What's New! ProVal®

ProVal version 2.29 February 2009

ProVal version 2.29 introduces a **report writer** for generating fully customizable actuarial reports. It also adds the ability to **value inactive participants like active participants**, specify separate **COLA assumptions for each benefit,** and save **individual results for Gain / Loss Analysis**. You'll find details about these and other enhancements below.

Output & Reporting

- ProVal now includes a report writer to generate fully customizable valuation reports, executive summaries, etc. in Microsoft Word based on ProVal results and other supplemental data.

  See Report Writer, page 4

Pension Plans

- ProVal now allows inactive participants to be run like active participants. This allows inactives to reference lump sum factors, retirement rates, early retirement factors, and optional forms with probabilities of receipt.

  See Valuing Inactives like Actives, page 7

- Separate COLA assumptions can now be specified for each benefit, for both actives and inactives.

U.S. Qualified Pension Plans

- A new Asset & Funding Policy option specifies whether the controlled group is the same as the valuation population. This allows plans to switch between being subject to the At-Risk rules depending on population size.
- Under PPA, a new checkbox allows plans to not waive any credit balances to avoid benefit restrictions. This is useful for frozen plans that do not pay lump sums and collectively bargained plans where the effective date of this provision is delayed.

Canadian Pension Plans

- ProVal now allows separate COLA assumptions for the going concern, solvency transfer value, and the solvency annuity purchase liabilities.
- Lump sum factors can now use the liability interest rate and mortality for solvency. This new feature, together with the COLA assumption enhancements, allows you to specify different interest, mortality and COLA assumptions for the solvency liability (separately for annuity purchase and transfer value) versus the ongoing liability, and to set up a lump sum factor that changes its interest, mortality and COLA assumptions to match the liability in which it is being used.
- In custom operators, the #SALARY and #FAS operators can now limit salary by the YMPE.
- A new Asset & Funding Policy option specifies whether or not the plan maintains a prior year credit balance.
- Now, when running sample lives, you only need to check one solvency liability box and the transfer value, immediate annuity purchase and deferred annuity purchase results, if applicable, will display. In addition, there are now separate solvency liability sample life reports available for active benefits, post-decrement benefits and emerging inactive liabilities in a core projection.

OPEB Plans

- Life expectancy for actives and emerging inactives is now available as an output item. This is useful for statutory valuations (SSAP 14), where amortization periods are to reflect the

life expectancy of all participants.

- Pre/post-commencement mortality tables now work in OPEB mode by assuming the pre-commencement rates apply to actives and the post-commencement rates apply to inactives (and actives after decrement).

All Plans

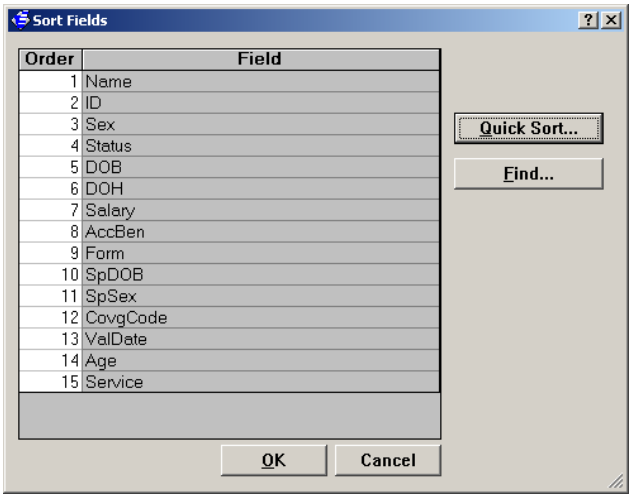
- Increase Rates on benefit formula components and accrual basis components can now vary by coded database field. For example, you might have tables that represent medical costs for various groups that form a single benefit formula component. If there are also different trend rates for different groups, you no longer have to use separate components.
- IAS 19 has been updated to reflect regulatory changes since 1998. The asset ceiling amendment is now reflected, as is the option to amortize gains and losses immediately in SORIE (the "FRS17 option").
- Post-decrement probabilities can now vary by coded field or calendar year. This is useful for reflecting optional forms.
- It is now harder to forget to apply data defaults in your census specifications.
  - The "apply data defaults" checkbox defaults to being checked.
  - A warning message lets you know if data defaults are specified, but not applied.
- Overrides (e.g., from a Valuation Set or Deterministic Forecast) can now be removed by unchecking all the runs and clicking OK rather than having to use the Erase button. Also, the "Erase" button has been renamed "Remove."
- Projected benefit payments in a core projection are now available in all modes and for all law types, for both funding and accounting liabilities. These benefit payments can be turned off to decrease processing time and storage requirements. In a U.S. Qualified PPA valuation, projected benefits are now available on a max-tax basis in addition to a target liability basis and on a normal cost basis in addition to an accrued liability basis.

