Regulatory Affairs Division
Office of the General Counsel,
Pension Benefit Guaranty Corporation
445 12th Street SW
Washington
DC 20024-2101

October 17, 2023

Dear Sir or Madam:

Re: RIN 1212-AA55 – Valuation Assumptions and Methods

We appreciate the opportunity to comment on the rules[1] proposed by the Pension Benefit Guaranty Corporation ("PBGC"). The rules are related to updated assumptions used in determining the present value of benefits for single-employer pension plans, as delineated under subpart B of the PBGC's regulation on Allocation of Assets. Additionally, the rules would affect the assumptions for establishing components of mass withdrawal liability for multiemployer pension plans and for other purposes under the Employee Retirement Income Security Act of 1974. Of particular interest to us are the proposed updates to the mortality assumptions used in these valuations. These mortality assumptions will be the primary subject of our comments.

We welcome the PBGC's motivation to align assumptions with private-sector insurers and its willingness to engage in a consultation about the new mortality assumptions proposed. Club Vita is an international expert in mortality modeling, working with around 500 pension plans and 30 insurers/reinsurers worldwide, including many in the US. In the US, we have recently completed a survey focused on leading practices in mortality modeling that included the large majority of writers of pension risk transfer business. We would like to share our expertise to add to the discourse on current best practices in mortality modeling.

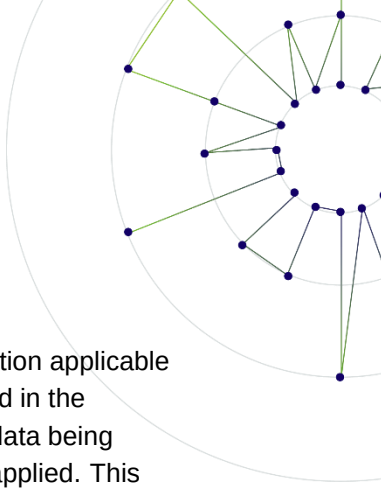
With respect to the rules proposed by the PBGC:

1 We recognize and commend your aim to update mortality assumptions in the new rules to better align with private sector insurers.

2 We commend you for your proposal to introduce generational mortality assumptions. In our experience this is a widely adopted leading practice both in the pension and insurance industries.

3 We recognize the proposal to update the base mortality assumptions in the rules from GAM-94 to Pri-2012, which significantly modernizes the base mortality assumptions.

[1] Federal Register / Vol. 88, No.159 / Friday, August 18, 2023 / Proposed Rules, Pension Benefit Guaranty Corporation, RIN 1212-AA55, Valuation Assumptions and Methods https://www.govinfo.gov/content/pkg/FR-2023-08-18/pdf/2023-17521.pdf



4 We further recognize the appeal to the PBGC of having a single mortality assumption applicable to all plans. However, the "*standard table*" approach to mortality modeling, as used in the construction of Pri-2012, relies on the average experience across the calibration data being representative of the mortality characteristics of every pension plan to which it is applied. This means Pri-2012 is most appropriate for a geographically diverse, country-wide pension plan with a mixture of blue- and white-collar workers and an average benefit amount similar to the calibration data. There is likely no single plan that exhibits these characteristics and the greater the differences in characteristics between the plan and the calibration data, the greater the risk of over-, or under-valuation.

While the proposal modernizes the rules in many respects, our view is that this update to base mortality does not fully achieve the aim of aligning the assumptions with the insurance industry or with leading practice. There has been a clear trend away from using *standard tables* like Pri-2012 in pricing the acquisition of blocks of defined benefit pension liabilities in recent years, with the vast majority of insurance companies now favoring "*multi-factor models*".

Multi-factor models are *bottom-up* models developed using Generalized Linear Modeling, which make use of multiple data fields to capture the diversity of pension plan mortality by analyzing the characteristics of the individuals in those pension plans. Footnotes [2] and [3] highlight peer-reviewed academic papers that discuss how such models were created and how they operate. Footnote [4] references an American Academy of Actuaries article on the use of such models.

