

What's New!

ProVal

ProVal version 2.19

October 2002

ProVal 2.19 introduces several new features for OPEB plans, including **automatic pre/post-Medicare liability splits**, **explicit pre/post-Medicare trend**, and **benefit payment projections** in a valuation. ProVal 2.19 also introduces several new pension features, including an easier way to “code” **flat dollar** benefits with negotiated increases, explicit **age and points-based accrual rates** (popular in cash balance plans), and **gateway liability** calculations in the same run as RPA and OBRA. Forecasting in either mode is now easier with a feature that populates **projection assumptions** with your valuation assumptions. You’ll find details about these and other enhancements to ProVal below.

Benefits (OPEB only)

- ◆ Lifetime maximums have been enhanced to address the following needs:
 - “Refreshing” the limit either annually or when hitting the limit
 - Applying separate limits for pre- and post-Medicare benefits (Medicare coverage age is defined in Plan Definitions > Plan Attributes)
 - Increasing the limit or remaining balance (for medical spending accounts)
 - Combining benefits under family caps

[See Lifetime Maximums, page 5](#)

- ◆ In Benefit Definitions, you can now specify separate payment forms for both the member and spouse in a single benefit. This eliminates the need for duplicate formulas when member and spouse benefits are identical. Separate results for members and spouses can still be seen in the output.

Benefit Definition

Name: Future retirees & spouses

Who is eligible for this benefit? Actives Inactives

Payment Form:

Member: Life only to member Edit...

Spouse: Life only to dependent Edit...

Post Decrement Probabilities apply

Select a topic to edit:

Active Eligibility
Gross Benefit Definition
Participant Contribution
Attribution

View Replace Save As New Erase Cancel

- ◆ In Benefit Definitions, additional attribution options let you:

- Use accrual rate proration by component, just like in pension modes. This facilitates age, service, and points-based attribution for APBO along with new age- and points-based accrual/attribution rates.
- Determine full eligibility based on changes in a table (useful for step rate plans)

[See APBO Attribution, page 7](#)

- ◆ In Benefit Definitions, a new checkbox lets you automatically limit the participant contribution to the gross benefit.

Participant Contribution

Formula: RetCont

Limit to gross benefit

Tip: Type in an expression using operators #SALARY, #PAS, +, -, *, /, #MIN, #MAX, ... (press F1 for more)

Component Library... OK Cancel

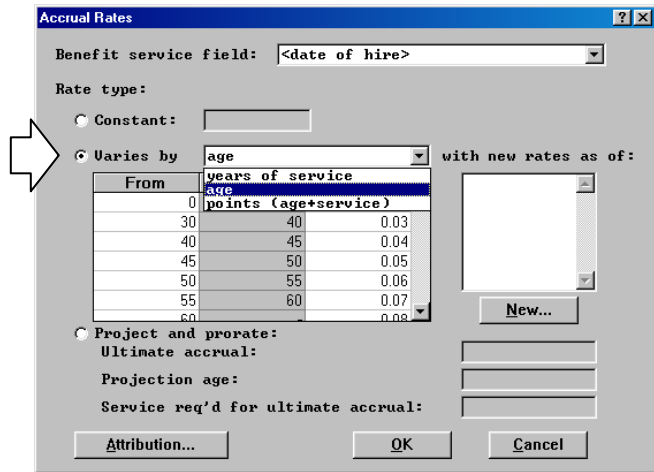
- ◆ In Benefit Definitions, new operators #DECAGE, #DECSVC, #DECPTS, #DECYEAR, #PMTAGE, and #PMTYEAR make it easy to refer to age at decrement, service at decrement, points at decrement, year of decrement, projected age of payment, and

	Page
WinTech's Virtual Back Office	4
Asset-Liability Studies are Hot	4
Lifetime Maximums	5
APBO Attribution	7
XML	8

