What's New!

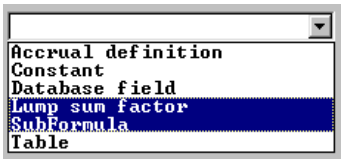
ProVal®

ProVal version 2.20 **December 2003**

ProVal version 2.20 introduces several new features including **lump sum factor components** based on valuation & forecast assumptions, an extract for **Relius Government Forms**, and an **"automatic" layout** option for arranging output. You'll find details about these and other enhancements below.

Benefits

- Two new component types simplify the "coding" of benefit formulas:

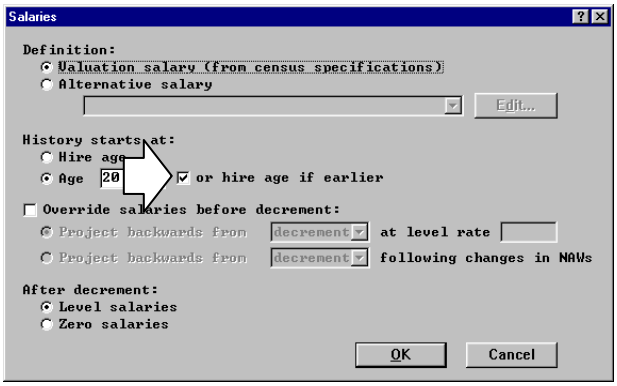


  - Lump sum factor components calculate annuity values with interest and mortality specified in valuation and projection assumptions rather than "hard coding" them into the benefit formula.

    See Lump Sum Factors, page 5

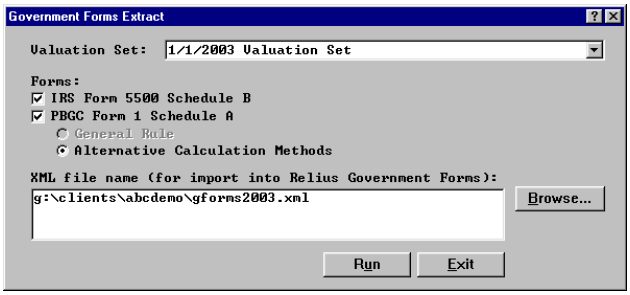
  - SubFormula components encapsulate frequently repeated parts of benefit formulas. This reduces the potential for errors in complex coding and facilitates checking. Subformula components, like all components, are detailed in the sample lives.

- In #PIA custom operators, a new option lets you start salary history at a specified age regardless of the hire age.

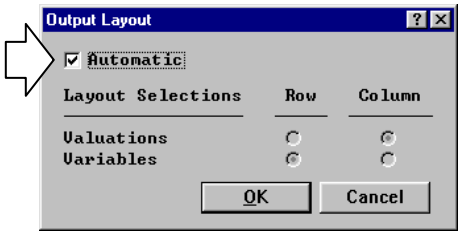


Output & Reporting

- If you use Relius Government Forms (formerly HyperPrep) for preparing IRS Form 5500 Schedule B or PBGC Form 1 Schedule A, the new Government Forms Extract output command will save you a lot of manual entry. Simply choose a valuation set and ProVal will create a results file (in .xml format) for import into Relius.



- A new "automatic" layout option in output (and descriptive statistics) lets ProVal select the "best" layout for you.



  On a related note, the "data series" layout for graphs now defaults to the "best" fit for the output you're looking at.

