

### Census Data

- ◆ **Historical fields.** In the data editor, you can now view historical fields (i.e., fields from other databases) alongside current year fields by clicking the Historical Data button (on either Home or View tab). Historical fields are shown with a prefix, e.g., "py." and are read-only to prevent accidental changes.

The screenshot shows the ProVal - Data2020 application window. The ribbon includes tabs for File, Home, View, Screen, and Review. The Home tab is active, showing various data manipulation tools. The 'Historical Data' button in the 'Fields' group is highlighted with a yellow box. Below the ribbon, a data table is displayed with columns: RecID, Name, ID, Sex, DOB, py.DOB, DOH, py.DOH, Salary, and py.Salary. The columns py.DOB, py.DOH, and py.Salary are highlighted with yellow boxes. The table contains five rows of data for individuals like GEORGE WASH, ALADDIN GENI, COUNT DRACU, CINDERELLA C, and SNOW WHITE.

RecID	Name	ID	Sex	DOB	py.DOB	DOH	py.DOH	Salary	py.Salary
1	GEORGE WASH	XXX-XX-4069	Male	8/04/1988	8/04/1988	8/15/2009	8/15/2009	44,784.82	44,784.82
2	ALADDIN GENI	XXX-XX-5871	Female	8/16/1978	8/16/1978	5/24/2010	5/24/2010	42,839.83	42,839.83
3	COUNT DRACU	XXX-XX-6620	Female	6/09/1973	6/09/1973	9/23/1998	9/23/1998	43,312.96	43,312.96
4	CINDERELLA C	XXX-XX-4442	Female	4/09/1975	4/09/1975	10/01/2005	10/01/2005	44,952.55	44,952.55
5	SNOW WHITE	YYY-YY-1102	Female	1/01/1987	1/01/1987	5/22/2010	5/22/2010	42,246.70	42,246.70

Displaying historical fields can be an easy and powerful way to review data changes from one year to the next. It can also be useful when reviewing individual results, such as for gain/loss analysis, if you wish to quickly reference data or results from the beginning of period or end of period valuations.

Historical fields can be used for most things that current year fields can, including selection expressions ("status <> py.status"), finding records that match a criterion (py.salary less than 3000), sorting records, and copying data values to the clipboard. Historical fields initially appear next the current field of the same name, but you can reorder them as well as control which are hidden/unhidden. These customizations can be saved as part of a Spreadsheet Edit style for later reuse.

### Interface

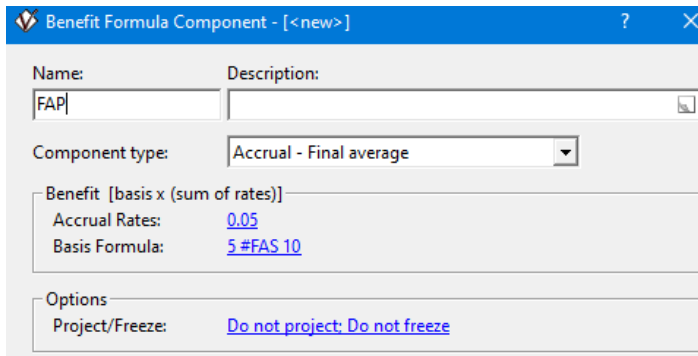
- ◆ **Quick search** has been added to many lists, including where you select Individual Results, Stochastic Trial Detail Variables, Add/Omit Valuations in a Valuation Set, and more. This lets you quickly look for specific items in long lists.

The screenshot shows the 'Add/Omit Valuations' dialog box. It has a section 'Select items to include:' with a table listing items. A search filter '2020 new' is entered in a text box at the bottom, highlighted with a yellow box. The table lists items with checkboxes, names, tags, valuation dates, and modified dates.

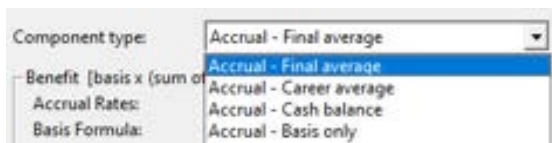
	Name	Tag	Val Date	Modified
<input type="checkbox"/>	F A 1/1/2020 - new plan, new assumptions		1/01/2017	9/21/2020 10:48 AM
<input type="checkbox"/>	F A 1/1/2020 - new plan, old assumptions		1/01/2017	9/21/2020 10:48 AM

