This Guide explains The BCG PRT Index and how it may be used.

Summary

The BCG PRT Index (PRT Index) represents the premium that an insurance provider would charge for a buyout of a typical DB plan. It is intended to illustrate relatively advantageous or disadvantageous times for a plan sponsor to purchase annuities from insurance providers. The PRT Index reflects changes in the providers' targeted investment universe, expense structure, regulatory environment and pricing aggressiveness. It does not capture the census characteristics and features of any particular plan, which would require specific insurer underwriting. The plan is deemed not to change over time.

The BCG PRT Index Defined

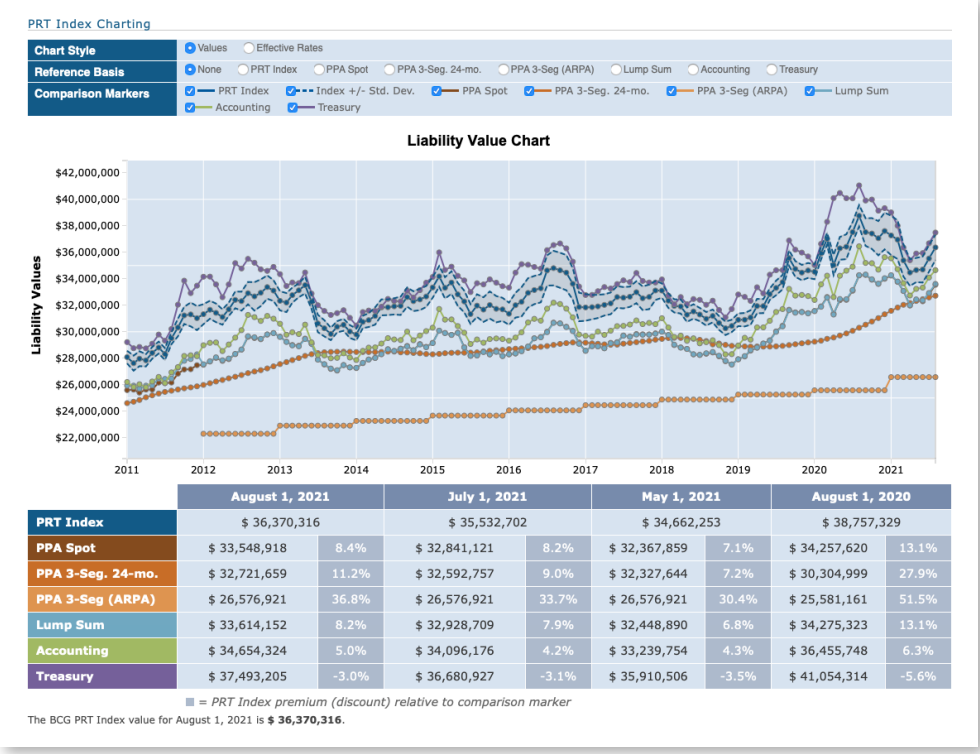
The PRT Index is the present value of a fixed series of cash flows. The cash flows (Index Cashflow) are chosen to be representative of a typical DB pension plan seeking a buyout. The present value is calculated by discounting the cash flows at a single interest rate. The interest rate is derived in two steps. First, market rates are collected on a prescribed basis from participating insurance providers for various specific sizes and durations of buyouts, and those rates are averaged. Second, a mathematical interpolation of those average rates is performed in order to match the size and duration of the Index Cashflow. Each month, providers update their rates and a new PRT Index value is calculated.

Choice of an Index Cashflow

The Index Cashflow does not come from any particular pension census. But the size and shape of the cash flow was chosen to be similar to that of a "typical" plan seeking a buyout with a present value near $25 million, a liability mix of approximately 80% retirees and 20% deferred vesteds, and a duration near 10. (The duration will be higher at lower interest rates, and vice versa.)

PRT Index Charting

With BCG's PRT Index charting tool, the PRT Index can be viewed relative to various comparison markers. Users may find it helpful to see how the PRT Index compares to the present value of the same Index Cashflow on any of several different bases.[1] And they can determine when it is a relatively favorable or unfavorable time to execute a buyout transaction. A more opportunistic time would be when the PRT Index is not so high relative to other comparison markers (e.g. the PPA Spot rate value or the Accounting value)[2]. Because the PRT Index itself represents only the **average** of insurers' pricing rates, it is important to consider the **variability** of insurers' rates in estimating the price at which a transaction may be executed in practice. For this purpose, users can select "Index +/- Std. Dev." as a comparison marker to view one (1) standard deviation in buyout prices above and below the Index.