- Individual results in a valuation now write blanks for unavailable variables (e.g., variables for funding methods that aren't run) rather than

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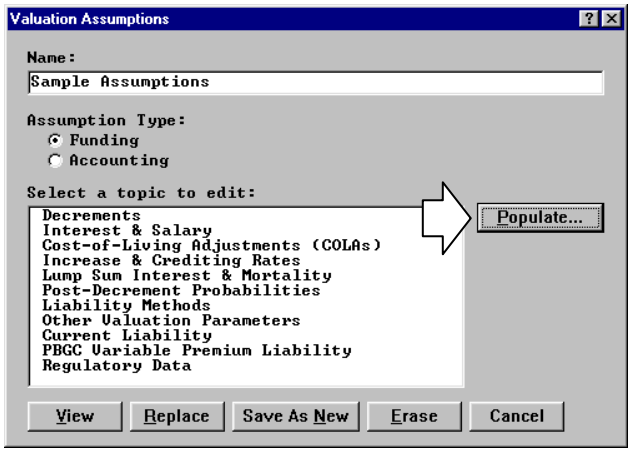
leaving the variable out altogether. When merging into an existing individual results database, the blanks will overwrite existing results, avoiding possible confusion.

- Experience benefit payments (as opposed to valuation expected benefit payments) can now be viewed in Core Output. This avoids the necessity to run a Deterministic Forecast to see these values.

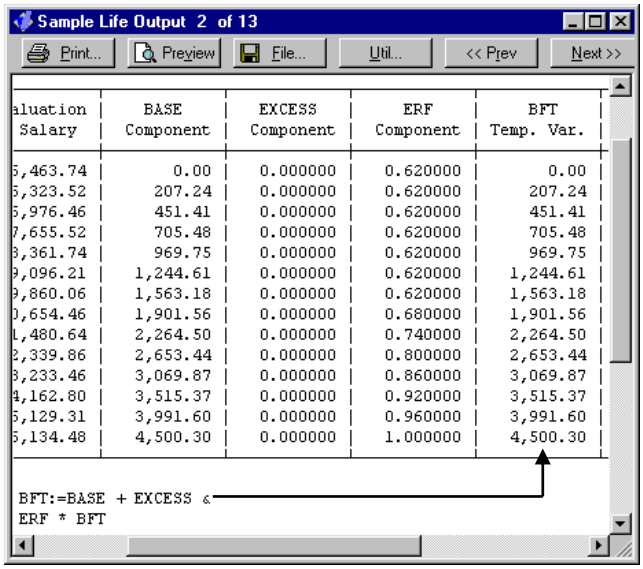
Valuation Assumptions

- A new "populate" button allows you to copy valuation assumptions from one set to another. This is especially useful for copying across modes (e.g., from U.S. Qualified to SERP) and from funding to accounting.



Sample Lives

- Sample life reports now include the value of temporary assignments (e.g., BFT:=), making formulas easier to check.



- A new Accrual Basis sample life report details the components of an accrual basis expression.

Valuations

- In processing messages for valuations and cores, RecIDs for excluded records are now suppressed (only RecIDs for data defaults were suppressed previously). The RecIDs can still be seen by checking "Display by Record" when viewing the run. Also, non-participating records are now included among the RecIDs for excluded records.

Asset & Funding Policies

- A new "Normal Cost + Supplemental Cost" funding policy option lets you allocate a portion of any surplus to offset total costs. For example you might allocate ½ of the excess from 5% to 10%, ¾ of the excess from 10% to 15%, and the entire excess above 15% to reduce the supplemental cost.

Valuation Sets, Deterministic & Stochastic Forecasts

- As discussed at the 2003 Users Group Meeting, the double counting of interest on assumed administrative expenses has been removed in accounting calculations. Now assumed administrative expenses are added to the service cost after it has been adjusted for interest to the end of the year. The expected return on assets continues to be adjusted for the expected return on administrative expenses because they are assumed payable at the beginning of the year.

- The experience lump sum interest rate can now be modeled (independent of valuation interest rates and inflation) in forecasts.