Forecasting

- In Stochastic Assumptions, the Treasury or Corporate Benchmark yield can now be used as the basis for the lump sum benchmark yield.

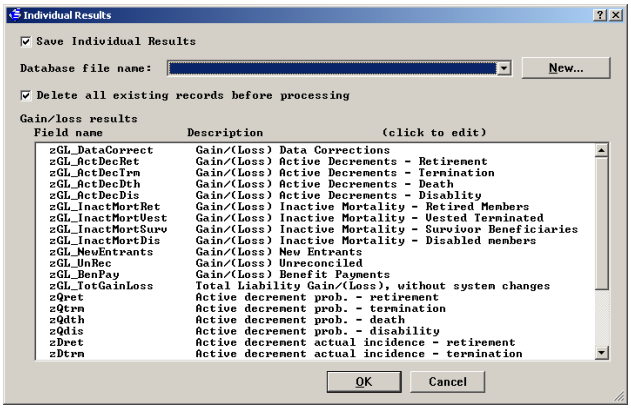
Census Data

- When opening a database, ProVal now displays the date last modified in the list of database files. This makes it easy, for example, to sort the list chronologically to find the database you were working on most recently.
- The Expression Set sample life display now includes the standard header information at the top.
- It is now easier to find a given field in Spreadsheet Edit.
  - There is a new "quick sort" button on the "sort fields" command that lets you sort fields alphabetically or in the order they were imported.
  - There is a new "find field" button in the "sort fields" command
  - There is a new "go to field" command on the Edit menu.
  - The Find and Sort Records commands now display the list of fields alphabetically.



Gain/Loss Analysis

- Individual results can now be saved when running gain / loss analysis. The results include gain/(loss) amounts and explanatory values such as assumed and actual decrements, mortality, and benefit payments. This makes it easy to identify participants with large gain/loss amounts, unreconciled amounts, benefit payment gain/(loss), etc.

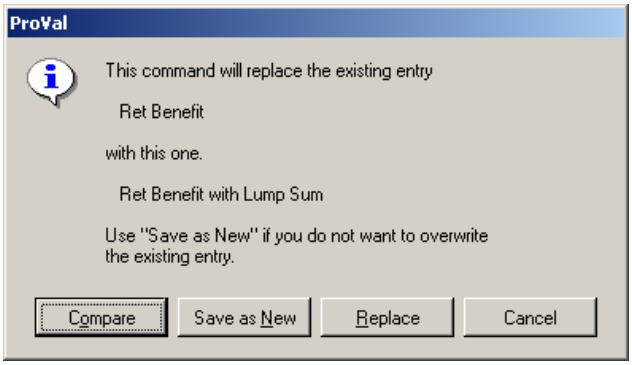


Multiemployer Pension Plans

- Multiemployer plans are now allowed to maintain an accumulated funding deficiency.

System

- When copying from (or pasting to) ProVal spreadsheets such as reference tables, accrual rates, or increase rate tables, ProVal now assumes numbers on the Windows clipboard are (to be) formatted using the numeric format specified in Windows Regional Settings (e.g., "1.234,56" vs. "1,234.56"). This makes it possible, for example, to copy and paste values between Excel and ProVal for locations with different formats than "English (United States)."
- When replacing an object and ProVal prompts you to confirm (because both the name and some parameters changed), you can now compare the old and new object before deciding between Replace and Save as New.



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.

