

October 17, 2023

RIN 1212- AA55  
Regulatory Affairs Division  
Office of the General Counsel  
Pension Benefit Guaranty Corporation  
445 12th St. SW  
Washington DC 20024-201

Re: RIN 1212- AA55, Proposed Regulation on Valuation Assumptions and Methods

Dear Sir / Madame

The purpose of this letter is to express my strong support for issuance of a final regulation setting forth the revised mortality bases and interest rates under PBGC's valuation regulation on substantially the same basis as set forth in the proposed regulation.

I begin with a brief summary of the history and public understanding of the regulations since first issuance and follow with suggestions for concision, transparency and transition.

***History and Public Understanding:***

The regulation specifies the assumptions PBGC uses to value benefits on plan termination. Since PBGC's inception it has used a combination of mortality tables and adjusted interest rate assumptions to produce similar values to the cost of buying an annuity from an insurer in the markets.<sup>1</sup> These adjusted interest rate assumptions have been updated on a monthly or, during some periods, a quarterly basis to reflect that a primary driver of annuity pricing is the yields on fixed income maturities at the time when an annuity is sold. Mortality tables have been less frequently updated, both by the actuarial profession and in the agency regulations.

PBGC has frequently stated that the interest rates it promulgates approximate annuity pricing **only** in conjunction with a specific mortality table, but that message has not filtered into public understanding. On the contrary, a variety of parties, ranging from the Congress<sup>2</sup> to certain staff at PBGC sister agencies, to the general public, have suggested that the use of PBGC interest rates

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<sup>1</sup> The preamble to PBGC's Interim valuation regulations, issued in 1976, states: "The initial interest rates used are derived from annuity price data obtained by PBGC from the private insurance industry. The PBGC's interest assumptions have been designed so that, when coupled with the mortality assumptions found in the regulation, the benefit values obtained for immediate and deferred annuities are in line with industry annuity prices." Fed Register, 41 No. 213, November 3 1976 p.48485

<sup>2</sup> Congress notably legislated the use of the deferred and immediate PBGC interest rates, but **not** the associated mortality table, in determining minimum values of lump sums under IRC 417(e) for a number of years.

are suitable for determining settlement obligations, without regard to the mortality table inherent in the determination of those interest rates. PBGC has an opportunity to further clarify this dependency by additional transparency regarding the adjusted interest rates; suggestions on this are included below in the section below labeled Transparency.

- **Prior Interest Rate Formats**

Within this overall structure, PBGC has used different formats to prescribe interest rates over time. These formats reflected the interest rate environment and the understanding of annuity pricing at the time. The proposed regulations would constitute the third such format.

PBGC initially formatted interest rate assumptions as sets of immediate and deferred interest rates. In 1976, US interest rates were generally higher than today; they were also relatively high for post war levels and continued to rise through the decade. Financial markets were also less developed (the US Treasury STRIPS program, for instance, began in 1985). Insurers selling annuities that commenced immediately could lock in a relatively high interest rate investment through purchase of bond portfolios, but annuities that were deferred faced the potential that a backing investment portfolio would mature and need to be invested at a lower rate. i.e., “reinvestment risk”.

PBGC’s immediate and deferred interest rate structure reflected these conditions, setting a relatively high rate for immediate annuities, with successively lower rates applying during any deferral period prior to the annuity commencement. This became a pattern of a (highest) immediate annuity rate, rates 0.75% and 2% lower than the immediate rate for the first 7 and next 8 years of any deferral period and a 4% “floor” rate for years more than 15 prior to the commencement of payments. The net effect was that the longer the likely duration of the annuity, the lower the average interest rate used in its pricing, reflecting insurer reinvestment risk aversion.

After the spike in interest rates of the early 80’s, interest rates fell but remained high compared to current levels and to the post-war pre-ERISA era. In response, a number of actuaries began to examine pricing pension obligations on the basis of high interest rates for a select period of time, eventually reverting to lower rates<sup>3</sup>. This select and ultimate format was proposed for use by PBGC in March of 1986 and adopted for multiemployer plans. But after reviewing comments, PBGC withdrew the single-employer proposal in 1987 and issued a revised and simplified select and ultimate format proposal in January 1993, while also updating the mortality table assumptions.<sup>4</sup> The regulations were issued as final on September 28, 1993 with the new rates first effective for November 1993.

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<sup>3</sup> A paper by a committee of prominent pension actuaries including a former PBGC Chief Actuary was published in 1985 see Amoroso et alia, “Select and Ultimate Financial Assumptions in Pension Plan Valuation: An Analysis of the Issues” Transactions, Society of Actuaries XXXVII pp. 351-392

<sup>4</sup> Fed Register, 58 No. 11, January 19, 1993 pp. 528-5147

- **Proposed Interest Rate Format**

In the 30 years since the 1993 regulations, actuarial practice has evolved, both with respect to the projection of future mortality rates, but also to better reflect learnings from financial economics. In addition, there has been a dramatic expansion in the ease of accessing financial markets information and the timeliness of that data. Commercial actuarial software now readily allows for the use of full bond market yield curves and projected mortality improvements. While PBGC has updated mortality assumptions during the intervening 30 years, it has yet to update the structure of its prescribed interest rates to reflect new pricing information and understanding.