See Lump Sum Factors, page 5

General

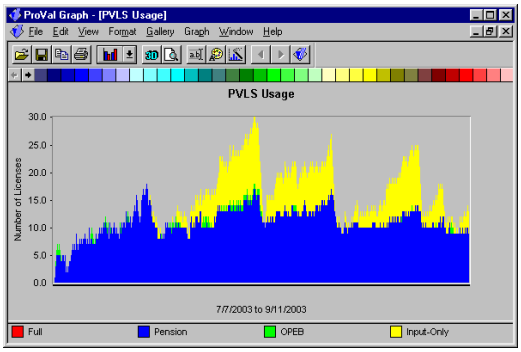
- The processing of valuations and core projections has been sped up by approximately 15%.

- The size limit on ProVal client files (*.sf) files has been increased from 2GB to 4GB.

- If you use **Novell**, be sure to read important information about client drivers in the Installation Guide (Troubleshooting section).

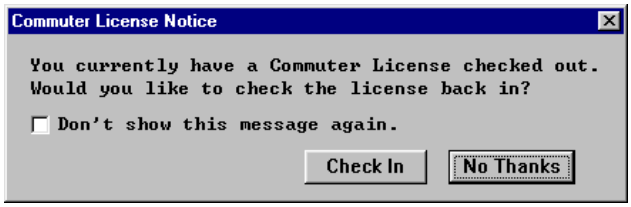
Keys & Licenses

- For ProVal License Server (PVLS) users:
  - The requirement to wait 1 hour before "killing" a dead license has been replaced with a warning message.
  - Usage statistics can now be viewed in a convenient graph format.



  - To take advantage of the new Populate ProVal PS command, be sure to update ProVal on the PVLS machine to version 2.20.
- USB keys are now available for machines that lack parallel ports.

- If you use a commuter license for out-of-office work, ProVal will remind you to check it in when you return to the office.



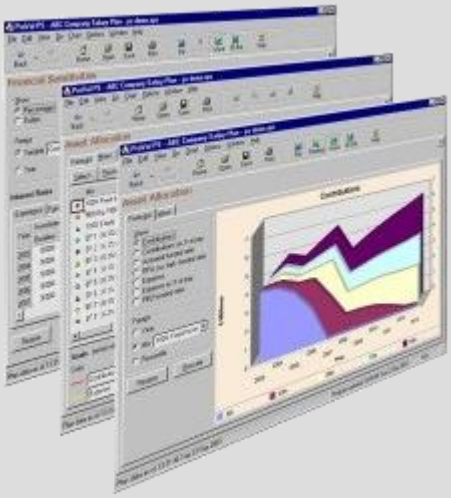
Changes Log

- Be sure to read the changes log (see What's New in Help or the CHANGES.LOG file in the ProVal directory) about updates to certain calculations that may change results.

ProVal PS, a desktop toolkit for sponsors of defined benefit and retiree medical plans, is being released in conjunction with ProVal 2.20. It lets actuaries and non-actuaries answer many "what if" questions, including:

Disclosure & Budgeting: What should be budgeted for next year's expense? What should be budgeted for next year's contribution? Will this year's disclosure include a reduction to equity?

Financial Sensitivities: What will future contributions and expense be? What if investment return is poor? What if inflation is higher? What if interest rates change?



Asset Allocation: What contributions and expense are expected under the plan's current asset mix? What is the potential downside? Are there alternative asset mixes which will better meet the plan's goals?

See a flash demo or download and install a trial version of ProVal PS at www.provalps.com

For more information, please contact:
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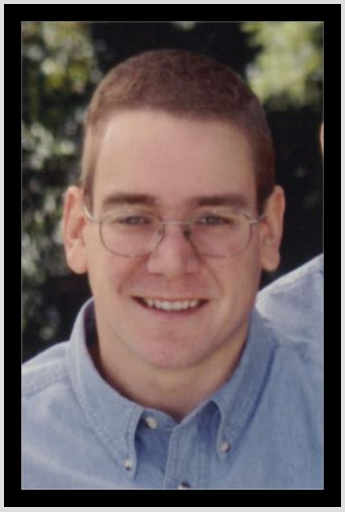
Dedication

We recently lost a good friend and colleague. **Mike Tortora** died Sunday May 25th after a courageous battle with brain cancer.