	August 1, 2021		July 1, 2021		May 1, 2021		August 1, 2020	
PRT Index	$ 36,370,316		$ 35,532,702		$ 34,662,253		$ 38,757,329	
PPA Spot	$ 33,548,918	8.4%	$ 32,841,121	8.2%	$ 32,367,859	7.1%	$ 34,257,620	13.1%
PPA 3-Seg. 24-mo.	$ 32,721,659	11.2%	$ 32,592,757	9.0%	$ 32,327,644	7.2%	$ 30,304,999	27.9%
PPA 3-Seg (ARPA)	$ 26,576,921	36.8%	$ 26,576,921	33.7%	$ 26,576,921	30.4%	$ 25,581,161	51.5%
Lump Sum	$ 33,614,152	8.2%	$ 32,928,709	7.9%	$ 32,448,890	6.8%	$ 34,275,323	13.1%
Accounting	$ 34,654,324	5.0%	$ 34,096,176	4.2%	$ 33,239,754	4.3%	$ 36,455,748	6.3%
Treasury	$ 37,493,205	-3.0%	$ 36,680,927	-3.1%	$ 35,910,506	-3.5%	$ 41,054,314	-5.6%

= PRT Index premium (discount) relative to comparison marker

The BCG PRT Index value for August 1, 2021 is **$ 36,370,316**.

1 See "Reconciling the PRT Index Cost for an Actual Buyout" section below.

2 Data is updated every month. In practice, plan sponsors apply updated rates to their plan only periodically (usually once per year), and therefore don't see the effect of certain changes as they evolve.

Other comparison markers are as follows:

PPA Basis (Spot; 3-Segment 24-month; 3-Segment HATFA, updated by ARPA): For many plan sponsors, one important comparison marker is the funding basis mandated by the Pension Protection Act of 2006 (PPA). The PPA established standards to determine plan sponsors' minimum contributions to their DB plans. Plans must calculate their funded status based on a choice of either the "PPA Spot" rates or the "PPA 3-Segment" rates. Both sets of PPA rates are derived from an index of U.S. corporate bonds rated A, AA or AAA. Spot rates are from the most recent month. The 3-Segment rates are a simple average of all the Spot rates over the previous 24 months that fall within each segment domain (i.e. 0-5 years; 5-20 years; and 20-60 years).

As a result of subsequent legislation under the American Rescue Plan Act of 2021 (ARPA) [and preceded by HATFA and MAP- 21], the minimum funding interest rates are averaged over 25 years, effectively raising the 3-segment rates and thereby lowering the value of the liability for funding purposes. The effect of ARPA is expected to begin phasing out not long after 2030, while also adding a minimum rate of 5%. Note that PBGC variable premiums are still calculated based on PPA rates **without** regard to ARPA.

Lump Sum Basis: This is the basis for determining minimum present values under IRC Section 417(e)(3)(D), and applies when plan sponsors offer lump sum windows to their participants[3]. Since 2012 when the PPA became fully phased in, this basis has remained extremely close to the PPA Spot basis. That's because it's based on the same corporate bond rates only split into 3 duration segments (like the "3-segment" rate basis, but without the 24-month-average time lag).

Accounting Basis: The accounting basis determines the value at which plan sponsors hold their DB plan on the company's balance sheet. It is based on a AA corporate yield curve. A buyout transaction will affect the plan sponsor's balance sheet to the extent the price is different from the accounting basis.

Treasury Basis: Since US Treasuries are often used as a "risk-free" standard, users may find it relevant to see the present value of the Index Cashflow by discounting with the US Treasury spot curve. Once a buyout has been undertaken, the plan sponsor should have no remaining risk – even credit risk – if they have carried out the purchase in accordance with applicable regulatory requirements and fiduciary standards.

Charting Features

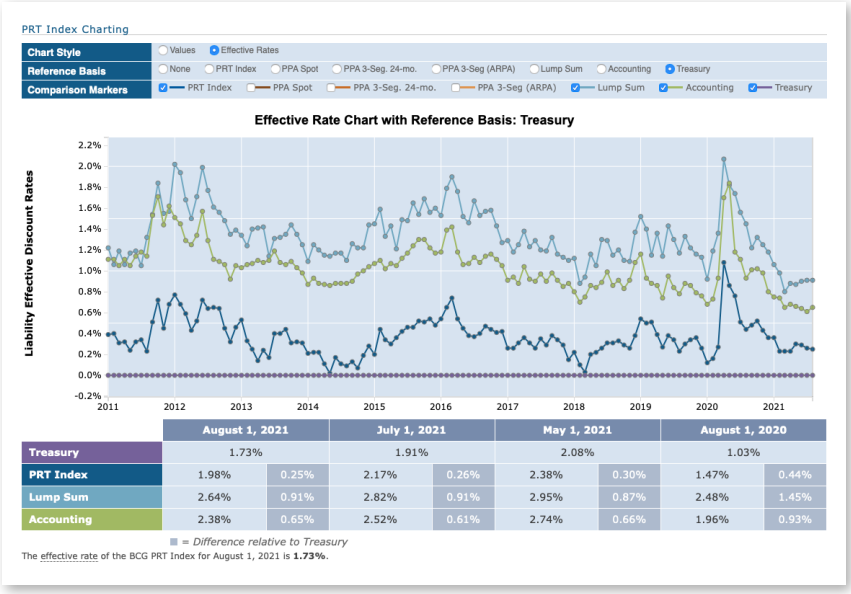
In addition to the ability to view the PRT Index versus the comparison markers described above, BCG's PRT Index charting tool provides several charting features to enhance the user's understanding:

Chart Style: The user can toggle between the Liability Values basis and an Effective Rates[4] basis. It is often helpful to see the differences in interest rates which give rise to differences in value. Because effective rates are a single rate, they serve as a convenient and simple way to understand those differences.

Reference Basis: Choosing the PRT Index or one of the other comparison markers as a reference basis makes it easy for the user to focus in on differences relative to a specific basis.

Historical Changes: To illustrate trends in the PRT Index and each of the comparison markers selected, a table below the graph provides the current values alongside the 1-month, 3-month and 12-month changes in those values.

Dynamic Chart Navigation: The user can move a vertical line cursor across the graph to focus in on any month since the Index's inception in January 2011. The table and monthly Index commentary instantly change to illustrate the historical information.



	August 1, 2021		July 1, 2021		May 1, 2021		August 1, 2020	
Treasury	1.73%		1.91%		2.08%		1.03%	
PRT Index	1.98%	0.25%	2.17%	0.26%	2.38%	0.30%	1.47%	0.44%
Lump Sum	2.64%	0.91%	2.82%	0.91%	2.95%	0.87%	2.48%	1.45%
Accounting	2.38%	0.65%	2.52%	0.61%	2.74%	0.66%	1.96%	0.93%

= Difference relative to Treasury

The effective rate of the BCG PRT Index for August 1, 2021 is **1.73%**.

3 Except for cash balance plans, where the lump sum would be based on the notional cash balance amount.

4 Effective rate is a single discount rate which is equivalent to discounting based on a series of different rates such as a spot curve or segmented discount rates. When used to discount a cashflow, the effective rate produces the same present value as the series of rates.

Reconciling the PRT Index Cost for an Actual Buyout

It seems logical to try to compare the cost of a buyout (as represented by the PRT Index) against the value of the same Index Cashflow based on certain bond market interest rate curves. Since insurers typically invest in matching-duration investment-grade bonds, it would seem the cost should be somewhat close to the PPA Spot basis or the Accounting basis. Considering furthermore that these other bases represent accepted measures for determining a plan's value, one might readily conclude that a buyout is financially disadvantageous. But, it is important to consider what is included and what is not included in these measures.

The PRT Index only illustrates the interest rate and expense elements of pricing a buyout. One major reason the PRT Index values appear higher is that insurers' interest rates are net of their required profit margin – which is not applicable when a plan is maintained by a plan sponsor. The insurers' rates also reflect the cost of all future administrative expenses.

	Market Spot Curves	PRT Index
Includes:	■ Current interest rates	■ Current interest rates ■ Insurer profit margin ■ Administrative expenses
Does not reflect:	■ Plan-specific mortality ■ Cost of additional plan features ■ Ongoing administrative expenses ■ Ongoing actuarial expenses ■ Ongoing investment management expenses ■ Annual PBGC premiums ■ Ongoing internal management cost ■ Intangible considerations	■ Plan-specific mortality ■ Cost of additional plan features ■ One-time transaction expenses ■ Intangible considerations

In order to make a full apples-to-apples cost comparison between maintaining and terminating a plan, the plan sponsor must account for the cost of future expenses that a plan sponsor incurs with an ongoing plan[5]. These expenses are all eliminated to the extent the associated liability is removed via a buyout.

Additional pricing differences relative to the funding or accounting bases could result from differences between what the plan sponsor (or its actuary) assumes regarding mortality and usage of early retirement and optional form plan design features and what insurers assume in pricing those same elements. Last, the PRT Index does not address intangibles that are not easily quantifiable, e.g. the impact of a plan termination on employees, or the perception of a large annuity purchase by shareholders, financial analysts and rating agencies. Such subjective elements would have to be considered carefully before a plan sponsor decides to proceed with a buyout.

If you have any questions on the PRT Index or how it may be used, please contact us.

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5 Plan sponsors interested in getting a handle on their DB plan expenses may want to participate in the BCG Defined Benefit Expense Survey. For more information, click here.