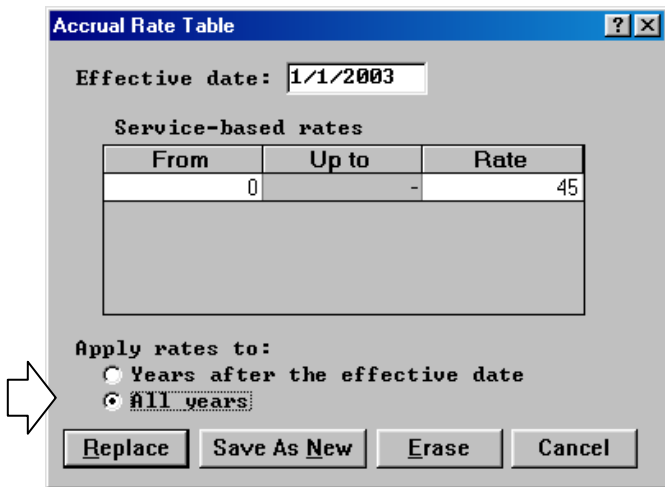
projected year of payment. Unrounded values are returned; if rounded results are desired, you can use #ROUND, #INT, etc. To use #DECSVC or #DECPTS for inactives, a new field for “service at decrement” must be specified in Census Specifications.

Benefits (Pension & OPEB)

- ◆ In Accrual Definition components, accrual and attribution rates can now be age-based and points-based (augmenting the service-based rates that already existed). This facilitates age- and points-based accrual rate proration for projected unit credit.



- ◆ In Accrual Definition components, flat dollar benefits with negotiated increases are now even easier to code with an option which lets “new rates as of...” apply retroactively to all years of service.



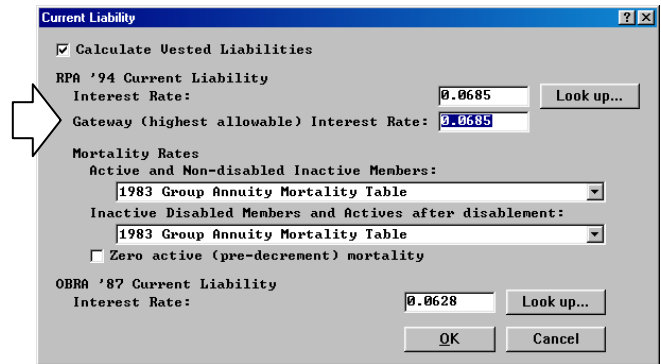
- ◆ You can now enter a formula before creating components; ProVal defers its validation until you click OK. In addition, if you accidentally use a field name instead of a component name,

ProVal will offer to create a component with the same name as the field.

- ◆ A new operator with syntax “datafield #OVERRIDE number” overrides its right argument with a database field if the field is not missing. For example, “PIAfield #OVERRIDE #PIA” might be useful to override PIA calculations with information stored on file for certain participants.

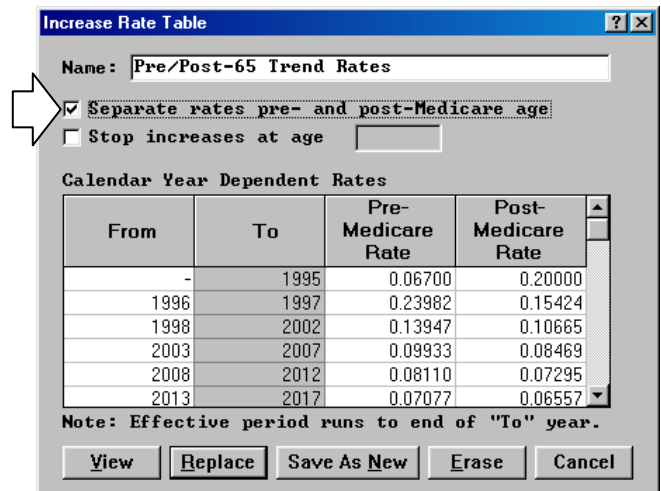
Valuation Assumptions (U.S. Qualified)

- ◆ A separate “gateway” interest rate (the highest permissible rate) may now be specified so that Gateway Liability, RPA '94 Current Liability, and OBRA '87 Current Liability can be calculated in a single valuation or projection.



Valuation Assumptions (OPEB only)

- ◆ In Increase Rate Tables, you can now specify explicit pre- and post-Medicare trend (Medicare coverage age is defined in Plan Definitions > Plan Attributes).