Mike joined WinTech in 1999 and quickly became an integral member of our team. He conducted numerous ProVal training sessions and spent hundreds of hours answering client support questions. He loved working with our clients.

We wish to dedicate ProVal version 2.20 to the memory of our friend Mike.

WinTech's Virtual Back Office

Need help bringing up new clients, converting cases or experienced help in a ProVal area that's new to you? Why not call upon WinTech's experienced actuaries to fill in?

Contact Mark Ruloff at (203) 861-5530 for details or to request a quote.

New Member of the ProVal Team

Elissa Tauber, FSA, recently joined the ProVal team. She is an experienced consulting actuary and ProVal user. She graduated Cum Laude from the University of Pennsylvania and has always enjoyed teaching and programming. Be sure to say hello to her if you reach her at ProVal support or attend a ProVal training session.

WinTech

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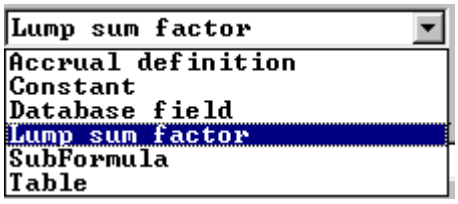
Lump Sum Factors

A new lump sum factor benefit formula component type has been added to ProVal. Previously lump sum factors were valued in benefit formulas by using table components. Lump sum factor components have several advantages over table components for valuing lump sums:



- The interest and mortality assumptions are defined in the valuation and projection assumptions, improving documentation and minimizing errors.
- Specialized liabilities, such as current liabilities, can automatically value lump sums on the liability's basis (interest only or interest and mortality) rather than the valuation basis, avoiding the need to run additional valuations and use overrides.
- During a forecast, experience lump sum interest rates can vary directly with an interest rate benchmark rather than indirectly based on changes in compound inflation.

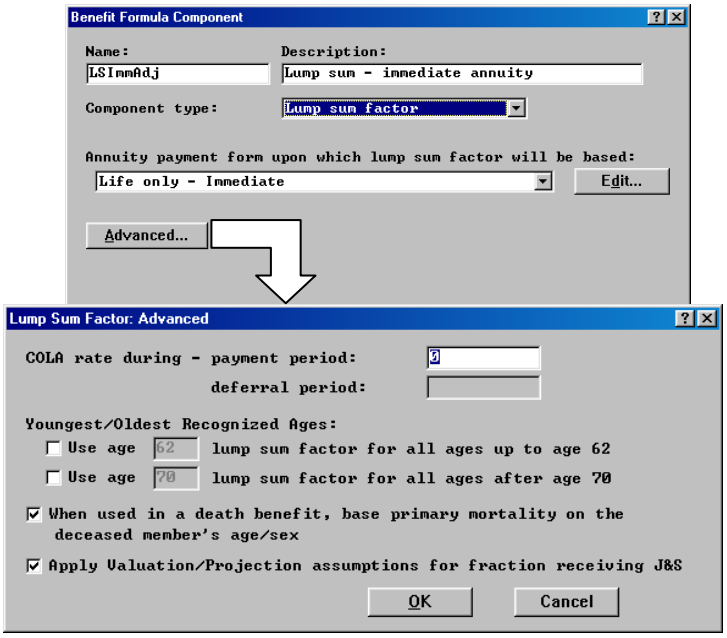
Some plan features that can now be valued more accurately and directly are:

- Lump sum payment form (for valuation and/or experience) based on a market interest rate.
- Death benefits equal to the present value of the member's accrued benefit, whether paid as a lump sum or a survivor annuity.
- Survivor annuities assumed to be paid as a lump sum (for valuations and/or experience).
- Conversion factors for "lump sum to annuity" or vice versa, such as in a cash balance minimum benefit or a defined contribution offset formula.
- Optional annuity form conversion factors (when coded as a ratio of lump sum present values) where the interest rate is assumed to vary in a forecast with the valuation interest rate.