New Member of the WinTech Team

Maia Lustgarten recently joined the WinTech team. She is an experienced consulting actuary and, among other responsibilities, will be working on ProVal enhancements. Be sure to say hello to her if you reach her at ProVal support.

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 **Hank Freeman** at (203) 861-5526 for details or to request a quote.

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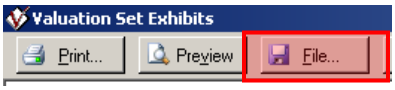
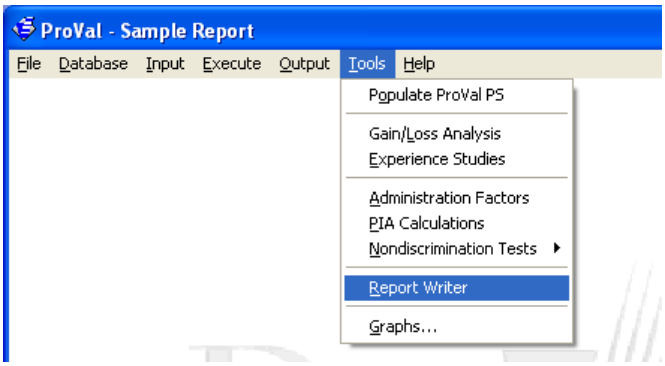
Report Writer

ProVal now includes an integrated Report Writer, designed to facilitate the publishing of valuation reports, executive summaries, disclosure letters, etc. from ProVal results and other supplemental data. Below is a brief overview of how to use the Report Writer. For more information, see the Report Writer article in ProVal's help.

The first step in using the Report Writer is to save ProVal results to an Access database (one database per client). You can save ProVal results to Access for Valuation Sets (when viewing exhibits), Deterministic Forecasts (when viewing exhibits), Gain / Loss Analysis, and Descriptive Statistics by clicking the File button and choosing "Access Database (*.mdb)" as the type.



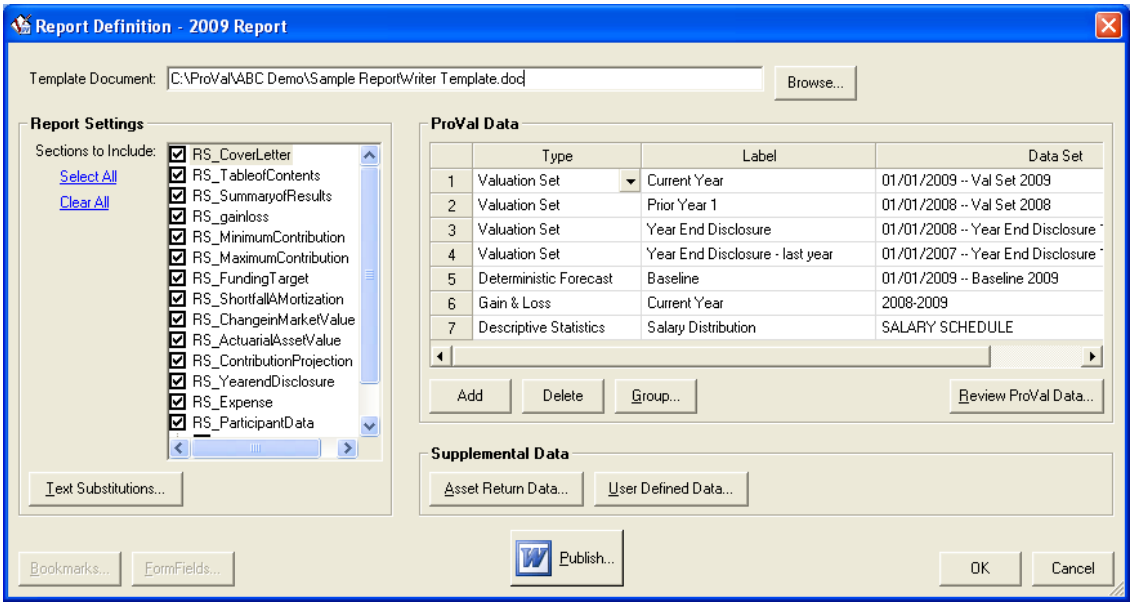
After saving ProVal results to Access, you start the Report Writer from the Tools menu.