- ◆ In Increase Rate Tables, a new option lets you stop increases at a specified age (e.g., age 80).

Sample Lives

- The liability development for actives who have no liability because they do not meet participation requirements is now suppressed rather than showing the liability development and then zeroing out the liability result.

Valuations (OPEB only)

- ProVal now automatically calculates pre/post-Medicare liability splits, based on payment age (Medicare coverage age is defined in Plan Definitions > Plan Attributes). Splits apply to both valuations and core projections.

Total	Pre-Medicare			Post-Medicare		
	Gross Benefit	Participant Contribution	Net Benefit	Gross Benefit	Participant Contribution	Net Benefit
APBO total	7,060,287	1,692,769	5,367,518	8,674,983	1,395,283	7,279,701
APBO fully e	2,009,125	628,728	1,380,397	3,873,487	583,961	3,289,526
Normal cost	640,486	144,971	495,515	609,068	102,702	506,365
EPBO	13,700,968	3,006,498	10,694,471	13,825,542	2,370,478	11,455,064
Nominal pay						

- In a valuation, ProVal automatically produces a projection of benefit payments, headcount, and salary. This eliminates the need to run a core projection for this purpose. Detail splits are available by inactive status code, benefit, and gross benefit/cost sharing.

Projected headcount and benefits (Accounting)

Year	Active Headcount	Total Salary	Emerging Inactive Headcount	Gross Benefit	Participant Contribution	Net Benefit
1998	731.00	20,039,059	0.00	209,269	64,507	144,761
1999	667.39	18,960,250	67.55	298,141	79,458	218,683
2000	625.85	18,631,443	94.44	338,295	105,930	232,365
2001	594.11	18,626,106	110.20	407,188	126,819	280,368
2002	565.74	18,472,594	128.96	499,168	153,906	345,262
2003	534.98	18,464,710	153.16	709,671	211,951	497,720
2004	500.88	18,186,644	189.34	740,929	189,790	551,140
2005	481.05	18,291,883	194.66	739,553	195,535	544,019
2006	464.68	18,551,034	199.74	745,367	231,652	513,716
2007	443.24	18,563,598	220.89	880,827	245,272	635,555
2008	424.75	18,589,695	236.41	1,351,971	314,133	1,037,838
2009	384.77	17,702,073	301.10	1,528,379	336,543	1,191,835
2010	371.67	17,840,786	304.87	1,631,489	318,013	1,313,476
2011	359.35	18,046,458	310.43	1,319,032	312,118	1,006,913
2012	342.72	17,961,738	328.10	1,633,889	340,510	1,293,379
2013	322.16	17,614,958	355.17	2,256,387	428,037	1,828,350
2014	291.42	16,665,852	405.02	2,486,196	416,176	2,070,020

- Valuation and core output now show the average future service to full eligibility for all actives as well as those not yet fully eligible. A new option in Asset & Funding Policies > Accounting Methodology > Future Amortizations lets you choose which definition to use for your prior service amortizations.

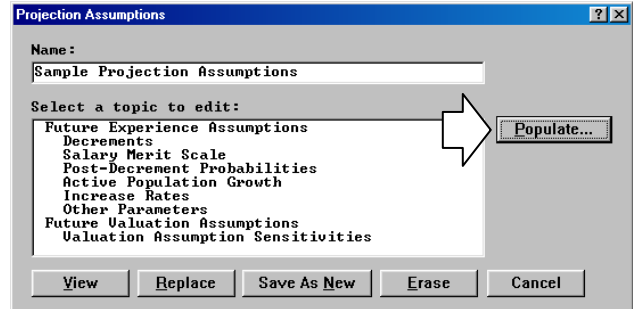
Average future service to full eligibility includes:

- only those participants not yet fully eligible
- all active participants

- In OPEB mode, inactive life expectancy now reflects temporary benefits. That is, life expectancy measures the period from the valuation date to the date of the last payment.