Benefit Formula Components

The primary specification when you select a lump sum factor component type is the associated annuity payment form from the Payment Form Library. The Lump Sum Factor value at each decrement date will be calculated as the present value of the specified annuity payment form based on the interest and mortality assumptions specified in the valuation and/or projection assumptions.

The **Advanced** button accesses parameters that further define the lump sum factors.



If the **COLA rate during payment period** and **deferral period** are non-zero, then the lump sum factor will represent an increasing annuity.

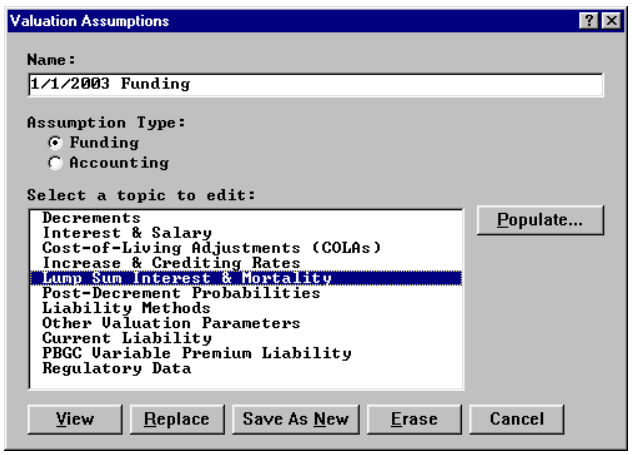
The **Youngest/Oldest Recognized Ages** parameters freeze the lump sum factor values before and/or after the specified ages. The oldest recognized age, for example, might be useful in calculating a frozen lump sum value of the normal retirement benefit payable at a delayed retirement age. The youngest recognized age, for example, could be used to calculate the lump sum present value of a deferred normal retirement benefit.

For the death contingency, the **when used in a death benefit, base primary mortality on the deceased member's age/sex** check box provides an option to indicate an underlying annuity payable to the (spouse) beneficiary rather than the member. This box should be unchecked if the death benefit being valued is the lump sum present value of an annuity payable to the spouse.

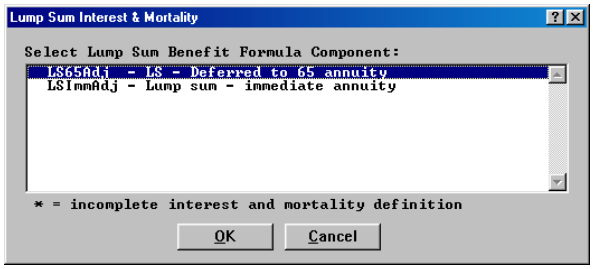
If the underlying payment form is a joint and survivor annuity, you may calculate a lump sum value based on a "pure" J&S payment form or you may weight the lump sum value between a life and a

J&S by checking the box to **apply Valuation/Projection assumptions for fraction receiving J&S**.

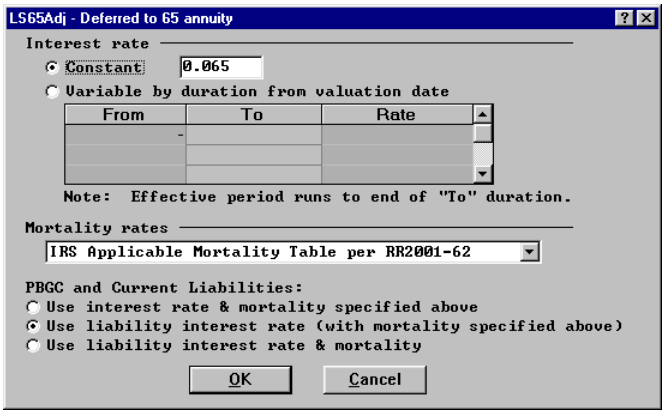
Valuation Assumptions



The interest and mortality assumptions for any lump sum factor components are specified in the valuation assumptions. When you click **Lump Sum Interest & Mortality**, you will see a list of the Lump Sum Benefit Formula components defined in the current Project, with an asterisk next to any that are not complete.