Then, you set up a Report Definition for each report you want to produce.

Report Definitions

Each Report Definition contains everything necessary to generate a report such as a Valuation Report or Disclosure letter in Microsoft Word.

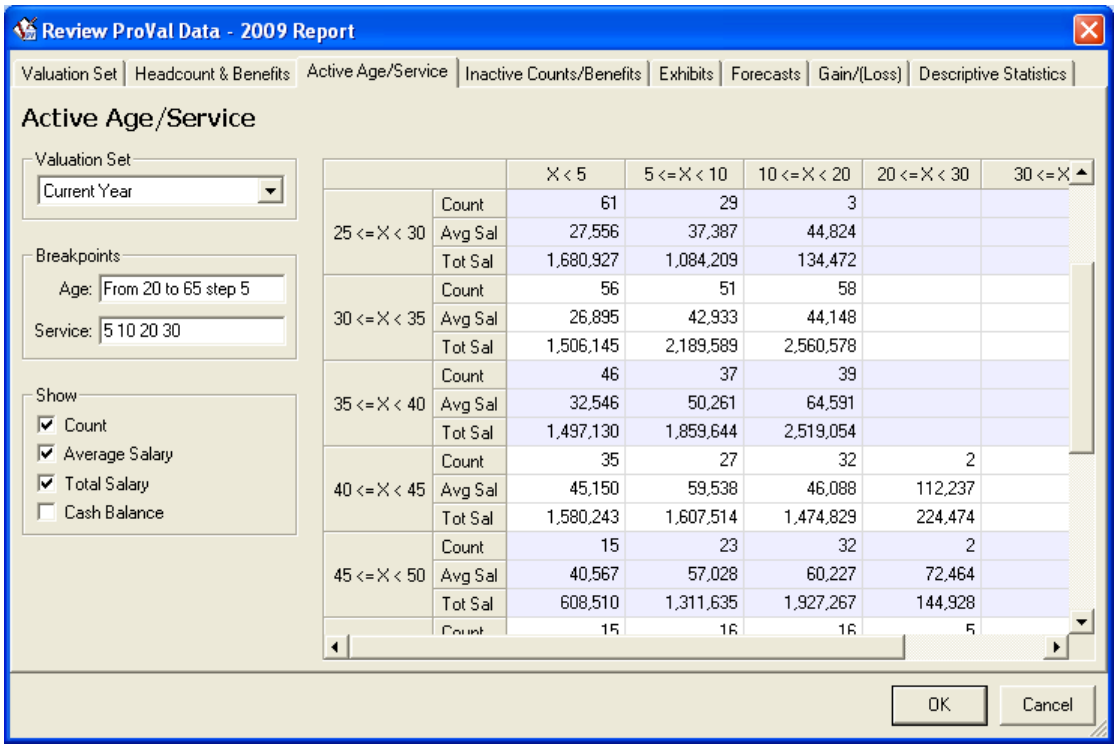


- The **Template Document** is a Word document which has been previously prepared with placeholders to indicate where data should be inserted and text manipulated. The report will be generated based on this template. (Template documents are generally authored by a single person in your organization.)

- The **Report Settings** section allows you to manipulate blocks of text within the template document. You may exclude certain **sections** of the template document, or **substitute** your own content from other Word documents. For example, the template may have a generic plan provisions section which will be substituted with content from another document with the client-specific plan provisions.

- The **ProVal Data** section specifies which data sets (ProVal results), as stored in the Access database, are relevant to this report. You may include any number or combinations of Valuation Sets, Gain & Loss Analysis, Deterministic Forecasts, and Descriptive Statistics. Each data set is assigned a label which corresponds to placeholders in the template document.

  Review ProVal Data lets you glance at the results that will be merged into the report to make sure you have the correct results. Only results for data sets you've selected as part of the Report Definition are displayed. You can also compare Valuation Set results from the most recent two years. This is a powerful way to catch mistakes before they get into the report. If desired, you can also override values for data sets where "allow overrides" is selected (using the Database Maintenance feature).



