

Liabilities Take Center Stage for Some Multiemployer Plans

By: [Rick Ratkowski](#), CFA, Director, Investment Strategies, [David Murad](#), CFA, ASA, CERA, Senior Manager, Investment Strategies

EXECUTIVE SUMMARY

On Friday, July 9th, the PBGC released the interim final rules regarding the multiemployer Special Financial Assistance (SFA) program pursuant to the American Rescue Plan Act of 2021. As mentioned in a previous [publication](#), the program provides much needed relief to multiemployer plans and provides greater benefit certainty for plan participants for years to come.

For now, the interim rules and PBGC guidance have confirmed investment grade fixed income as the investment vehicle for SFA assets. This means the fixed income investment strategy is a key pillar to structuring a successful program for any plan receiving assistance.

The guidance lays the foundation for analyzing fixed income strategies implemented by multiemployer plans and for exploring how adjustments to those strategies can improve plan solvency. It brings liability driven investing ("LDI") to the forefront for multiemployer plans receiving financial assistance. As LDI is not a one-size-fits-all solution, three different LDI approaches are explored: cashflow matching, duration matching, and dollar duration matching. Adopting LDI strategies provides greater certainty to plan sponsors than traditional asset focused fixed income investing. Not only will these strategies improve likely outcomes for plan sponsors, but in many cases improve 1-in-20 downside scenarios.

With at least six months away from seeing any substantial distributions to plans under this program, now is the time for plans to prepare.

Within this post we analyze:

- The impact of various fixed income strategies on a plan's solvency
- Considerations for determining appropriate fixed income strategy
- Key risks associated with strategies and potential outcomes

On Friday, July 9th, the PBGC released the interim final rules regarding the multiemployer Special Financial Assistance (SFA) program pursuant to the American Rescue Plan Act of 2021. The program provides much needed relief to multiemployer plans and provides greater benefit certainty for plan participants for years to come. While we are still at least six months away from seeing any substantial distributions to plans under this program, given that SFA assets will make up the vast majority of eligible plans' portfolios, now is the time to prepare. While significant resources should go into the application process and ensuring that plans are able to secure as much assistance as allowed, our focus is on the underlying SFA investment strategy. For now, [PBGC guidance](#) has confirmed investment grade fixed income as the investment vehicle for SFA assets¹. This means the fixed income investment strategy is a key pillar to structuring a successful program for any plan receiving assistance. Allocating to credit and incorporating the risk characteristics of a plan's cashflow profile is vital to extending its life and optimizing SFA assets. As our analysis demonstrates, the optimal fixed income strategy

¹ Section 4262.14 of the regulations (<https://www.govinfo.gov/content/pkg/FR-2021-07-12/pdf/2021-14696.pdf>) outlines permissible investments, but PBGC's discussion of the regulation suggests other assets could be allowed after further consideration. Regardless, it is NISA's view that a substantial majority of SFA assets will be invested in investment grade fixed income.

can materially increase the amount of benefits paid² and help to minimize any remaining deficit upon SFA asset exhaustion.

Based on the regulation and discussion provided by the PBGC, our analysis utilizes the following assumptions:

- SFA assets can only invest in investment grade fixed income³.
- Current resources⁴ will offset the amount of SFA assets a plan can receive.
- Derivatives are not utilized in a material way. For purposes of our analysis, we do not allow derivatives to extend duration of the fixed income portfolio beyond 20 years.⁵
- No additional restrictions will be placed on the non-SFA assets. Based on the guidance, assuming all non-SFA assets are invested in return-seeking assets seems reasonable.

From a simulation perspective we will use a 12-year duration liability when discounted at the FTSE Pension Discount Curve. We assume the plan's applicable funding discount rate is 7.5%.⁶ Unlike our [prior post](#) where we used a deterministic model, here we apply a stochastic approach to simulate interest rates, credit spreads, and equity returns to project when SFA and non-SFA assets are depleted and the resulting remaining liability. A high-level overview of the assumptions is listed in Table 1 below:

Table 1

	Risk Premium / Adjusted Spread	Volatility
Equity	4.50%	17.88%
Aggregate	0.23%	0.36%
AA Corporate (6-year duration)	0.32%	0.62%
Inv. Grade Corp. (6-year duration)	0.58%	1.08%

Adjusted spread assumes a 75% capture of the index reported spread.
 Source: NISA calculations, Bloomberg Index Services Ltd.