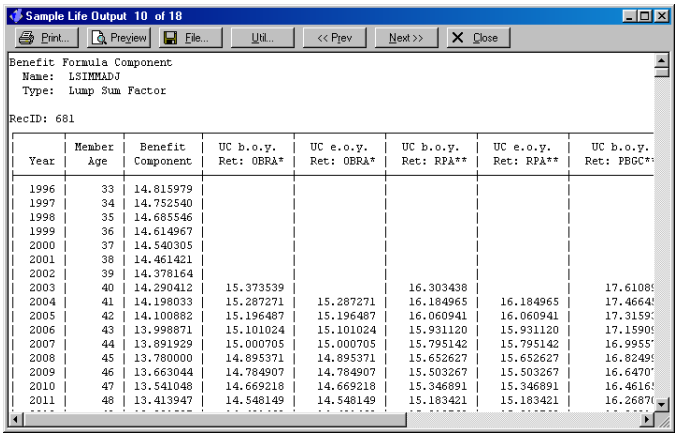
Clicking a lump sum component name will bring up the dialog box for specifying interest & mortality. The **interest rate** can be either a **constant** or **variable by duration from the valuation date**. This latter option was designed for our Canadian users to value the regulatory Solvency Liability, and its operation during a forecast is not the same as the "variable by calendar year option" that currently exists for interest and salary inflation assumptions. (For additional information and examples, see the online Command Reference Help.)



The lump sum factor **mortality rates** are restricted only in that generational mortality cannot be referenced. For joint & survivor annuities, primary and contingent annuitant mortality are specified separately, and therefore need not be the same. No mortality is requested for certain only annuities.

For specialized liabilities, you may **use the liability interest rate** (per 2003 IRS Graybook Q&A #4) or **use the liability interest rate & mortality** in lieu of the lump sum interest & mortality. This allows a single valuation to value lump sum factors on several bases. For example, U.S. Qualified mode funding valuation might include five (5) alternative bases: funding, PBGC, RPA, OBRA and Gateway liabilities. Other alternative bases include the Canadian Registered mode Solvency liability and the accounting ABO and FAS 35 liabilities.

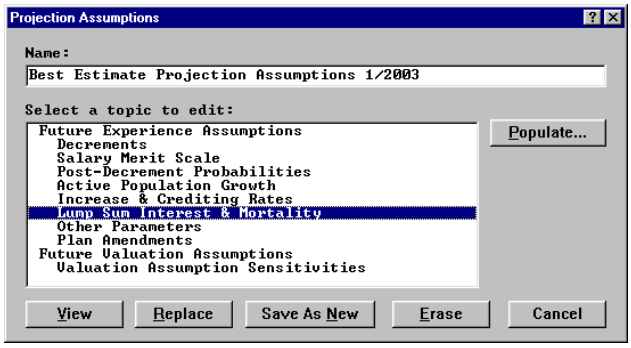
Sample life output displays the value of the lump sum for each liability, as well as for death contingency versus non-death contingencies.



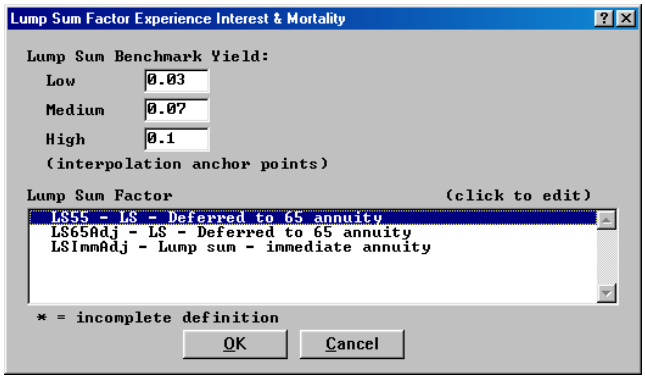
Projection Assumptions

Lump sum factor components allow you to directly vary the actual lump sum payout based on benchmark lump sum yields. To accomplish this, a new type of interpolation has been added to ProVal. Previously, a core projection could be run with two