		X < 5	5 <= X < 10	10 <= X < 20	20 <= X < 30	30 <= X
25 <= X < 30	Count	61	29	3		
	Avg Sal	27,556	37,387	44,824		
	Tot Sal	1,680,927	1,084,209	134,472		
30 <= X < 35	Count	56	51	58		
	Avg Sal	26,895	42,933	44,148		
	Tot Sal	1,506,145	2,189,589	2,560,578		
35 <= X < 40	Count	46	37	39		
	Avg Sal	32,546	50,261	64,591		
	Tot Sal	1,497,130	1,859,644	2,519,054		
40 <= X < 45	Count	35	27	32	2	
	Avg Sal	45,150	59,538	46,088	112,237	
	Tot Sal	1,580,243	1,607,514	1,474,829	224,474	
45 <= X < 50	Count	15	23	32	2	
	Avg Sal	40,567	57,028	60,227	72,464	
	Tot Sal	608,510	1,311,635	1,927,267	144,928	
	Count	15	16	16	5	

- **Supplemental Data** lets you enter Asset Return Data and User Defined Data, if used by the template. **Asset Return Data** consists of historical returns for the plan's market value of assets, actuarial value of assets, and any number of asset classes (e.g., "Equities", "Fixed Income", "Other", etc.). **User Defined Data** can have as many data items as you wish, organized into Categories (e.g., Actuary's Information, Client Information, Reconciliation of Assets, etc.).

Publish

Once you have completed the Report Definition, you press the **Publish** button. The end result is a new Microsoft Word document, generated by merging the data stored in the Access database into the template document (the original template remains untouched). If you are happy with the new document, you can save it, print it, etc. using Microsoft Word. You should refrain from editing the published document since changes will have to be redone if you publish the document again. Instead, changes should be made in ProVal, the Report Writer, or in some cases, the template document.

Sample Report Writer Files

For your reference, the following sample files are provided in the ProVal installation folder:

- Access Database: “Sample ReportWriter Database.mdb”
- Template Document: “Sample ReportWriter Actuarial Assumptions.doc”
- Text Substitution documents: “Sample ReportWriter Funding Methods.doc”, “Sample ReportWriter Plan Provisions.doc”, and “Sample ReportWriter Template.doc”

Transition from 2.28 to 2.29

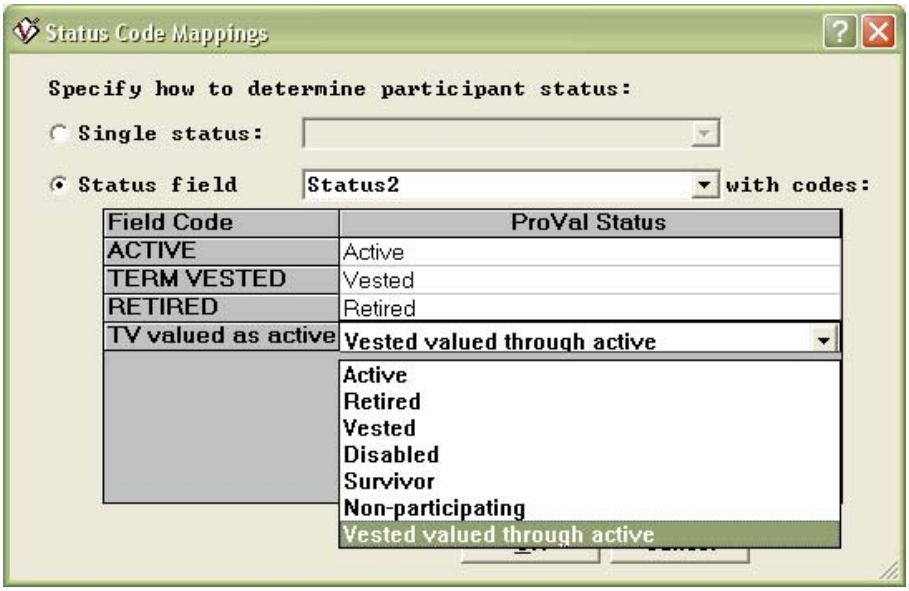
As part of the Report Writer project, we have made a number of improvements/changes to the layout of ProVal data in Access. These include:

1. Deterministic Forecast Exhibits are now written to tables with names which begin with ProVal_DetProj_... Previously, you were not able to write Valuation Set Exhibits and Deterministic Forecast Exhibits to the same Access file because of table name collisions.
2. Deterministic Forecast Exhibit tables now store the projection year in a field named Year. Previously, each projection year was stored in a separate field. This is a much more efficient method to store this data.
3. All ProVal results tables now include a sequence number (SeqNum) field.
4. Microsoft Access limits the number of indexes on a single Access table to 32. ProVal results written to Access are linked to control tables based on the data set type. For example, Valuation Set results are linked to the table ProVal_ValSet_Params. To have the Report Writer avoid the Access index limit, we have created a subclass table for each control table. If the Report Writer believes the index limit is close, it will create another control table and link them (i.e., ProVal_ValSet_Params2).
5. Descriptive Statistics may now be written to Access. However, this data is stored in a format which only can be interpreted by the Report Writer.

Valuing Inactives like Actives

ProVal now allows inactive participants to be run like active participants. This allows inactives to reference lump sum factors, retirement rates, early retirement factors, and optional forms with probabilities of receipt.

To utilize this feature, you simply set the ProVal Status Code (under Census Specifications > Status Code Mappings) for the desired participants to be "Vested valued through active." If you do not want to value all current vested terminations in this way, you can use the Census Specifications > Data Defaults to define a valuation status code that only maps the desired participants into a new special status code.



Participants valued using the "Vested valued through active" ProVal status code will be evaluated with the active Benefit Definitions and Valuation Assumptions, but then all of their output will be saved as Vested Terminated Output. Thus, they will not distort such things as the active age/service scatter, the valuation salary, valuation number, normal cost, active liabilities, etc. This will, for example, make it easier to use ProVal's Report Writer to create your valuation report, since all of the liabilities will be in the correct "bucket." While the results are not stored with the actives or by benefit, you can examine the calculations through the active benefits using sample lives.

Data Defaults

Since the "vested valued through active" participants are valued as actives, they will need to have valid values for the fields specified under the Census Specifications > Active Data. If date of hire and the referenced salary fields, for example, are missing for these participants, you will typically use the Data Defaults to specify them. Note that there is no problem if, for any reason, you want to calculate benefits by referencing the Valuation Salary Definition; ProVal will use the information for the benefit calculations but will then "throw it away" before determining the active valuation salary, total salary and present value of future salary.

Benefit Definitions

Similarly to any other active participant, ProVal will determine the appropriate Benefit Definitions for these participants by evaluating the Eligibility Requirements. If you wish to value these participants in the same Valuation as all other participants, then you will typically use the Selection Expression option of each Benefit Definition to either specifically select or specifically de-select these participants. Alternatively, you may run a separate valuation for just these participants referencing only the applicable Benefit Definitions. While it is possible, it is unlikely that the vested valued through active participants will share any Benefit Definitions with the active participants.

Typically you will need at least two and possibly three Benefit Definitions for the vested valued through active participants:

- One Benefit Definition will be for the retirement benefit.
- Another will be for any death benefit payable should the participant die prior to retirement. When these participants are valued under the inactive vested terminated status code, this death benefit is typically coded using a REA payment form. When they are valued through the actives, however, the payment form for the beneficiary would be a life annuity which ProVal will automatically use the beneficiary age and mortality to evaluate.
- If any vested liabilities are being calculated, you will also have to create a vested termination benefit. ProVal will use this Benefit Definition to determine the liabilities for any participant who has not met the retirement eligibility criteria at the valuation date. Since the termination rates are always 0, no regular liability will be calculated from this Benefit Definition.

Note that ProVal bases annuity factors for inactive participants on the participant's nearest age. For active participants (and consequently, for vested participants valued through active), first retirement eligibility is based on attained age. Therefore in order to obtain results for vested participants valued through active which are consistent with those valued as inactive, it may be necessary to adjust the earliest retirement age by ½ year when beginning of year decrements are used.