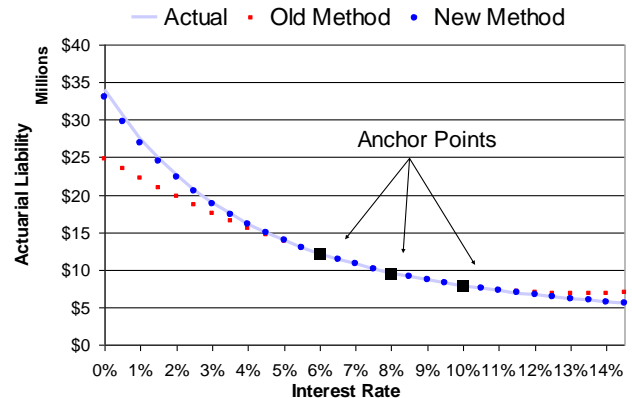
Projection Assumptions

- A new “populate” button allows you to populate projection assumptions from a set of valuation assumptions (i.e., copy valuation assumptions into projection assumptions).

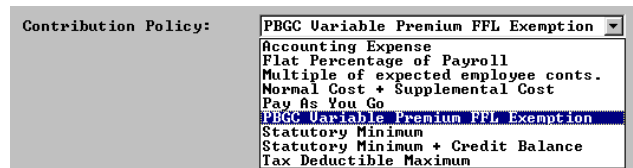


Deterministic and Stochastic Forecasts

- A new interpolation methodology significantly increases the accuracy of results for forecasts that have large interest rate swings such as the tails of a stochastic forecast. You can (and should) turn on the new interpolation methodology in Asset & Funding Policies > Forecast Analysis.



- The contribution policy “Maximum w/o unfunded Current Liab.” has been renamed and updated to “PBGC Variable Premium FFL Exemption”. This clarifies the intent of the policy and updates it to adjust for any credit balance as indicated in PBGC Technical Update 00-4.



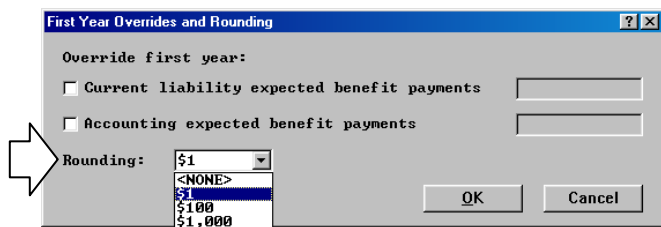
- All inputs can now be printed directly from Stochastic Forecasts, complete with a table of contents. Press the “View...” button within any

forecast, and you'll find an option to view the "Inputs...". (This feature is already available for valuations, valuation sets, core projections, and deterministic forecasts.)

- ◆ In stochastic assumptions, you can now increase RPA and PBGC interest rates for all plan years after 2001 (i.e., an indefinite extension of JCWAA'02). Also, the PBGC variable premium interest rate has been added to custom stochastic output variables.

Output

- ◆ Smoothed asset values (i.e., actuarial value and market-related value) are now developed in Valuation Set Exhibits and Deterministic Forecast Exhibits. In addition, projected market values are detailed in Deterministic Forecast Exhibits.
- ◆ For contribution and expense calculations, the specifications for rounding (none, \$1, \$100, \$1,000) can now be set in Asset & Funding Policies. This ensures that all output will be consistent with the exhibits.



- ◆ You now have the ability to save all ProVal inputs and output to an XML file. This facilitates your ability to use data feeds from ProVal for data warehousing, report writing, government forms, and other purposes.

[See XML, page 8](#)

- ◆ Valuation Salary and Present Value of Future Salaries have been added to the standard list of pension valuation output that displays when pressing the View button.

Database

- ◆ After importing data, ProVal now offers to import another file immediately (i.e., won't automatically close the command when finished importing a data file).

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.

WinTech's Virtual Back Office!

A little-publicized service offered by WinTech is a kind of virtual back office for our clients. Need help bringing up new clients, converting cases or just help during the busy season? 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.

Asset-Liability Studies are Hot!

Four ProVal users recently appeared in a Pension & Investments article on asset-liability studies. Two ProVal users received national awards for risk management.

WinTech has assisted ProVal users with 37 ALM studies in the first 9 months of 2002, not to mention the numerous studies done using ProVal without our assistance.