As of 3/31/21, including anticipated relief assets and regardless of initial non-SFA assets, the starting funded status of this illustrative plan is 71% using the FTSE Pension Discount Curve⁷. Assuming the non-SFA assets are exclusively invested in return-seeking assets, the following initial asset allocations would apply across our simulations for the various funded statuses.

² For the purpose of this analysis and throughout this piece, non-investment expenses are considered as part of benefit payments.

³ The interim final rules specifically allow up to a 5% allocation to non-investment grade securities as long as they were investment grade at purchase.

⁴ PBGC notes this includes plan assets and income (contributions, investment returns, etc.). For the purposes of this piece, the present value of future contributions and other inflows is considered to be assets.

⁵ From our perspective, there may be cases where the use of derivatives will allow a higher duration and may be appropriate.

⁶ Plans that use funding discount rates below the applicable 3rd segment rate + 200 bps will receive higher SFA all else equal.

⁷ While a number of factors will influence the actual calculation of SFA assets and therefore the funded status of a plan after receiving these assets, we believe this funded status represents a reasonable estimate of where the sample plan would be using the mark-to-market FTSE Pension Discount Curve and serves as a useful starting point to illustrate the value of various investment strategies without loss of generality.

Table 2

Original Funded Status at 7.5% Discount Rate	Return-seeking Allocation (e.g., Non-SFA Assets)	Fixed Income Allocation (e.g., SFA Assets)
0%	0%	100%
10%	9%	91%
20%	17%	83%
30%	26%	74%
40%	34%	66%

Using this model, we considered five allocation strategies for the SFA assets. These strategies fit into two genres: traditional fixed income strategies and liability driven investing (LDI) strategies.

Table 3

	Strategy Approach	Description
Traditional Fixed Income Strategies	Aggregate	Fixed income investments are benchmarked to the Bloomberg Barclays U.S. Aggregate, which as of 3/31 is comprised of 37% Treasuries, 30% securitized, and 33% credit with an option adjusted spread of 31 bps.
	Corporate-focused	An investment-grade corporate strategy benchmarked to the duration of the Bloomberg Barclays U.S. Aggregate. This strategy allows the plan sponsor to increase the expected return of the plan by accepting additional credit risk but holds the duration constant.
Liability Driven Investing Strategies	Cashflow Driven Investing	An investment-grade corporate portfolio designed to immunize as many cashflows as possible. This strategy provides the highest degree of certainty of the number of payments the fixed income portfolio can make when viewed in isolation. This results in shorter duration than the liability.
	Duration Matched	The investment grade corporate fixed income is invested at a duration equal to the total liability. For example, a 10-year duration liability results in a 10-year duration portfolio.
	Dollar Duration Matched	The investment grade corporate fixed income is invested at a dollar duration equal to the dollar duration of the liability. In our simulation a 20-year duration cap is used under the assumption the sponsors will be unable to use derivatives in a material way. This results in the longest duration fixed income portfolio.

Measuring Success

We focus on two metrics for comparing strategies: 1) years until total assets are exhausted and 2) remaining liability when assets are exhausted⁸. Only focusing on “years until asset exhaustion” would ignore that a majority of the liabilities will be satisfied before the 30-year target is achieved and provides no information on the economic value at exhaustion. This economic value can be as much related to interest rates at exhaustion as to years until exhaustion. Additionally, for each strategy we examine the different outcomes in the tail. A strategy may do relatively well in the expected case, but result in relatively poor outcomes at the 5th percentile (i.e., a 1-in-20 downside outcome). Knowing how bad an outcome can be in a downside scenario is useful for selecting the ultimate investment strategy.

⁸ Remaining liability at asset exhaustion is calculated by taking the present value of the remaining liability cash flows discounted at the simulated FTSE Pension Discount Curve as of the exhaustion date, then discounting this value back to the simulation start date with the original FTSE Pension Discount Curve. This value is then expressed as a percentage of the original liability when valued based on the original FTSE Pension Discount Curve.

While the assumptions used in this paper are reasonable, every plan, consultant, and actuary will have different assumptions. The results presented below can be sensitive to the underlying assumptions used. However, we believe the relative tradeoffs between strategies and “big picture” questions are less sensitive to the underlying assumptions used. This model provides a fairly robust framework for designing the appropriate fixed income investment strategy for the SFA assets.