One final note about Benefit Definitions is that you will typically want to specify that the maximum benefit limit should *not* be applied. If you do not make this specification and then you default the valuation salary to $0 (or service to 0 in Canadian mode), you may get a $0 benefit because a $0 maximum benefit is applied.

Mortality Assumptions

Since the "vested valued through active" participants are treated as any other actives for valuation assumption purposes, they will be subject to the specified active mortality while they are active and then the retired mortality assumption when they are ultimately assumed to retire. If your mortality assumption varies by status code and you want these participants to be subject to the mortality for vested terminateds for the valuation, you can either (1) run them in a separate valuation where all mortality assumptions are set to the vested terminated mortality, or (2) set your mortality assumptions to vary by coded field and specify the active mortality and the retired mortality for these participants to be your vested terminated mortality assumption.

Decrement Assumptions

ProVal expects that the only decrements applicable to the "vested valued through active" status code are active mortality and retirement. Accordingly, if such a participant is found to have non-zero disability or vested termination rates, ProVal will zero them out and produce a warning message.

Liability Calculations

Since the liabilities for participants with the "vested valued through active" status code become vested terminated liabilities, they cannot have a normal cost. (ProVal does not have a provision for inactive participants to have a normal cost.) Accordingly, when ProVal values the individual active liability methods (projected unit credit, unit credit and entry age normal), the liability for these participants is set equal to the present value of future benefits (based on appropriate assumptions) rather than any attributed benefit. Normally the benefit for these participants would be expected to be a frozen accrued normal retirement benefit stored on the database multiplied by an early retirement reduction factor and/or a lump sum factor; in this case, the projected unit credit and unit credit methods would not generate a normal cost in any case, but the entry age normal methods would.

In the case of Canadian solvency liabilities, no special adjustment to the liability is made. ProVal simply calculates the solvency liability in accordance with the user's parameterization and then zero's out the solvency normal cost. Note, however, that special consideration is required if annuity purchase liabilities are calculated.

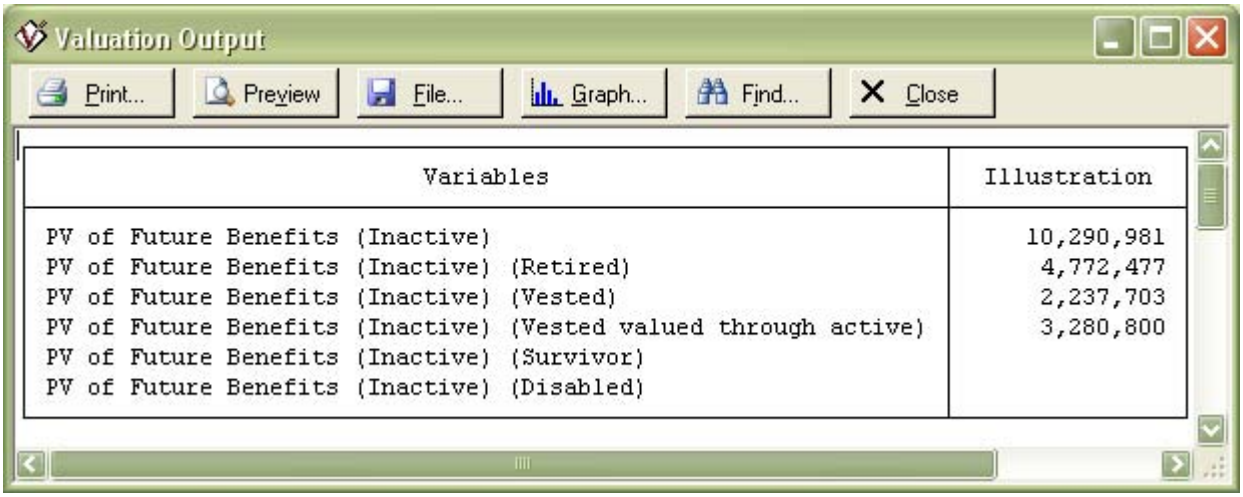
ProVal will determine which "vested valued through active" participants should be valued with what annuity purchase rate based on the criteria for active participants, which is specified as an age/service/points eligibility condition. If you want the determination for the vested valued through active to be based on the inactive parameterization (which is specified as an age only), and that eligibility differs from the active eligibility, then a separate run for the "vested valued through active" will probably be required.