Would you like to be involved? Do you need to be trained? Would you like to tap our expertise?

Contact Mark Ruloff at (203) 861-5530 for details.

WinTech

500 West Putnam Avenue
Greenwich, CT 06830

tel: (203) 861-5530
fax: (203) 861-5531
email: support@winklevoss.com
website: www.winklevoss.com

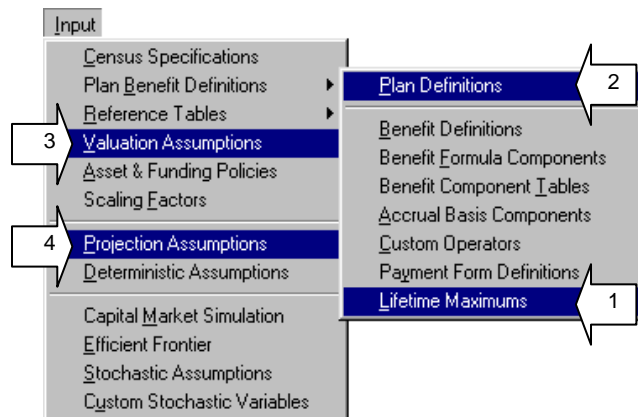
Lifetime Maximums

Lifetime maximums have been enhanced to address the following needs:

- “Refreshing” the limit either annually or when hitting the limit
- Applying separate limits for pre- and post-Medicare benefits
- Increasing the limit or remaining balance (for medical spending accounts)
- Combining benefits under family caps

To meet these needs:

1. A new **Lifetime Maximums** library has been created.
2. Lifetime maximums are now applied as part of a **Plan Definition**, rather than a Benefit Definition.
3. Increase rates for lifetime maximums are allowed in **Valuation Assumptions** and **Projection Assumptions**



Details about these enhancements are discussed below. For calculation details, please read the Technical Reference article in ProVal’s Help entitled “Lifetime Maximum Calculations”.

Lifetime Maximums Library

The original amount of the **lifetime maximum** may be specified as a **constant** dollar amount, using a database **field** (for inactives only), or using a **benefit formula** (for actives only). The original amount should include any increases granted since decrement, such as refreshes of the limit. A field or formula is useful when the lifetime maximum:

- varies by division, location, status, etc.
- has a different value for each participant (e.g., a medical spending account)

The **payments-to-date** are specified using a database field. This amount represents how much of the original lifetime maximum has been used up as of the valuation date. (Payments-to-date only apply to inactive lifetime maximums.)

Note: When the lifetime maximum represents a medical spending account, it may be more convenient to set the lifetime maximum and payments-to-date equal to the outstanding balance and zero, respectively. Otherwise, both of these inputs should be accumulated with interest.

Future payments determine which projected claims apply against the maximum. Regardless of whether the **gross benefit** or **net benefit** is selected, both the gross benefit and participant contribution will be set to zero after reaching the lifetime maximum.

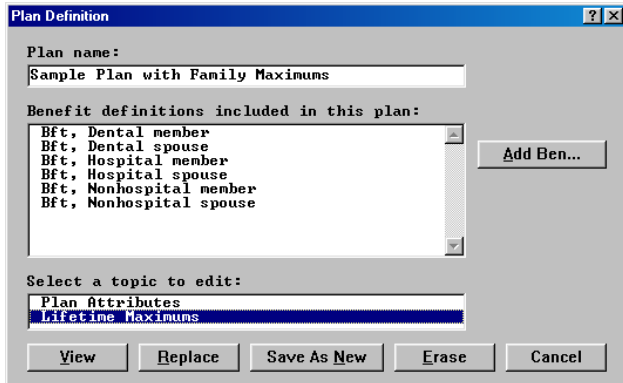
You may **refresh** the limit, that is, increase it in the future. You may apply dollar increases **annually** for all participants or **when hitting the limit** for those participants at the limit in that year. Alternatively, you may **apply increase rates** to the **lifetime maximum** or to the **outstanding balance** as in the case of a medical spending account. Increase rates

are entered in Valuation Assumptions and Projection Assumptions.