types of sensitivities: (1) experience inflation and (2) valuation interest rates. These sensitivities are parameterized in the Increase & Crediting Rates and Valuation Assumption Sensitivities Projection Assumptions topics, respectively. Now, a third type of sensitivity has been added: **lump sum factor benchmark yield** based on the new **Lump Sum Factor Interest & Mortality** Projection Assumption topic.

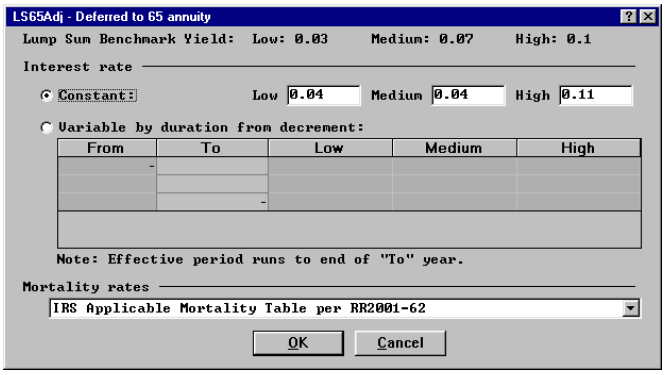


When you click **Lump Sum Interest & Mortality**, you will be asked to specify the low, medium and high lump sum benchmark yield **interpolation anchor points**. These are the three alternative lump sum benchmark yields (which may or may not be equal to the lump sum interest rates, as will be discussed below) under which experience lump sums will be valued during a core projection. These interpolation points will then be used to derive experience lump sums based on whatever the experience benchmark yield is during a deterministic or stochastic forecast.

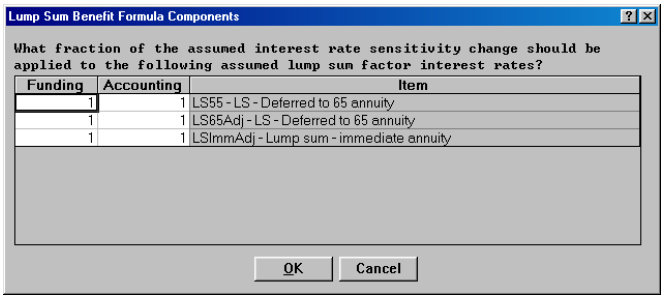


While not required, we recommend that the experience lump sum interest rates be parameterized assuming that the benchmark yield is a 30-year Treasury (i.e., GATT) yield. Stochastic forecasts will set future lump sum benchmark yields equal to the prior year's capital market simulation 30-Year Treasury benchmark yield.

Clicking a lump sum component name will bring up the dialog box for specifying the interest & mortality assumptions for actual (versus expected) benefit payments. At first glance, it may seem surprising to have to specify the **mortality** assumption, but the proliferation of alternative valuation lump sum mortality assumptions – funding, RPA current liability, and accounting to name a few – requires an unambiguous experience mortality specification. Experience **interest rates** are specified based on their relationship to the lump sum benchmark yield (e.g., the 30-year Treasury yield benchmark in a Capital Market Simulation). As with valuation assumptions, the interest rate can be either a **constant** or **variable by duration**. (While valuation assumptions are variable based on duration from the valuation date, experience assumptions are variable based on duration from decrement.) The dialog box displays the lump sum benchmark yield interpolation points that you entered in the prior dialog box and requests the associated experience lump sum interest rate. Typically there will be a direct mathematical relationship between the two, but minimum or maximum interest rates may apply such that the relationship is not linear.