The insurance industry makes use of *multi-factor models* since they are generally recognized as a more precise way to measure liabilities on a plan-by-plan basis. When tested against the Pri-2012 *standard tables* for a range of different pension plans, Club Vita's proprietary *multi-factor model* produced liability differentials of up to +/-6%. In other words, a block of defined benefit pension liabilities valued at $1bn using Pri-2012, could in fact have a liability valuation in the range of $940m to $1,060m when recognizing the block's actual demographic mix using a *multi-factor model.* This discrepancy means that the use of *standard table* mortality assumptions during an insolvency could result in unintended material windfall gains or penalties for some creditors.

To align assumptions with leading practice in the insurance industry, we think it is appropriate for you to allow pension plans to use multi-factor models to determine their base mortality in your rules.

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[2] For the UK see: "What longevity predictors should be allowed for when valuing pension scheme liabilities," https://www.cambridge.org/core/journals/british-actuarial-journal/article/what-longevity-predictors-should-be-allowed-for-when-valuing-pension-scheme-liabilities/3C7E032BF549D497D3ABEE506CFF67EF

[3] For Canada see "Key Factors for Explaining Differences in Pensioner Baseline Mortality," https://www.cia-ica.ca/docs/default-source/2018/218068.pdf

[4] *Multi-factor models* are sometimes also referred to as "*augmented mortality models*" and were discussed in detail in the American Academy of Actuaries paper "Actuarial Considerations When Using Augmented Mortality Models", October 2022 https://www.actuary.org/sites/default/files/2022-11/AugMortality11.22.pdf

If homogeneity of assumptions across plans is viewed as being of paramount importance, we would strongly encourage the PBGC to engage with a provider of *multi-factor mortality models* to regularly assess the appropriateness of the proposed assumptions. This would allow the PBGC to assess the size of any valuation differential between the multi-factor approach and its assumptions and identify any emerging systematic over or under estimation of plan liabilities. This may be especially relevant in the event of multiple insolvencies from similar industries (where systematic differences from Pri-2012 data may be observed).

Finally, it is important to note the Pri-2012 base tables are calibrated to data no more recent than 2014. These tables are becoming outdated and, given that the next round of data collection is yet to be commenced, it will be some time before a newer, more contemporary version is released. The models used by most insurers are updated much more regularly and are more responsive to emerging mortality trends. Thus, regular monitoring of the appropriateness of the proposed assumptions would allow the PBGC to recognize more quickly when the regulatory framework needs to be updated.

Given the importance of precision in actual plan termination and plan withdrawal situations, we feel that regular comparison against up-to-date *multi-factor models* would result in fewer surprises for the PBGC and ultimately lead to a more sustainable system.

Specific request of upcoming PBGC regulations

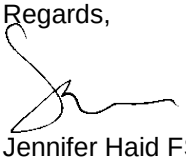
We request that the PBGC considers authorizing greater flexibility in the mortality tables used by single-employer and multiemployer plan sponsors, so they may use tailored mortality assumptions based on *multi-factor baseline* mortality models.

If homogeneity of assumptions is viewed as paramount, we suggest that PBGC engages with a provider of *multi-factor mortality models* to regularly evaluate its prescribed mortality assumption in light of the range of liabilities produced by models being used by the insurance industry.

We would be delighted to meet with you to discuss *multi-factor models* and how their use is currently helping plan sponsors and insurers in the US to reduce longevity risk through better measurement.

You may contact us at our details below.

Regards,



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ATTACHMENT

Background to Club Vita

Club Vita is an independent longevity data analytics company, which facilitates the accumulation and pooling of data underlying the longevity patterns of retirees with annuity benefits. We work primarily with workplace defined benefit (DB) pension funds and their advisors in the UK, Canada and the US, to help them understand their emerging longevity patterns, to drive more informed strategic decisions and to embed best-practice risk-management into their governance frameworks. We also support financial institutions that manage longevity risk: insurers, reinsurers and asset managers, helping them offer attractive longevity risk protection products in a tech-enabled, efficient manner. Our current international community is approaching 500 pension funds, 7 pension advisory firms and 30 (re)insurers. Across our three businesses internationally, we are tracking the survival patterns of a diverse population of over five million people with benefits in workplace pension plans.

