shows that as long as the excess spread is retained in the structure to offset the defaults as they occur, the scenarios show comparable results.

In the second panel of Figure 7, we observe the effect of clustered defaults. Structures such as full amortisation (ES1) and full reinvestment (ES2) outperform other structures by three to four notches, since they fully retain the excess spread, regardless of the current status of the defaults. This mechanism essentially delays payments made outside the rated instrument in a benign environment.

Interestingly, more static structures such as CR1 and CR2 continue to provide a substantial amount of uplift at the note level. This is a direct consequence of the cash reserve being topped up when cumulative losses are high. In this example, to reflect existing structures, we have simulated that, at any point in time, the cash reserve has to be the higher of the cumulative loss ratio times the note balance, or 5% of the note balance. This leads to a larger share of excess spread to be trapped compared to a static percentage in case of high defaults.

Figure 7: Notch uplifts[2]



Model transaction assumptions

The model portfolio mirrors the risk profile of private debt funds

The hypothetical portfolio and structure used here are representative of private debt fund transactions seen recently. We assume that the loan portfolio is fully ramped with a remaining three-year reinvestment period. Figure 8 summarises the main characteristics of the asset pool.

[2] The letters indicate the benchmark ratings coming out from the quantitative association of the expected loss and WAL from the model with Scope's idealised expected loss tables

Figure 8: Characteristics of the model portfolio

Portfolio characteristics	Value
Notional	EUR 400m
Number of loans	100
Number of obligors	50
Largest obligor weight	3.5%
Weighted average spread	500bp
Weighted average life	5.0 years
Weighted average 1Y PD	5.9%
Equivalent 1Y PD rating	B
Geography	Germany (44.3%), UK (36.6%), France (19.1%)
Industry	Professional services (37.9%), Healthcare (31.8%), Telecommunications (17.4%), Software and hardware (13.0%)
Loan type	1st lien senior secured

With the above portfolio characteristics Scope's Portfolio Model achieves the following asset variables:

Figure 9: Asset variables

Item	Value
Mean default rate	21.0%
Coefficient of variation	49.6%
Recovery rate (B rating scenario)	70.0%
Recovery rate (BBB rating scenario)	60.2%
Weighted average default timing	2.1 years

We have modelled only one class of pass-through notes

For the sake of this example we have assumed that:

- only one class of notes is issued for a notional equal to the portfolio notional of EUR 400m,
- the notes do not promise any coupon, and
- the notes have a final maturity of 10 years to ensure that no asset needs to be sold prior to its maturity to redeem the notes' notional.

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