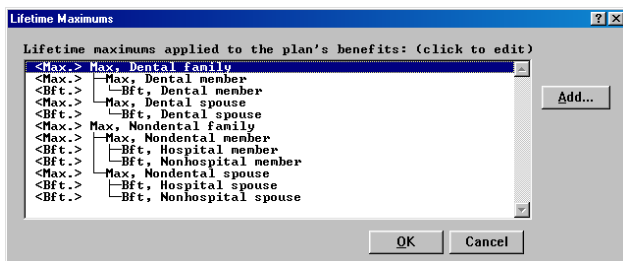
Finally, the limit may be **renewed** once Medicare coverage age is attained (specified in Plan Definitions > Plan Attributes). This allows you to apply separate limits to pre- and post-Medicare age claims.

Plan Definitions

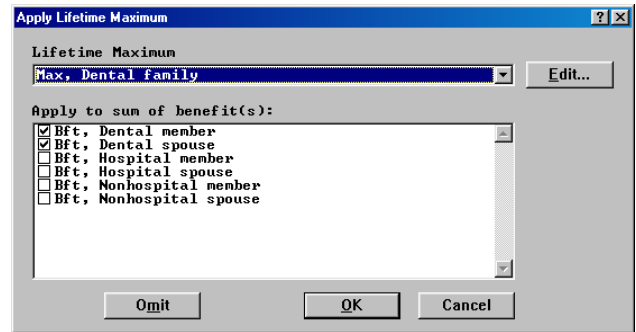
Lifetime maximums are now applied in **Plan Definitions** rather than in Benefit Definitions.



When you click on the **Lifetime Maximums** topic, you'll see an outline showing how lifetime maximums are applied to the benefits in the plan. Lifetime maximums may apply to overlapping sets of benefits (in this example, there are both family and individual lifetime maximums). Benefits are shown here only for reference (i.e., they cannot be edited here).

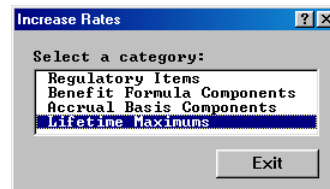


Clicking on an existing lifetime maximum or the **Add...** button lets you select a **lifetime maximum** (from the library) and the **benefit(s)** to which it applies. A combined maximum is indicated by selecting multiple benefits. That is, the maximum applies to the sum of the selected benefits.

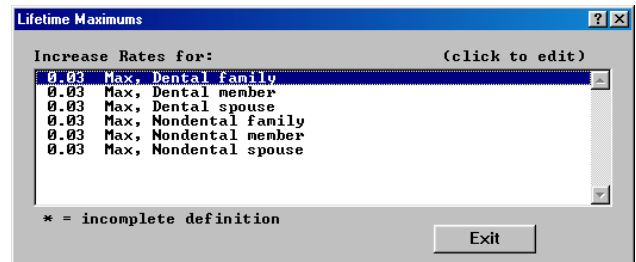


Valuation & Projection Assumptions

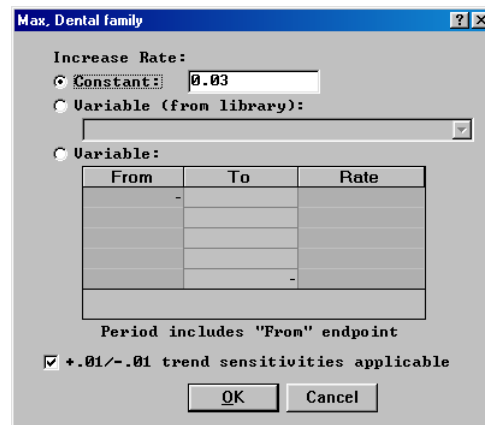
Under the **Increase Rates** topic, you may apply increases to lifetime maximums.



When you click on **Lifetime Maximums**, those lifetime maximums that you've selected "apply increase rates to lifetime maximum" or "apply increase rates to outstanding balance" will appear.



Clicking on a **Lifetime Maximum** will bring up the increase rates screen, allowing you to enter a constant, variable (from library), or variable increase rate. +.01/-.01 trend sensitivities will be applicable at your option.