◆ **Flatter Benefit Formula Components.**

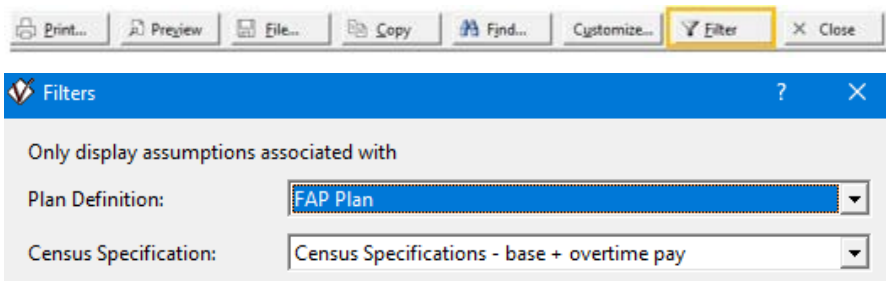
- Links now display summary information that previously could only be seen by clicking into another screen. For instance, you can see at a glance that the component below represents 5% of final average pay per year of service.



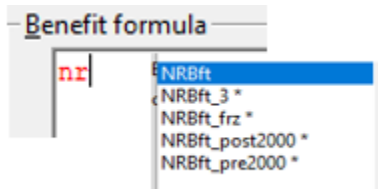
- There are now separate component types for Final Average, Career Average, Cash Balance, and Basis Only. This removes the unnecessary and unintuitive step of having to first choose “accrual definition” before choosing the accrual format.



- ◆ **Assumptions filter.** You can now apply a plan filter when viewing/comparing assumptions so only relevant benefits and components are displayed. This applies to election percentages, lump sum assumptions, and more. If you view assumptions from within a run (e.g., valuation), the relevant filter will be applied automatically. Otherwise, you can set it using the Filter button.



- ◆ **Increase rate assumptions.** More detail is displayed in the rate columns of the Increase & Crediting topic of Valuation and Projection Assumptions.
  - If rates are specified by a table, now the table name is displayed.
  - If rates vary by year, now the first two and last two rates are shown.
- ◆ **Scaling factor grids.** The scaling factor interface has been revamped to consolidate all factors into a grid. This makes it easier review all your factors at once as well as to paste in factors calculated in Excel. In addition, in US Public Pension mode, scaling factors can now vary by group (also requires the associated Asset & Funding Policy to vary by group).
- ◆ **Intellisense** has been improved for hidden components and database fields.
  - Hidden components and database fields will now appear in the choice lists with an asterisk:



- When using F1 help, database fields that exist in the current database will now be listed separately from all other fields contained within the data dictionary (previously, all unhidden fields were listed together, and those in the current database were identified with an asterisk).
- ◆ A “columns” button has been added to the ribbon in Valuation and Core Projection libraries that allows you to customize the display.

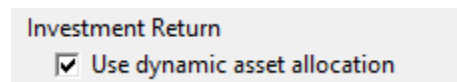


- ◆ **Shortcut Keys.**
  - Shortcut keys have been added to Frames. For example, now in a Valuation library entry, you can jump to the first parameter within a frame.
  - In the Valuation & Core Projection libraries, shortcut keys have been added to each item within the Options section.
  - ProVal now supports the menu key (or Shift+F10) as a keyboard alternative to right-click.
- ◆ In Spreadsheet Edit and Viewer trees and buttons, the Segoe UI font is now used instead of the System font. This allows for finer zoom% and also gives a consistent look with the rest of the interface.

## Forecasting

- ◆ **Custom capital market simulations** now support two custom full yield curves and two benchmark yields. In Canadian mode, if you have a simulator outside of ProVal that produces the transfer value and annuity purchase interest rates to be used to measure liabilities, you can now import those rates to be used directly by ProVal. One custom yield curve can hold the short and long term interest rates for the transfer value portion of solvency liability and the other for the windup liability. The two corresponding custom benchmark yields can be used to import the annuity purchase interest rates for solvency and windup, respectively.
- ◆ **Dynamic Asset Allocation** is now supported for Deterministic Forecasts. Dynamic asset allocation allows you to change the investment return rates based on the funded status of the plan. In other words, if the asset allocation of the plan follows a glide path, the asset mix (and therefore expected investment returns) may change as the funded status of the plan changes.

To use dynamic asset allocation, you must first select that dynamic asset allocation applies on the Investment Return topic of the Deterministic Assumptions.



Then the Dynamic Asset Allocation topic becomes accessible. You must specify the liability and asset measures to be used to calculate the funded ratio as well as the break points at which the asset mix will change. In the example below, the asset mix is expected to change at funded ratios of 70%, 80%, 90%, 100%, and 110%. Each one of these ranges is assigned an asset mix and each asset mix is assigned an investment return. Note that the investment return for a given mix can vary by forecast year. This might be useful if for example, a glide path is not expected to be implemented for another year or two.