Under the proposed methodology, PBGC interest rate assumptions would be based on a weighted average of 2 publicly available yield curves -- a Treasury yield curve and a yield curve for high quality corporate bonds. These curves are available monthly. The weighted average of these curves would be adjusted by adding a set of “spreads” produced by PBGC. These spreads, also formatted as a yield curve, explicitly adjust the values produced by the use of the weighted yield curves and PBGC’s mortality assumptions in order to best approximate the prices of competitive annuity bids based on insurer market survey data. Thus the new regulation remains true to the concept that PBGC remains “in line with industry annuity prices”.

There are several advantages to this new approach. First, it reflects the current understanding of annuity pricing as using a yield curve. Second, it readily provides monthly interest rates, rather than quarterly. Third, the use of public sources for the weighted yield curves should enhance public confidence. Fourth, it allows public insight into the magnitude and variability of adjustments PBGC needs to make to interest rates in order to better reflect competitive annuity prices.

***Concision:***

Turning now to specific suggestions, one of the items that is notable in reviewing the history of PBGC valuation regulations is that the early regulations are replete with detailed derivations of what are now thought of as fairly basic actuarial calculations. Over time, this detail is then simplified away. The proposed regulation appears to continue this trend by providing detail and an example on mortality projection.

Mortality projection techniques are standard and have been part of the pension actuarial literature since at least the issuance of the UP94 and GAR94 Mortality Tables.<sup>5</sup> Furthermore they are embedded in the determination and use of the MP-2021 report which is incorporated into the proposed regulation by reference. Thus, in the interests of providing clear and concise guidance, I suggest that the example of mortality projection adds length but not clarity and suggest proposed subparagraph 4044.53(c)(3) and associated Table 1, be eliminated to make the

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<sup>5</sup> See the three papers on the GAR 94 and UP 94 mortality table in the 1995 Transactions , Society of Actuaries XLVII, pp. 795-919

regulation more concise and readily understandable (with renumbering of subsequent subparagraphs and Tables).

***Transparency:***

As set forth in the white paper that accompanied the publication of the proposed regulations, interest rates would be based on a weighted average of two publicly available yield curves adjusted by a “spread” yield curve. The spread curve would be determined as the 4 quarter moving average of spreads needed to adjust the yield curves to prices derived by looking at the most competitive annuity bid prices in the survey of insurers for the 4 most recent prior quarters.

One way of thinking about the proposed regulation structure would be to treat the blended market yield curve and the specified mortality table as a starting hypothesis for the calculation of an annuity price in the market. The spreads then represent the adjustments needed to move from a hypothetical to an observed competitive price. As such, the pattern of changes in these spreads will reflect not only changes in regulatory costs, but also the evolution of pricing as insurers reflect new information on longevity, financial innovation, competitive pressures, etc.

Thus the stability and magnitude of the spreads over time reflect how well the starting hypothesis on annuity pricing continues to reflect insurer practice. If the spreads show a pattern of changing in a particular direction, that will show an evolution in market pricing. Because the regulatory process is slow there are often delays in reflecting new mortality tables or other information. Looking at how the spreads change over time, provides insight into how well the regulation continues to model insurer pricing.

As set forth in its white paper, the PBGC would publish under 4044.54(e)(1) the 4 quarter moving average of the individual spreads it determined. But given the ability to use changes in the spreads to monitor (and explain) how well the regulation models annuity pricing I also recommend that PBGC:

1. Publish each individual (prior to averaging) quarter’s spreads in an informational section of its website
2. Expand its white paper to provide a demonstration of how the update in mortality table incorporated in the proposed regulation affected the spreads in one particular quarter. This speaks to the opportunity to better educate the public on how the interest rates PBGC calculates are dependent on the specific mortality table used.

***Transition:***

PBGC’s valuation assumptions are referenced in a number of areas under PBGC and IRS regulation. Some transition period will be needed for the regulated community to adapt to the new format and requirements. But that period need not be unduly long, if the final regulation is in substantially the same format as the current proposal, since these users have had long notice of

the proposed change and commercial software that can accommodate the use of yield curves and projected mortality in actuarial work is readily available.

But, in addition to the uses prescribed under the regulations, I have found PBGC valuation assumptions, particularly the interest rates, to have been adopted by third parties in a variety of situations including: merger and acquisition activity, bargaining and academic research. These users will need time to adopt their idiosyncratic use of the current longstanding interest rate structure and are less likely to be aware that changes have been proposed. Thus PBGC should commit to publishing rates on the prior basis (in an informational only format) for some limited duration of time. It is important that this duration be limited, to avoid a situation such as prevailed with PBGC's deferred and immediate rates, which were published long after market conditions, mortality tables and annuity pricing mechanisms had outgrown their use. Thus PBGC should balance the objectives of not disappointing third party users' expectations with the need to maintain systems as they fade in relevance by committing to publish the equivalent old format rates for a limited period only. I suggest no longer than 5 years.

I hope the above comments are helpful to the agency. I would be glad to discuss any questions that arise from these comments. Again, I support the agency moving to finalize the regulations on substantially the basis proposed as quickly as possible.

Sincere regards

Christopher Bone, FSA, MAAA, EA