APBO Attribution

OPEB mode has several new APBO/PUC attribution options designed to address the following situations:

- Attributing non-trivial accruals after first eligibility.

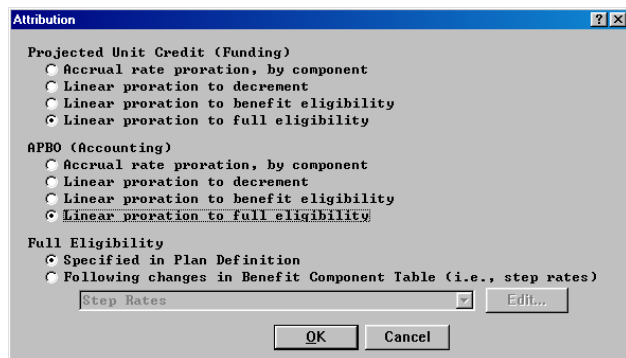
Example: A “front loaded” life insurance benefit that provides \$25,000 for each year of service up to 10 years and \$5,000 for each year of service from 10 to 20 years.

- Multiple full eligibility dates in step-rate formulas

Example: Full eligibility dates that follow changes in a benefit percentage that increases with service (e.g., 50%, 75%, 100%) or a contribution percentage which decreases with service (e.g., 60%, 30%, 10%).

Each **Benefit Definition** you create for actives may use one of the following attribution methods (also known as proration) to determine APBO/PUC liabilities and normal costs:

- Accrual rate proration, by component.
- Linear proration to decrement.
- Linear proration to benefit eligibility.
- Linear proration to full eligibility. This is the **default** in OPEB mode.



Under **accrual rate proration**, proration is applied separately to each Benefit Formula Component found in the benefit formula.

Under **linear proration to decrement**, the benefit is prorated evenly over the period from commencement of service under the attribution service field definition (specified by the Projected Unit Credit Attribution Service Field parameter in

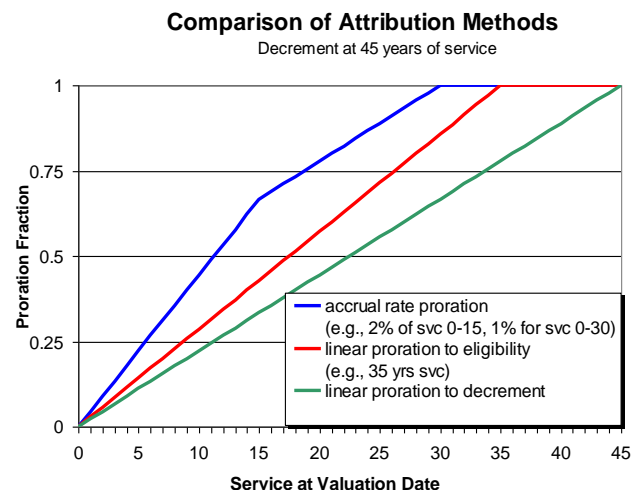
the Plan Attributes dialog box) to assumed decrement.

Under **linear proration to benefit eligibility** (i.e., to first eligibility), the benefit is prorated evenly over the period from commencement of service (specified under the benefit’s Active Eligibility screen) until the earlier of assumed decrement or first eligibility.

Under **linear proration to full eligibility**, the benefit is prorated evenly over the period from commencement of full eligibility service until the earlier of assumed decrement or full eligibility.

Full eligibility may be defined in two ways:

- In the Plan Definition > Plan Attributes topic. This defines full eligibility as a single date (e.g., the earlier of 65/5 and 55/10). Full eligibility service is defined as a starting date (e.g., the later of hire date and age 45) or as service as of the valuation date (e.g., 10 years).
- **Following changes in a benefit component table (i.e., step rates)**. This defines full eligibility every time the rate changes (between decrement ages) for a participant. Full eligibility service is defined using hire age as specified in Census Specifications (i.e., the service used to look up values in the table).



For calculation details, please read the Technical Reference article in ProVal’s Help entitled “PUC and UC Attribution”.

XML

ProVal data can now be saved in XML format. This article explains what XML is and how to generate XML files.