Dynamic Asset Allocation

Number of asset mixes:

Funded Ratio Definition

Liability:

Asset Value:  Market Value  Actuarial Value

Funded ratio breakpoints:

Mix map (enter Mix #):

Funded ratio	Mix #
0.0 <= x < 0.7	1
0.7 <= x < 0.8	2
0.8 <= x < 0.9	3
0.9 <= x < 1.0	4
1.0 <= x < 1.1	5
1.1 <= x	6

Investment Returns\*:

Year	Mix #1	Mix #2	Mix #3	Mix #4	Mix #5	Mix #6
1	0.08	0.075	0.07	0.065	0.06	0.055

- ◆ **Funding interest rate can vary by asset mix.** In Canadian and Public mode stochastic assumptions, the funding liability interest rate can now vary based on the asset mix.

Vary based on  times

- ◆ **Stochastic trial detail**
  - Now saves directly to Excel, with results for each mix saved in a separate sheet.
  - Defaults to all years, all mixes and all custom variables selected

## Canadian Registered Pension Plans

- ◆ **Windup Liability.** ProVal now calculates an explicit windup liability – previously the windup liability was assumed to be the same as the solvency liability. The Solvency Liability topics in Valuation Assumptions has now been renamed the Solvency & Windup Liability topics. The sub-topics for Transfer Value Liability and Annuity Purchase Liability are where you will continue to specify the solvency liability interest rates. The mortality specified on these topics will be used for both solvency and windup.
  - A new Windup Interest Rate topic has been added to the Valuation Assumptions. You can either specify that the windup interest rates are the same as the solvency interest rates, or you can directly enter the appropriate windup interest rates.

Windup Interest Rates

Same as Solvency

Transfer Value Interest Rate  
Variable by duration from valuation date

From	Up to	Rate
0	10	
10	-	

Immediate Annuity Purchase Rate

Deferred Annuity Purchase Rate

- The Cost-of-Living Adjustments (COLAs) topic has also been updated so that you can apply the COLAs to the windup liability only. If you select this new checkbox, the COLAs will be 0 when calculating the solvency liability.

COLAs only apply to the Windup Liability

- Now that there is an explicit windup liability, the maximum tax deductible contribution and accessible surplus calculations have been updated to reference the windup liability instead of the solvency liability.

◆ **Commuted Values.** The assumptions required to measure commuted values have changed effective December 1, 2020. ProVal has a number of new enhancements to facilitate the new rules including:

- Separate election probabilities for the solvency & windup liabilities
- Payment forms can now specify a payment age based on an age/service/points eligibility spreadsheet
- New checkboxes on the Benefit Definitions for Solvency & Windup valuations to facilitate calculating benefits at the earliest unreduced age and most valuable commencement ages

For more information, see [Canadian Commuted Values](#) on page 12.

◆ **British Columbia minimum required contributions.** ProVal now supports the British Columbia minimum required contribution calculations that changed effective for valuation dates on or after December 31, 2019. To reflect the 2019 Pension Reform, after selecting the Applicable Provincial Law on the Minimum Funding Amortization Bases topic of the Asset & Funding Policy, click on the Params button and check the box to apply the new law and enter the provision for adverse deviation for the current year.

British Columbia Additional Parameters

Apply 2019 Pension Reform

Provision for adverse deviations (PfAD):  %

◆ **Provisions for adverse deviations (PfAD)** can vary in a forecast for Ontario and British Columbia.

- Deterministic Forecasting - on the Future Valuation Interest Rates topic of Deterministic Assumptions, enter the PfAD to be used for each future forecast year.
- Stochastic Forecasting – the Stochastic Assumptions have a new topic, Provision for Adverse Deviations. Select which provincial law is applicable. If British Columbia is selected, there are no other parameters that are required. If Ontario is selected, you must also indicate if

the plan is open or closed as well as any adjustment to the going concern interest rate to determine the gross rate.

Provision for Adverse Deviations ? X

Include Provision for Adverse Deviations based on Ontario provincial law

The Plan is  Open  
 Open but will become closed in year   
 Closed

Gross going concern interest rate = Going concern interest rate +

- ◆ **Average entry age normal technique.** ProVal's average entry age normal technique (also known as the aggregate entry age normal method) has been extended from Universal mode to Canadian mode. Additionally, it now allows users to specify multiple records to determine the "average" entry age normal cost rate to be applied to all records. In addition, the gain/loss tool now calculates the gain/loss using the average entry age normal technique.
- ◆ A new parameter on the Contribution Policy topic of the Asset & Funding Policy allows contribution holidays to be shared with employees. This is useful in a forecast for asset projections and will stop experience employee contributions when the employer is on a contribution holiday.  
 Share contribution holidays with employees
- ◆ In Stochastic trial detail, the total normal cost is now available where total is defined as employer normal cost + employee normal cost + expenses. The normal cost currently available excludes the employee piece.