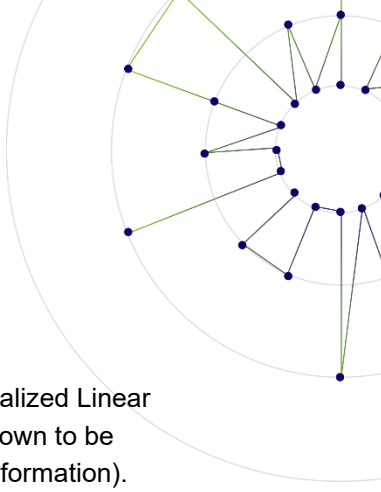
Our approach to base mortality assumptions is to combine the effects of multiple factors including ZIP+4 (or 9-digit ZIP code), pension amount, optional form and blue/white collar occupation type into a highly predictive model of current longevity. The unique aspects of this approach are three-fold:

1 Multiple factors are used simultaneously to identify the best mortality assumption for an individual participant. As stated above, our factors in the US currently include ZIP+4, pension amount, optional form and collar occupation type.

2 ZIP+4 code is used to identify where people live at a very granular level, pinpointing lifestyle and socio-economic effects on pension participant longevity.

3 Aggregate mortality assumptions for a pension plan, or any subgroup of participants, are then built up from the assumptions of the individuals. This is a consistent, data driven methodology to create highly tailored and appropriate mortality assumptions for a wide range of different plans and groups.

By having individualized assumptions for each participant, the aggregate liability for each plan can be measured far more precisely than is possible through standardized tables. Since the factors we use are objective and readily captured by pension administration systems, there is no need for actuarial judgment in using our approach.



Background to multi-factor models

At the heart of a multi-factor modeling approach is a statistical method known as “Generalized Linear Modeling” (GLM), which links mortality rates to the values taken by a range of factors known to be relevant to longevity expectations (for example an individual’s age, income and ZIP+4 information). These techniques mirror those well-established for analyzing UK and Canadian pension plan longevity, which have been peer reviewed by actuarial bodies in both of those countries[5,6].

Historically, the industry has relied on *standard tables* for the purposes of pension valuations. Actuaries have fitted (“graduated”) life tables by first segmenting data into groups with like values of a predictor and then smoothing to this data. This technique helps to reduce variability in the underlying data, but at the expense of reducing the data volumes in each group, in turn reducing the certainty in the mortality rates and/or the potential number of groups that can be formed. The application of GLM techniques enables a wide range of internally consistent tables to be fitted simultaneously across a range of variables. GLM makes maximum use of the available data, improving confidence in the resulting tables while creating a model that captures the diversity of the underlying population.

The latest edition of Club Vita’s *multi-factor model,* VitaCurves (third generation), used experience data from over 200 different US based defined benefit pension plans covering the 2018-2020 period. These plans cover a range of different sizes, geographies, benefit amounts, participant statuses, blue/white collar occupation type and industries. More information can be found in our paper on the data underpinning our model[7].

We have found that the VitaCurves model produces more accurate results for pension valuations. We assess our model with a series of statistical and actuarial goodness-of-fit tests. We also have reviewed plan-level goodness-of-fit tests and observe a significant decrease in variation of actual versus expected mortality experience by using our assumptions rather than a standard mortality table. Our model reference paper contains more information about the tests performed[8].

[5] For the UK see: “What longevity predictors should be allowed for when valuing pension scheme liabilities,” https://www.cambridge.org/core/journals/british-actuarial-journal/article/what-longevity-predictors-should-be-allowed-for-when-valuing-pension-scheme-liabilities/3C7E032BF549D497D3ABEE506CFF67EF

[6] For Canada see “Key Factors for Explaining Differences in Pensioner Baseline Mortality,” https://www.cia-ica.ca/docs/default-source/2018/218068.pdf

[7] Data underpinning ZIP+4 VitaCurves, https://www.clubvita.net/assets/images/general/Data-underpinning-CV22-VitaCurves.pdf

[8] Calibrating ZIP+4 VitaCurves, https://www.clubvita.net/assets/images/general/Calibrating-CV22-VitaCurves.pdf