In addition to not generating a normal cost, these participants cannot have employee contributions. If they are valued with an employee contribution "benefit," ProVal will zero-out the employee contributions and issue a warning.

In the case of PPA liabilities, although all liabilities are valued (as seen in a sample life report), only the not-at-risk liability is saved in final output because ProVal does not currently have a provision for distinct at-risk and not-at-risk liabilities for inactives. This will likely be changed in ProVal version 2.30 however, especially if the IRS indicates that vested terminated participants should be valued based on the most valuable optional form for at-risk purposes.

Output

The output for "vested valued through active" participants is stored with the inactive output. You can see the total liability for these participants by choosing to view your Valuation or Core Projection inactive output by status code, as illustrated below. The detail by Benefit Definition is not available, although these detailed results may be viewed in the Sample Lives. The detail for vested valued through active is also not available in Valuation Set or Deterministic Forecast output where these participants are simply included in the Vested category.



Variables	Illustration
PV of Future Benefits (Inactive)	10,290,981
PV of Future Benefits (Inactive) (Retired)	4,772,477
PV of Future Benefits (Inactive) (Vested)	2,237,703
PV of Future Benefits (Inactive) (Vested valued through active)	3,280,800
PV of Future Benefits (Inactive) (Survivor)	
PV of Future Benefits (Inactive) (Disabled)	

Gain / Loss Analysis

If some participants are valued using the "vested valued through active" ProVal status code, their liability gain or loss will be included with the active decrements gain/loss. However, in the "status reconciliation for gain/loss", these participants will be identified as Vested, consistent with the valuation results status counts.

Nondiscrimination Tests > Accrual Rates

Any participants valued using the "vested valued through active" ProVal status code are considered inactives for purposes of the calculation of accrual rates for nondiscrimination testing. Thus, they are excluded from the test and will not have records on the individual results database file that is the output of the test.

Data Screening

ProVal's Screen Data library will apply the active data tests to any participants parameterized through the referenced Census Specifications with the ProVal status code "vested valued through active." It will also recognize the vested valued through active status code in the Status Changes topic and suggest appropriate "illogical status changes" for it. Custom Tests will need to be parameterized by the user, however, to check what is in real life inactive data. For example, since the inactive test "same status, annual benefit amount changed" will not apply to these participants, the user can define a custom test to determine whether the participant's normal retirement benefit has changed.

Outstanding Issues

Generally speaking, the "vested valued through active" calculations were designed such that if the same benefits, valuation assumptions and commencement assumptions were used to value specified vested terminated participants either through the inactive vested terminated status code or through the vested valued through active ProVal status code, the valuation output would be identical. One place where this objective could not currently be met is the inactive life expectancy calculation, since the active valuation does not currently calculate life expectancy in pension modes. We hope to have this discrepancy resolved by ProVal version 2.30 by adding the life expectancy calculation for actives and emerging inactives in pension modes.

Another small discrepancy can arise during a forecast when ad hoc COLAs are valued only for participants in pay status. This is because the division of the liability between pay status and deferral status is slightly different for these participants when they are valued through actives versus as inactives.

A final issue, touched on above, is PPA liabilities. If the IRS indicates that vested terminated participants should be valued with the most valuable payment form for at-risk purposes (or if it remains ambiguous), we will add another "output slot" for inactive participants to permit a different inactive liability for PPA at-risk versus not-at-risk liabilities. In this case, one way to generate a different at-risk liability will be to use this new "vested valued through active" ProVal status code.

Valuation Output: Annuities Deferred

There are some other situations where the "vested valued through active" calculations will not be able to produce the same output regarding Annuities in Receipt/Deferred and Inforce as if those vested were valued in the traditional manner. Typically these are situations that most users would not choose to code. For example, if the participants are assumed to decrement with a deferred payment form (i.e., with no expected benefit payments in the year of decrement), the value of "annuities deferred" will not be captured during a valuation because the valuation only has "expected benefit payments" available and these are $0 for deferred annuities. A core projection calculates more information about decrementing actives, however, and will have a more reasonable value for "annuities deferred."