## US Qualified Pension Plans

- ◆ **SECURE Act.** The period over which new shortfall amortizations bases should be amortized is now a parameter on the Shortfall Amortization topic of the Asset & Funding Policy. This is useful for community newspaper plans which may amortize over 30 years.

Amortize new shortfall amortization bases over  years

- ◆ **CARES Act.** In case you missed it, an update to 3.14 added explicit support the CARES Act to allow you to:
  - use the AFTAP from 2019 for plan years that include calendar year 2020.
  - assume 2020 contributions will be deferred to December 31, 2020 with no late interest.For more, see [The CARES Act](#) on page 15.
- ◆ The Pre-MAP 21 EIR and FTAP are now displayed on the Pre-MAP 21 exhibit.

## US Public Pension Plans

- ◆ In Valuation Assumptions, the timing assumed for Employee Contributions can be set to the Timing for PVFS, PVFL, valuation salary and number with no further adjustment for middle of year decrements. This ensures that the ratio of the PVFS to the PVFEEC equals the employee contribution percentage.
- ◆ The GASB Accounting Balance Sheet exhibit in a Valuation Set now displays the future amortization payments required.

	Baseline Gain or Loss	EOY
5. Future recognition of deferred outflows and inflows for years beginning:		
January 1, 2021		3,632,956
January 1, 2022		3,632,956
January 1, 2023		3,632,956
January 1, 2024		3,632,956
January 1, 2025		(138,634)
Thereafter		(815,251)

## OPEB Plans

- ◆ **Limits and Spending Accounts.** The annual increase in balance for active participants can now be specified by a formula. This is useful for HRA plans.
- ◆ **Election probabilities.** Election probabilities specified by coded field and/or calendar year can now be entered as constants. This makes coding much more efficient as previously, if a constant was desired, a table had to be set up with the constant value.

## Pension Plans

- ◆ **Late retirement factors.** A new component type, Late retirement, adjust existing components for late retirements. It has the same value as the underlying component for all ages prior to or coincident with the normal retirement age. It compares the value of the component for ages after the normal retirement age to an actuarial adjusted value of the component at normal retirement age.

For more, see [Late Retirement](#) on page 19.

- ◆ **Lump sum factors** may now be referenced in a subformula.
- ◆ **Partial year inactive pension benefits.** For inactive participants that have a commencement date or temporary period based on a date or number of years, ProVal no longer rounds the period to the nearest whole year.
- ◆ **Payment form commencement age.** You can now specify the commencement age as the earliest age that meets an age/service/points criteria.

Benefit commences (and temporary period begins):

immediately  
 at member age   
 at member age defined by field   
 at earliest age that meets one of the following conditions

Age	Service	Points
62		
	30	
		80

- ◆ You may now save out individual results for the PVB and EBO liabilities by benefit for participants with a status of vested valued through active.



## Mortality Tables

- ◆ **Survivor mortality “Approach 2”** has been extended to OPEB mode. This allows survivor mortality to be applied only after the member death as defined by the Pub-2010 and Pri-2012 mortality reports published by the Society of Actuaries. This feature was added to pension modes in 3.14.
- ◆ **Club Vita.** In case you missed our 3.14 announcement, WinTech has integrated Club Vita’s suite of personalized longevity curves, known as VitaCurves, for use in ProVal.

For more information, see [Club Vita](#) on page 17.

## All Plans

- ◆ **Plan Constants** can now be referenced in the following locations:
  - Temporary coverage age or period for applicable payment forms
  - Certain age or period for applicable payment forms
  - Survivor percentage for applicable payment forms
  - Projection age and freeze age for accrual definition benefit formula components
  - Youngest and oldest recognized age for table benefit formula components
- ◆ **Automated sensitivities** in a Valuation have been redesigned to:
  - Allow asymmetrical sensitivities – this allows you to assume for example, a high interest rate sensitivity of +2% and a low interest rate sensitivity of -1%

	Low	High
Economic	<input type="text" value="-0.01"/>	<input type="text" value="0.02"/>

- Add mortality sensitivities – you can get mortality sensitivities by specifying a setback, an adjustment factor, or both.

Mortality:		
Male setback	<input type="text" value="1"/>	<input type="text" value="-1"/>
Female setback	<input type="text" value="1"/>	<input type="text" value="-1"/>
Male factor	<input type="text" value="1"/>	<input type="text" value="1"/>
Female factor	<input type="text" value="1"/>	<input type="text" value="1"/>

- Clarify that valuation sensitivities are run in aggregate and not separately for each sensitivity selected.
- ◆ **Improve handling of benefit payments when the measurement date is after the liability calculation date,**
  - A new option allows expected benefit payments to be rolled forward to the measurement date. Previously, this was only done when using the benefit payment roll forward method.