Traditional Fixed Income Strategies

For many eligible plans, the default fixed income benchmark is the U.S. Aggregate. This benchmark contains a substantial allocation to zero-spread or low-spread securities. By switching to a similar duration corporate benchmark, we can assess the impact of switching to an all investment grade credit portfolio. As of 3/31/21, the spread on Bloomberg Barclays U.S. Aggregate index was 31bps; a similar duration investment grade corporate benchmark would have 77bps of spread. In our modeling, we assume that an additional 50bps of performance could be earned through active management against either benchmark.

Not surprisingly, as the table shows below, the median outcome is improved by taking higher levels of spread risk in the portfolio. For a 12-year duration liability, this results in an expectation of making 16.4 years of benefit payments for the corporate strategy versus 15.8 years for the U.S. Aggregate Strategy with SFA assets, an increase of 0.7 years of benefit payments. Similarly, the remaining unpaid liability has decreased from 26.7% with the Aggregate strategy to 24.8% under the corporate strategy, a near 2-percentage point reduction. Put another way, the expected terminal deficit would be ~7% smaller by using a corporate strategy.

Table 4

Median Outcome	Years of Benefit Payments			Residual Liability			
	Funded Status at 7.5% Discount Rate	Base Case: U.S. Aggregate	Corporate	Additional Years	Base Case: U.S. Aggregate	Corporate	Reduction
0%	15.8	16.4	16.4	0.7	26.7%	24.8%	-1.9%
10%	17.4	18.0	18.0	0.7	22.1%	20.6%	-1.5%
20%	19.0	19.8	19.8	0.8	18.2%	16.9%	-1.6%
30%	20.9	22.0	22.0	1.2	14.8%	13.2%	-1.6%
40%	22.5	23.8	23.8	1.3	12.1%	10.2%	-1.9%

Additional results are available in Tables 9 and 10 in the Appendix which show the full breakdown of all strategies.

Liability Driven Investing (LDI) Strategies

LDI strategies provide a way for sponsors to manage risk associated with the future liability cashflow stream. They do so by seeking to “lock in” or reduce the future variance of assets against the present value of the total benefit stream or some subset of it today. While LDI strategies should play a role in any pension risk management exercise, this is especially underscored with this program given that SFA assets make up a substantial portion of the total portfolio and the stated objective of providing 30 years of benefit payments for participants. However, LDI is very much not a one-size-fits-all strategy and each plan’s unique sensitivities may

shift its desired implementation. As such, NISA explores three LDI strategies which could have varying levels of applicability depending on a plan's sensitivities to downside risk, ability/willingness to use derivatives, future contributions, and liability duration. All the LDI strategies are compared to the U.S. Aggregate strategy as a base case. In principal, by "locking in" the present value of the benefit stream there is more certainty surrounding what equity returns and manager alpha would be needed to close the gap. In addition, our model has a modest term premium of 15-25bps, which, all else equal, tilts the exposure to longer duration bonds. The benefit of *longer* duration LDI strategies becomes more pronounced when there is a higher allocation of non-SFA assets. This is driven by the negative correlation observed between equity and interest rates over the prior 20 years.

The first strategy, which results in the shortest duration of the LDI strategies, is to construct a portfolio to **cashflow match** the expected benefit payments that can be hedged with SFA assets. Said differently, SFA assets would be used to cashflow match benefit payments starting in year 1 until SFA assets are exhausted. At that point, non-SFA assets would then be used to make future benefit payments. This structure provides an exceptionally high degree of certainty around payments that are immunized, but does not provide protection against changes in the present value of longer dated cashflows.

The **duration matching** strategy invests the fixed income assets at the duration of the liability. This is not a perfect cashflow match but extends the portfolio duration modestly beyond a cashflow matching strategy. For plans that desire a more traditional benchmark, this strategy can be easily implemented using a blend of long and intermediate corporate or credit indices structured to hit the desired duration target.

The third seeks to match the entire **dollar duration** of the liability. In an entirely unconstrained framework, this strategy would be able to use derivatives to match the total interest rate sensitivity of the liability. However, given the unique nature of the SFA assets and potential restrictions on non-SFA assets a maximum duration of 20 years was implemented. This constraint becomes more binding when non-SFA assets make up a higher allocation of the portfolio.

The tables below show the median outcome for the LDI strategies versus the base case.

