

InFocus Document ALM LDI Interface



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1 Introduction

This document gives a summary of how the ALM/LDI Interface works in SuperVal and it illustrates how the results are displayed in the database.

The ALM/LDI module creates a table in the Access database that has been designed to provide additional information about the timing of the cashflows. The table is intended to ensure that the Users have sufficient information about the plan's cashflows to enable them to produce a full ALM study. In particular, the cashflows of the plan are split into year of payment. SuperVal always allows users to produce 3D cashflows such that the year left service is available.

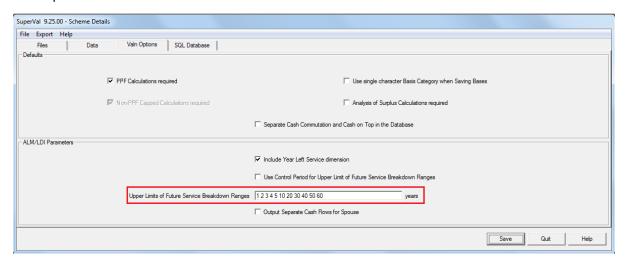
A full description of the Access Database is given in the Infocus Document – Database Output.



2 Scheme Set Up

2.1 Future Service Breakdown Ranges

Users can define the future service breakdown range in the "Upper Limits of Future Service Breakdown Ranges" field under Scheme Details. Scheme Details are found under: Files > Properties > Valn Options.



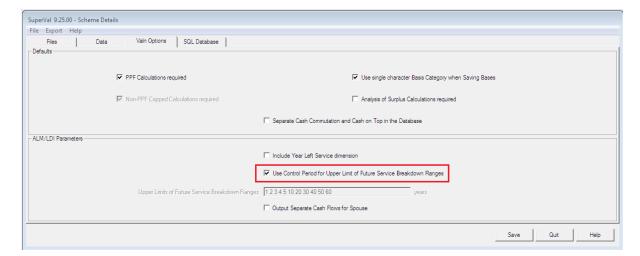
If the above set up is used, the Future Service Accrual will be split into 1, 2, 3, 4, 5 and then 6-10 will be shown under 10 years, 11 -20 be shown under 20 years etc.

If the "Upper Limits of Future Service Breakdown Ranges" field is set to 3 60, then the Future Service Accrual will be a total of 1, 2 and 3 shown under 3 and then 4 – 60 will be shown under Future Service Accrual of 60.

2.2 Control Period used as the Upper Limit of Future Service Breakdown Ranges

Users now have the ability to use the Control Period as the Upper Limit of Future Service Breakdown Ranges if the below field is ticked.

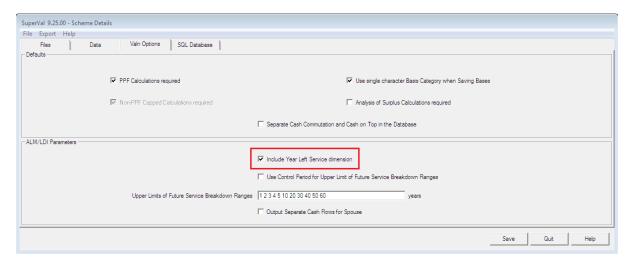




In the AltScenData Table, when an AAN valuation is run the Upper Limit of Future Service used will be set to 99 (i.e. all future service will be treated as one band).

2.3 3D Cashflows

Users can also get 3D Cashflows from SuperVal by checking the "include Year Left Service dimension" checkbox on the Scheme Details. Following this method will create a new column in the "AltScenData" table; the Year Left Service column. This shows the year in which active members have withdrawn from the Scheme.





3 Basis Set Up

No additional information needs to be added to the Basis setup to enable the ALM LDI to run.

If Users are intending to use the results produced in the Scenario Modelling Spreadsheet (SMS) Module then it is recommended that the User populates the "Description used for Consolidation" fields under the "Increase" tab of the Scheme Financials.

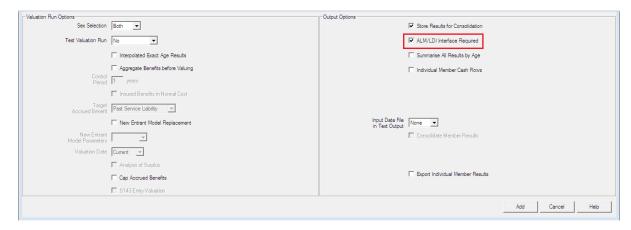


This will enable the same pension increases to be consolidated together.



4 Valuation Run

Once the data and the basis are ready in SuperVal, the valuation run can be set up. To set up the valuation run, the User is required to check the "ALM/LDI Interface Required?" checkbox under Batch Run > Parameters.



Once the valuation run is complete, you can run a consolidation.