Roll forward expected benefit payments to the measurement date

- Fiscal year experience benefit payments are now automatically adjusted for timing by prorating the benefit payments from the two plan years the fiscal year overlaps. Previously, the plan year and fiscal year experience benefit payments were assumed to be the same. You can now separately override the first year experience for both plan year and fiscal year.



Override first year experience

Plan year benefit payments:

Fiscal year benefit payments:

◆ **Administrative expenses**

- Separate first year overrides of actual plan year and fiscal year administrative expenses can now be specified.

Plan year administrative expenses:

Fiscal year administrative expenses:

- A flat administrative expense assumption can be assumed in all forecast years. Currently flat dollar administrative expense assumptions increase with inflation each year.

Increase dollar expenses with inflation during a forecast

- The administrative expenses timing fraction can be reflected in the calculation of the accounting expense. Previously, when calculating the expected return on assets component of accounting expense, the timing fraction was always ignored.

Reflect fraction when calculating accounting expense

- ◆ **Individual Results.** Individual results of projected results can now be specified by duration from valuation date. This is useful, for example, if you always want the first 3 years of benefit payments following the valuation date. Previously, you would have to update the calendar years referenced annually.
- ◆ **Service definitions** now allow you to specify a cap on service. The cap may either be specified as a constant or by a database field. Service will not increase above the cap.

Apply a cap on service

Constant:

Field:

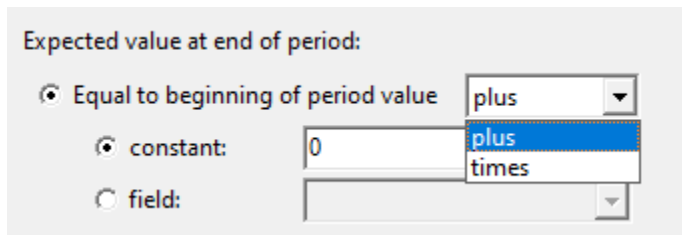
- ◆ A new contribution policy allows a contribution of the accounting service cost.

**Sample Lives**

- ◆ **Experience benefit payments.** In a Core Projection on each Benefit Definition report, we now show a separate table detailing the benefit amounts on an experience basis. This allows you to easily see the development of items like lump sum payments based on the experience assumptions. Additionally, benefit definitions sample life reports now vary by optional payment form and display benefit conversion factors previously displayed in the liability reports.

**Gain/Loss Analysis**

- ◆ **Continuing sources.** The expected value at end of period can now be determined as the beginning of period value adjusted by a constant or database field.



## Output & Reporting

- ◆ A Reset button when selecting Variables to view from a Valuation, Valuation Set, Core Projection, or Deterministic forecast will uncheck all selections.
- ◆ US-centric dollar formatting has been eliminated from exhibits.

## ProVal PS

- ◆ When ProVal PS is installed in a "Program Files (x86)" folder, user settings (e.g., provalps.ini) are now saved in the user's appdata folder. This avoids issues with ProVal PS obtaining write access to the "Program Files (x86)" folder, or alternatively relying on the presence of a compatibility (VirtualStore) folder. By default, if ProVal PS is installed to "Program Files (x86)\WinTech\ProValPS", then the user settings can be found in "C:\Users\USERNAME\AppData\Roaming\Wintech\ProValPS". This was done previously for ProVal user settings (proval.ini) with the release of ProVal 3.11.

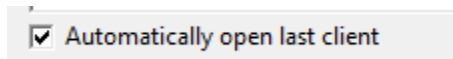
- ◆ Build .dll in c#

## ProVal API

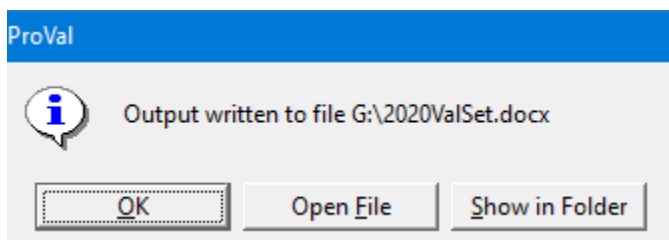
- ◆ Plan constants can now be set via the API.

## System

- ◆ **Last client opened.** ProVal typically opens the last client used automatically. A new checkbox on the Open Client dialog box allows you to open ProVal without a client open.



- ◆ **Saving files.** Now after saving results to a file such as output, exhibits, stochastic forecast or capital market simulator output detail, etc, ProVal now offers to "show in folder" in addition to "open file".