Table 5

Median Outcome	Years of Benefit Payments				Additional Years of Payments Over Base Case		
	Funded Status at 7.5% Discount Rate	Base Case: U.S. Aggregate	Cashflow Matched	Duration Matched	Dollar Duration Matched	Cashflow Matched	Duration Matched
0%	15.8	17.2	17.4	18.1	1.5	1.7	2.4
10%	17.4	18.8	19.2	21.0	1.4	1.8	3.7
20%	19.0	20.4	20.7	22.6	1.4	1.7	3.6
30%	20.9	22.7	22.9	24.5	1.8	2.1	3.6
40%	22.5	24.4	25.2	26.7	2.0	2.7	4.2

Source: NISA calculations.

Table 6

Median Outcome	Remaining Liability				Additional Liability Reduction Over Base Case		
	Funded Status at 7.5% Discount Rate	Base Case: U.S. Aggregate	Cashflow Matched	Duration Matched	Dollar Duration Matched	Cashflow Matched	Duration Matched
0%	26.7%	22.7%	22.0%	20.1%	-4.0%	-4.7%	-6.6%
10%	22.1%	18.6%	17.8%	14.4%	-3.5%	-4.3%	-7.7%
20%	18.2%	15.2%	14.6%	12.3%	-3.0%	-3.6%	-5.9%
30%	14.8%	11.7%	11.3%	9.5%	-3.1%	-3.4%	-5.3%
40%	12.1%	9.4%	8.2%	6.8%	-2.7%	-3.9%	-5.3%

Source: NISA calculations.

At the median we see a healthy pickup between the cashflow matched and U.S. Aggregate strategy. Using the Remaining Liability measure, this is most pronounced when less non-SFA assets are available⁹. Duration and dollar duration matched strategies provide even more improvement over the base case. This is the product of a modestly upward sloping spread curve and slight term premium. Additionally, in scenarios where the plan has initial non-SFA assets, the historically negative correlation between interest rates and equity markets creates a more diversified portfolio versus the base case.

When examining the 1-in-20 downside outcomes for a plan which has only SFA assets, the dollar duration matching strategy has a greater amount of downside risk in terms of Years of Benefit Payments. Any underfunded plan which matches the dollar duration of its entire liability, by design, is not cashflow matched. In this situation, the plan has hedged the risk associated with the liability's longer dated cashflows at the risk of depleting assets to cover nearer-term liability cashflows in a rising rate environment. This liquidation risk supersedes the benefits of hedging in the extreme case where only SFA assets are present. For a sponsor with non-SFA assets this outcome is less likely given the diversification between rates and equities. The 1-in-20 downside results may still be a bad path, but it is less bad because of the return-seeking asset allocation. Return-seeking assets likely help cushion the portfolio when interest rates rise. In risk-off scenarios they are likely to be offset by a fall in interest rates. For a plan concerned about tail events, sticking with the base Aggregate allocation still results in a worse outcome for participants. Depending on their preference set, a plan with less non-SFA assets may prefer a cashflow matching strategy, while a plan with more non-SFA assets might prefer a dollar duration match.

⁹ Since non-SFA assets offset the financial assistance amount, they directly reduce the amount of fixed income assets. This implicitly reduces the duration of the cashflow matching strategy and reduces the wedge between the cashflow matching strategy and the base case.

Table 7

1-in-20 Downside	Years of Benefit Payments				Additional Years of Payments Over Base Case		
	Funded Status at 7.5% Discount Rate	Base Case: U.S. Aggregate	Cashflow Matched	Duration Matched	Dollar Duration Matched	Cashflow Matched	Duration Matched
0%	15.2	16.3	15.8	14.4	1.1	0.6	-0.8
10%	15.0	15.6	16.2	16.1	0.6	1.2	1.1
20%	14.0	14.4	15.1	15.9	0.4	1.1	1.9
30%	13.3	13.3	13.9	14.7	0.1	0.6	1.4
40%	12.4	12.5	12.8	13.5	0.1	0.4	1.1

Source: NISA calculations.

Table 8

1-in-20 Downside	Remaining Liability				Additional Liability Reduction Over Base Case		
	Funded Status at 7.5% Discount Rate	Base Case: U.S. Aggregate	Cashflow Matched	Duration Matched	Dollar Duration Matched	Cashflow Matched	Duration Matched
0%	30.3%	27.2%	25.8%	28.2%	-3.1%	-4.5%	-2.0%
10%	31.4%	30.4%	27.7%	25.7%	-1.0%	-3.8%	-5.7%
20%	34.8%	33.8%	30.7%	27.6%	-0.9%	-4.0%	-7.2%
30%	38.1%	38.2%	35.1%	32.1%	0.1%	-2.9%	-5.9%
40%	41.2%	41.8%	39.2%	36.1%	0.6%	-2.1%	-5.1%

Source: NISA calculations.