5 Results

The valuation run produces a database "SVResultsDB.mdb" in the consolidation folder. This file can be opened in Microsoft Access. An additional table will be populated in this database called the "AltScenData" table which contains the ALM/LDI information.

AltScenData								
ResultsCate -	BenefitType ▼	Contingency -	LiabilityTyp: -	FSAccrual 🔻	YearLeftSen ▼	YearIntoPay -	SVYear -	SVValue
11		5	8	0	6	12	12	
11	_	5	8	0	7	12	12	-763.8243
11	. 1	5	8	0	8	12	12	-753.8630
11	. 1	5	8	0	9	12	12	-744.0503
11	. 1	5	8	0	10	12	12	-734.3735
11	. 1	5	8	0	11	12	12	-724.746
11	. 1	5	8	3	1	12	12	-22.54484
11	. 1	5	8	3	2	12	12	-66.61876
11	. 1	5	8	3	3	12	12	-109.3637
11	. 1	5	8	3	4	12	12	-129.2655
11	. 1	5	8	3	5	12	12	-127.324
11	. 1	5	8	3	6	12	12	-125.4118
11	. 1	5	8	3	7	12	12	-123.5283
11	. 1	5	8	3	8	12	12	-121.673
11	. 1	5	8	3	9	12	12	-119.8458
11	. 1	5	8	3	10	12	12	-118.0458
11	. 1	5	8	3	11	12	12	-116.2730
11	. 1	5	8	99	4	12	12	-21.54425
11	. 1	5	8	99	5	12	12	-63.66206
11	. 1	5	8	99	6	12	12	-104.5099
11	. 1	5	8	99	7	12	12	-144.1164
11	. 1	5	8	99	8	12	12	-182.509

Please note: if a consolidation was run with the "Description used for Consolidation" fields populated, the same results will be produced. But the "BenefitType" column will be populated with ID 100+ which correspond to the names that are defined in "Description used for Consolidation" fields.



5.1 "AltScenData" Table

The table below explains the "AltScenData" Table.

Column Name	Description		
ResultsCategoryID	This column describes whether the results are from Actives, New Entrants, Deferreds or Pensioners.		
	Details of which category type each code relates to are found in the "ResultsCategory" Table. This table also includes "ClassID" which shows the membership group. The membership groups are:		
	1 – Actives		
	2 – New Entrants		
	3 – Deferreds		
	4 – Pensioners		
BenefitTypeID	This column describes the pension increases. If pension escalation in the "Description used for Consolidation" fields were populated under the Scheme Financials e.g. RPI, LPI then those will be valued as 100+ integers.		
	Details of what benefit type each code relates to are found in the "BenefitType" table.		
ContingencyID	This column describes the different modes of exits such as retirement, death in service, ill health etc.		
	Details of what contingency type each code relates to are found in the "Contingency" table.		
LiabilityID	This column describes the discontinuance cashflow or the full cashflow		
FSAccrual	This column describes the future service accrual (Actives only). It will be "0" for all non-actives.		
	For Actives, records will show 0 for past service or the number of years of future service.		



Column Name	Description
YearLeftService	This column describes the year the Active member withdraws from the Scheme.
YearIntoPayment	This column describes the year the benefit originally came into payment.
SVYear	This column shows the year the benefit shown in SVValue is payable. It is the number of years since the valuation date.
SVValue	This column shows the projection of annual benefit cashflows.



The "ResultsData" table and the "AltScenData" table are similar but the "AltScenData" table has extra columns – YearIntoPayment, YearLeftService and FSAccrual.

The "AltScenData" table will enable the User to correctly allow for the differentiation in discount rate pre and post retirement when discounting cashflows.



6 SuperVal Methodology

To calculate the Present Value of liabilities using cashflows:

6.1 Cash

To calculate the present value of the cash liability paid on Normal Retirement: multiply the cashflow by:

```
(1 + pre-retirement discount rate) ^ - (YEAR INTO PAYMENT-1).
```

To calculate the present value of the cash liability paid on other decrements: multiply the cashflow by

(1 + pre-retirement discount rate) ^ - (YEAR INTO PAYMENT-0.5).

6.2 Pension

To calculate the present value of the pension liability on Normal Retirement, where payments are made evenly over the year, you will need to apply both the pre-retirement discount rate and the post-retirement discount rate. The cashflow should be multiplied by:

```
(1 + pre-retirement discount rate) ^ - (YEAR INTO PAYMENT-1)
multiplied
(1 + post-retirement discount rate) ^ - (SVYEAR - YEAR INTO PAYMENT + 0.5).
```

To calculate the present value of the pension liability on other decrements: multiply the cashflow by:

```
(1 + pre-retirement discount rate) ^ - (YEAR INTO PAYMENT-0.5)multiplied(1 + post-retirement discount rate) ^ - (SVYEAR - YEAR INTO PAYMENT).
```

An adjustment should be made when the pension payments are made at different points in the year.