- ◆ **Regulatory data.** Valuation & Core processing messages now includes a list of the regulatory data files used and their dates.
- ◆ For ProVal license server users, if it looks like you have a previous license that was stranded, ProVal now prompts you to release it at startup (perhaps due to a connection issue). In most cases, this relieves administrators of ProVal license servers from having to clean up stranded licenses.
- ◆ New links have been added to Help that will take you directly to the What's New document, the updates log, the changes log, and the support and training websites.

## Performance

- ◆ **Screen Data** performance has been vastly improved for large populations. It is now faster, uses less memory, and requires no temporary disk space. For example, a case with over 400k lives that previously took 75 minutes now runs in under 4 minutes.
- ◆ **Valuations and core projections with subtotals** are now much more compact in use of temporary disk space to store subtotals during the run. In one core projection with a lot of subtotals, it previously required more than 30 GB of free disk space and now only requires 8 GB. If local disk space is still insufficient, a new .ini file setting ([GRID] Loader.CacheDir) lets you specify a location with more free space (e.g., network drive).
- ◆ **Valuation sets** have been sped up when adding many valuations together, e.g., for a U.S. Public pension plan that varies by group and underlying valuations subtotaled on 3 fields. In one example with hundreds of groups, a valuation set that used to take 216 seconds now runs in 68 seconds.
- ◆ **ProVal PS** has been sped up when the underlying forecast adds many core projections together. In one complicated example, a forecast that used to take 110 seconds now runs in 38 seconds.
- ◆ Deep Copy has been sped up.

## Training

- ◆ ProVal's training site has an updated look and avoids issues that may have been encountered playing videos.

## Changes Log

- ◆ Be sure to read the changes log (see the "changes log.doc" file in the ProVal directory) about updates to certain calculations that may change results,

# Canadian Commuted Values

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## Background

Previously, commuted values were required to be valued assuming 100% will commence at the most valuable age. In ProVal, when performing the solvency valuation, ProVal values the most valuable age by comparing the present value of termination and retirement benefits and choosing the [commencement] age with the largest present value. For going concern, ProVal does not explicitly determine a most valuable age. To determine the most valuable commencement age in going concern, users must manually determine the most valuable age by finding the maximum across the present values of each possible commencement age within the benefit definitions.

Under the new standards of practice issued by the CIA, participants expected to receive a commuted value should be valued by assuming:

- 50% will commence at the most valuable age
- 50% will commence at the earliest unreduced age

Essentially, users need 50% of the commuted value they are currently calculating and 50% of a new value. The most valuable calculations in ProVal will remain the same. This means users who measure a commuted value for ongoing purposes will still have to determine the maximum present value by comparing values at all possible commencement ages. Our enhancements are designed to make it easier to take 50% of the most valuable age and 50% of the earliest unreduced age.

## Summary

When commuted values are measured, two Benefit Definitions will be required to measure it under the new standard. One to handle the most valuable age and one to handle the earliest unreduced age. If you are currently using ProVal to measure commuted values, you should already have your Plan set up to handle the most valuable age. You would simply need to create a new Benefit Definition set up to assume earliest unreduced age. Election probabilities would be used to indicate the assumed percentage of participants receiving each benefit.

## Solvency Calculations

There is a new checkbox at the bottom of the Benefit Definition dialog box under a new “Solvency & Windup Valuations” section.

### Solvency & Windup:

This is an earliest unreduced age benefit

If you check this box, this benefit will be excluded from the solvency & windup calculation to determine the most valuable age. Benefits that have this checked will be valued at the commencement age specified in the payment form. We expect that this would be checked for all benefit definitions set up to capture the liability for commuted values at the earliest unreduced age.

To further assist with the valuation of benefits payable at the earliest unreduced age, we have enhanced payment form definitions to allow benefits to commence at an age specified by an age/service/points grid.

**Payment Form Definition - [Unreduced Age]**

Name:

Type:

Benefit commences (and temporary period begins):

immediately

at member age

at member age defined by field

at earliest age that meets one of the following conditions

Age	Service	Points
62		
	30	
		80

The most valuable age will be determined the same way that it is currently except that benefits that do not have the checkbox above selected will be excluded.

Election probabilities should continue to be used to indicate the percentage of participants who will receive commuted values. For the new benefit definition coded to assume commencement at the earliest unreduced age, we would expect this probability to be 50% of the percentage of participants assumed to take a commuted value. (Note that the election probability for the benefit definition coded to measure the commuted value payable at the most valuable age should be similarly coded to reflect that 50% of participants assumed to take a commuted value will receive it at the most valuable age).