What is XML?

XML, or eXtensible Markup Language, provides a way for describing structured data in a text file. Unlike plain text files of the past, XML files contain both data and tags that describe the data (e.g., `<totalPvfb>`, `<totalPbo>`, etc.). For instance, XML from a valuation set might look like:

```
<totalPvfb>14515972.87</totalPvfb>
<totalPvfbAcctg>14918928.78</totalPvfbAcctg>
<totalLiabObra>8958650.327</totalLiabObra>
<totalPbo>9745317.563</totalPbo>
<totalAbo>7921937.118</totalAbo>
```

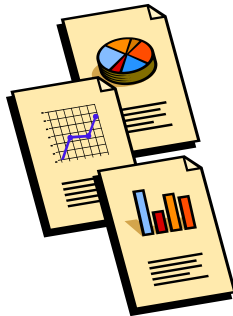
A schema (see PROVAL.XSD in the ProVal directory) accompanies this data to describe and validate its structure. For example, the schema specifies that `<totalPvfb>` appears in numeric format.

Why support XML in ProVal?

The nature of ProVal data is that it is not an end in itself. Rather, it is usually a stepping stone to something else, whether it be government forms (e.g., Form 5500 Schedule B), actuarial reports, historical records (e.g., 5-year history of contributions), surveys (e.g., FAS87 discount rates across clients by industry), internet tools (e.g., data collection for valuations), or other systems which haven't even been dreamt of yet. What's more, ProVal's data does not usually represent the complete picture. Additional information (e.g., industry codes) needs to be collected to support all of the activities listed above.

So, ProVal needs to share its data. Before supporting XML, ProVal's plain text files were readable by other systems but required additional programming effort to find what you were looking for. What's more, much of ProVal's output changes with each new release, compounding the problem of finding what you're looking for.

XML is the format of choice when sharing data. It is an open format, so others can easily access and extract information. And, as shown above, the presence of tags makes it easy to find what you're



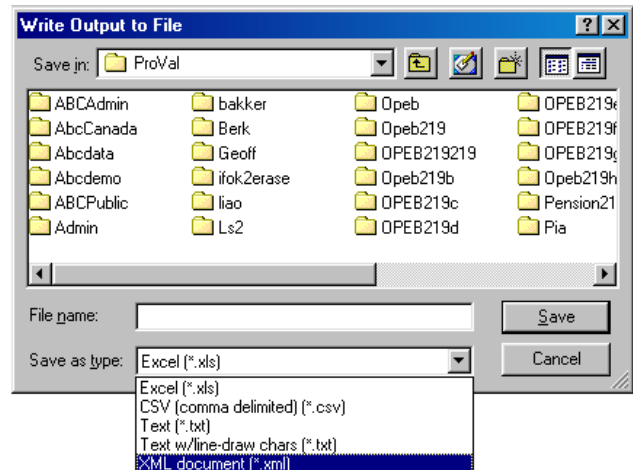
looking for. It also has widespread support, including Microsoft Office XP, Oracle, Sybase, Microsoft Sequel Server, and IBM's DB2.

And XML is more than just data and tags. It also includes schemas and XSL that provide easy ways to validate and translate XML. This means that if ProVal chooses to tag data in one way, and your system tags it in another way, everything still works.

How To

To save a run in XML format, simply view it (from the Execute menu) and save it as XML. For example, you might:

- View a valuation set and click **File**.
- Provide a file name, choose "XML document" as the type, and click **Save**.



While the XML option is only available for Execute commands, this does not preclude saving Valuation Assumptions or other inputs to XML. On the contrary, saving to XML automatically includes all referenced inputs. For example, the XML file for a valuation set will include the Asset & Funding Policy, Plan Definition, Benefit Definitions, Valuation Assumptions, etc.

Saving to XML also automatically includes all of the output. So, unlike on the output menu, there is no need to select which output items to export.

Rounding

For valuation sets, deterministic forecasts, and stochastic forecasts, the specifications for rounding (none, \$1, \$100, \$1,000) can now be set in Asset & Funding Policies. This ensures that all XML output will be rounded consistent with ProVal's exhibits.