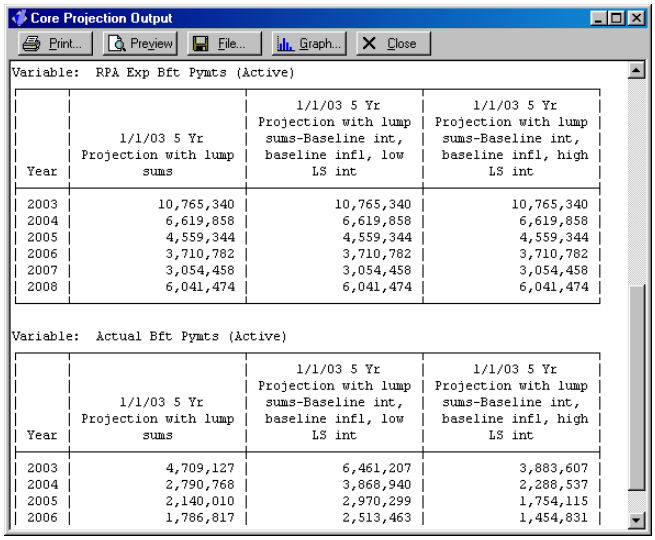


Lump sum factor valuation interest rate changes also have to be considered because the valuation interest rate may change during a forecast. This experience assumption is specified, under the **Valuation Assumptions Sensitivities** topic, similarly to parameterization of other economic valuation assumptions.



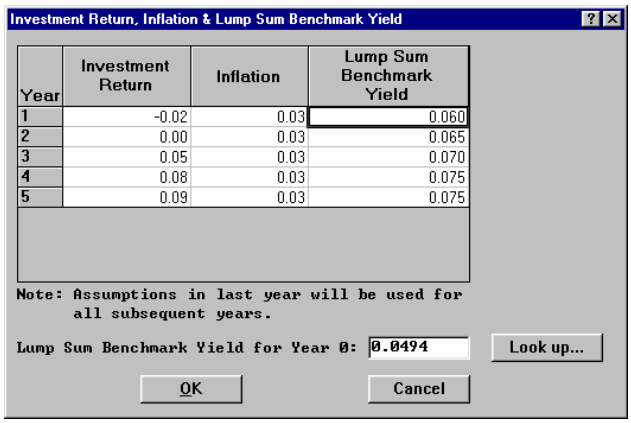
Core Projection

After you run a core projection with lump sum interest rate sensitivities, you will be able to view the results of the experience benefit payments NEW! under the alternative assumptions through the **Output > Core Output** menu. Note that expected benefit payments will not vary by the experience lump sum assumption because they are based only on the valuation lump sum assumption. Only actual benefit payments will vary with the experience assumption.



Deterministic Assumptions

Once a core projection has been run with lump sum factor interest rate sensitivities, you can study the impact of alternative experience through either deterministic or stochastic forecasts. In deterministic forecasts, you explicitly specify the **Lump Sum Benchmark Yield** for each year of experience, where the **Year 0** yield is the benchmark yield used to determine experience lump sum payments between the initial (baseline) valuation date (a.k.a., year 0) and the next one (year 1).



Stochastic Assumptions

In a stochastic forecast, the lump sum benchmark yield is taken from the referenced Capital Market Simulation 30-year Treasury benchmark yield. This is the same yield that is used directly for current liability rates and PBGC rates and indirectly for funding and accounting interest rates. The Capital Market Simulation yield for each year is assumed to be the yield as of the end of the year, since this is the amount applicable for interest rates.

Accordingly, stochastic forecasts also need to know what yield to use to determine the lump sum payments during the first year after the baseline valuation date. This **Year 0** yield is specified in the Lump Sum Benchmark Yield dialog box, which also displays the relationship between the lump sum benchmark yield in future years and the 30-year Treasury benchmark yield.