The solvency liability for the earliest unreduced age benefit definitions will be calculated as the present value at the valuation date based on the benefit definition, payment forms and assumptions defined. We would expect commuted values payable at the unreduced age to be coded with a lump sum payment form, with a benefit definition that has no reduction factors, a lump sum factor deferred to the earliest commencement age (or using a lump sum optional payment form), and with election probabilities applied.

For solvency and windup valuations that allow participants to grow in to benefit eligibility and that may wish to value a different retirement benefit for those that grow in to retirement eligibility (for example, if you assume that participants retirement eligible on the valuation date will receive a lifetime annuity but participants that grow-in to retirement eligibility will receive a commuted value), we have added a parameter to control that. You may select whether a benefit definition is applicable to all eligible participants (the default), those who grow-in to the eligibility, or those who are eligible on the valuation date.

This benefit is applicable to

- all participants
- participants who will grow-in to the eligibility**
- participants eligible on the valuation date

### Going Concern calculations for plans that assume a commuted value

Currently, the most valuable age must be determined for going concern by comparing the present value at each possible commencement age and valuing the largest amount. This will continue to be required for going concern. A new benefit definition that measures the liability at the earliest

unreduced age will need to be setup with election probabilities as described in the solvency section above.

## Valuation Assumptions

The Solvency & Windup Liability topics within Valuation Assumptions have a new topic "Election Probabilities". You can now specify separate election probabilities for solvency liability. Previously, if you wanted different election probabilities for going concern and solvency, you had to create two different Valuation Assumptions and run two Valuations.

### Election Probabilities

Same as Ongoing Liability

Probabilities	Vary by
0, 0.5	2 forms

Example:

Commutation assumptions:

- Solvency – 80% of participants receive a commuted value for retirement and termination
- Going concern – 0% commutation

Benefits Provided:

- Bridge is only paid upon retirement
- Termination and retirement benefits may be paid as either an annuity or lump sum. Benefits are reduced for early commencement.

		Election Probabilities	
		Solvency	Ongoing
Termination benefit	Bft deferred to age 65		
Normal Form Annuity		.2	1
Optional Form LS		.4	0
Termination benefit *	Bft deferred to unreduced age		
Normal Form LS		.4	0
Retirement benefit	Bft*ERF payable immediately		
Normal Form Annuity		.2	1
Optional Form LS		.4	0
Retirement benefit *	Bft deferred to unreduced age		
Normal Form LS		.4	0
Retirement Bridge	Bridge payable from retirement to age 65		
Normal Form Annuity		.2	1
Optional Form LS		.4	0
Retirement Bridge *	Bridge payable at unreduced age		
Normal Form LS		.4	0

\*These benefit definitions should have the parameter "this is an earliest unreduced age benefit" checked.

Results:

Ongoing – ProVal will value the benefits as written.

Solvency – ProVal will determine the most valuable liability the same way it does currently but by excluding the present values of benefits that are marked as earliest unreduced age benefits. The liability for the earliest unreduced age benefits will be measured as the present value on the valuation date.

# The CARES Act

Under the CARES Act, the AFTAP from the plan year ending in 2019 may be used for any plan years that include calendar year 2020. See the new option below which allows you to apply this provision. Aside from displaying the AFTAP in output, ProVal uses the AFTAP to determine whether to waive credit balances, if that option is selected. Note that if the AFTAP entered for the plan year ending in 2019 is below the threshold selected for waiving balances, ProVal will still waive current year balances to attempt to reach the threshold. For example, assume we are performing a 1/1/2020 valuation, the plan has a 55% AFTAP for the 2019 plan year, and ProVal calculates a 51% AFTAP for the 2020 plan year. If you have selected to waive credit balances to meet a 60% AFTAP, ProVal will attempt to waive balances to meet a 60% AFTAP for 2020 (in this case, the 2019 AFTAP had no impact).

Waive balances to:

- Meet  AFTAP, if possible
- Waive balances an additional 10%, if possible
- Avoid At-Risk status, if possible
- Be eligible to apply balances against MRC in the following year (80% funded)
- Meet  %  NAR FTAP
- Do not waive balances if target cannot be met

Non-HCE annuity purchases for AFTAP calculation:

Year -1

Year -2

Apply CARES Act: Use AFTAP from plan year ending in 2019 as a minimum for plan years that include calendar year 2020

Applicable AFTAP:  %

## Minimum Funding Rules & Plan Assets

The Contribution Policy topic in the Asset & Funding Policy now has an Apply CARES Act option if pay quarterly and final contributions is chosen as the contribution timing. If selected, all contributions due during the 2020 calendar year, if calculated by ProVal, will be deferred until 12/31/2020. For quarterly contributions due in the 2020 plan year, ProVal will use the 2020 EIR to apply interest from the original due date until 12/31/2020. Therefore, the 2020 EIR is a required input if the initial plan year is prior to 2020. As always, ProVal will honor any contributions entered in the contribution schedule. Penalty interest will not be applied to contributions due during the 2020 calendar year, unless made after 1/1/2021. If you do not apply the CARES Act and enter deferred contributions on the schedule, the calculations will not apply the CARES Act and late penalty interest will be applied to the contributions made after the original due date.

Note that in a forecast, a 2020 EIR may be entered for years before 2020 and also calculated for the 2020 plan year during a forecast year. In this case, the entered EIR will be used for plan years prior to 2020 and the calculated EIR will be used in the forecasted year.



Timing of contributions

Pay quarterly contributions and final contribution when due  
(Note: this option requires a contribution schedule)

Apply CARES Act: Assume 2020 contributions are made on 12/31/2020  
2020 EIR:

Fraction of year from Valuation Date to average date  
contributions are made:

Reflect contribution schedule

ProVal continues to expect that all contributions receivable (included deferred contributions) are included both in the Market Value of Assets entered as of the initial valuation date, and in the contribution schedule.

No changes will be made to the assets used for Maximum Tax purposes although 1/1/2021 may be after the tax return filing deadline.

For plans that do not intend to restate expense to reflect application of the CARES Act, use the contribution schedule and denote which contributions to "Include in EROA" or are Applied to "EROA only."

# Club Vita

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## Background

Club Vita has analyzed the patterns of longevity in large, diverse populations of retirees in the US, Canada, and the UK. Through this research, Club Vita has found material differences between sub-groups of retirees, deviating from what the “average” retiree looks like. VitaCurves enable you to tailor your assumptions to a plan’s population using easily available data fields contained in pension recordkeeping systems. You can read more about Club Vita’s research here: <https://www.clubvita.us/news-and-insights/zooming-in-on-zipcodes>.

According to Club Vita, the VitaCurves model is particularly useful for groups of pension plan participants where there is little or no historical experience data or the group is not representative of the “average” retiree. Examples include small plans, individual employers in a multiemployer plan, or a sub-group of a plan in a pension risk transfer “buy out”. Club Vita has found the use of more personalized assumptions can change valuation liabilities by up to 5 percentage points, with reductions being more frequent than increases.

VitaCurves can be licensed directly from Club Vita. If you would like to learn more, please drop a message to Dan Reddy FSA EA, CEO of Club Vita US LLC at [daniel.reddy@clubvita.net](mailto:daniel.reddy@clubvita.net), or Ian Edelist FCIA FSA, CEO of Club Vita Canada Inc at [ian.edelist@clubvita.net](mailto:ian.edelist@clubvita.net).

## Steps to using Vita Curves

1. After installing the Club Vita curves, go to the Mortality library and select a Club Vita curve entry to edit.
2. Apply an improvement scale if applicable.
3. Choose the character database field used to map participants to curves.
4. You may now save the mortality rate table and use it throughout ProVal.

Name: CVUSv1\_VitaCurves

Club Vita Mortality Curves:

Age	CVUSv1_1416_FPNaoc	CVUSv1_1416_FPNaoc	CVUSv1_1416_FPNaoc	CVUSv1_1416_FPNaob	CVUSv1_1416_FPNaob	CVUSv1_1416_FPNaob
<= 15	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	0.000149	0.000152	0.000147	0.000151	0.000149	0.000145
17	0.000162	0.000166	0.000159	0.000164	0.000162	0.000157
18	0.000176	0.000181	0.000173	0.000179	0.000176	0.000170
19	0.000192	0.000198	0.000188	0.000196	0.000192	0.000185
20	0.000209	0.000217	0.000204	0.000214	0.000209	0.000200
21	0.000228	0.000237	0.000222	0.000233	0.000228	0.000217
22	0.000248	0.000259	0.000241	0.000255	0.000248	0.000235
23	0.000270	0.000283	0.000262	0.000278	0.000271	0.000255
24	0.000294	0.000309	0.000285	0.000304	0.000295	0.000277
25	0.000321	0.000338	0.000310	0.000331	0.000321	0.000300
26	0.000349	0.000370	0.000336	0.000362	0.000350	0.000325
27	0.000380	0.000404	0.000366	0.000395	0.000381	0.000353
28	0.000414	0.000442	0.000397	0.000431	0.000415	0.000383
29	0.000451	0.000483	0.000433	0.000470	0.000457	0.000415

Apply Improvement Scale

Scale:  Base year: 2015

Projection:  Fully generational  To year

Database field mapping: ClubVita

Scale rates by database field:

# Late Retirement

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