Dynamic Strategies

The proposed strategies are assumed to remain constant over the life of the plan. While this is the likely reality for the foreseeable future, eventually changes to the investment strategy will be warranted. While outside the scope of this piece, shifting to a dynamic strategy as opportunities present themselves will ultimately result in better outcomes for plan participants. Some examples of potential environments and the corresponding portfolio adjustments include:

- Higher than expected equity returns, decreases in participant longevity, and higher fixed income manager alpha could allow for de-risking of non-SFA assets. Based on NISA assumptions, a 12-year duration plan receiving financial assistance is approximately 71% funded on the basis of a

AA discount curve with the return-seeking assets allocation ranging between 0-34%.¹⁰ At this funded level immediate de-risking steps may not be necessary, but over time, adopting a de-risking glidepath as funded status improves would better protect plan assets.

- Shifting the fixed income strategy to longer duration assets as the expected asset depletion date extends. A plan that selects cashflow matching as a starting point may wish to switch to a duration or dollar duration matched strategy as being able to make longer dated benefit payments becomes feasible.
- As SFA assets are paid down, non-SFA assets will naturally represent a growing percentage of the overall portfolio. While not explored in this paper, this will have implications for investment policy design.

Having flexibility to dynamically adjust policy allocations and adopt de-risking glidepaths can ultimately improve outcomes for plan participants over the default static strategies.

Conclusion

The SFA program provides a unique opportunity to adjust investment strategy to provide a higher degree of certainty in making benefit payments than what would have been achievable with traditional asset-focused investment strategies. By shifting to liability-focused fixed income mandates, either through cashflow, duration, or dollar duration matching, plan sponsors can increase the amount of expected benefits made and reduce uncertainty. The specific implementation will be based on plan cashflows, non-SFA asset allocation, capital market assumptions, and a plan's willingness to trade off a higher expected outcome for more certainty during extreme events. The takeaways of increasing duration and shifting to an LDI focus to provide greater outcome certainty will hold across plans.

If you are currently evaluating the fixed income investment approach for a multiemployer pension, please feel free to reach out to NISA on how the topics of this piece would be applicable to you.

¹⁰ The RSA range and funded status assume the discount rate used to determine the SFA was greater than or equal to the applicable 3rd PPA segment rate + 200 bps.

Appendix

The tables below show the detailed results for all investment strategies for years until assets are exhausted along with the remaining liability when exhaustion occurs.

Table 9

Funded Status at 7.5% DR	Outcome	Years of Benefit Payments Made				
		Base Case: U.S. Aggregate	Corporate Strategy	Cashflow Matched	Duration Matched	Dollar Duration Matched
0%	1-in-20 Upside	16.4	17.2	18.2	19.1	24.0
	Median	15.8	16.4	17.2	17.4	18.1
	1-in-20 Downside	15.2	15.7	16.3	15.8	14.4
10%	1-in-20 Upside	40+	40+	40+	40+	40+
	Median	17.4	18.0	18.8	19.2	21.0
	1-in-20 Downside	15.0	15.6	15.6	16.2	16.1
20%	1-in-20 Upside	40+	40+	40+	40+	40+
	Median	19.0	19.8	20.4	20.7	22.6
	1-in-20 Downside	14.0	14.5	14.4	15.1	15.9
30%	1-in-20 Upside	40+	40+	40+	40+	40+
	Median	20.9	22.0	22.7	22.9	24.5
	1-in-20 Downside	13.3	13.5	13.3	13.9	14.7
40%	1-in-20 Upside	40+	40+	40+	40+	40+
	Median	22.5	23.8	24.4	25.2	26.7
	1-in-20 Downside	12.4	12.6	12.5	12.8	13.5

Source: NISA calculations.

Table 10

		Remaining Liability				
Funded Status at 7.5% DR	Outcome	Base Case: U.S. Aggregate	Corporate Strategy	Cashflow Matched	Duration Matched	Dollar Duration Matched
0%	1-in-20 Upside	23.8%	21.9%	19.0%	18.4%	10.3%
	Median	26.7%	24.8%	22.7%	22.0%	20.1%
	1-in-20 Downside	30.3%	28.0%	27.2%	25.8%	28.2%
10%	1-in-20 Upside	0.0%	0.0%	0.0%	0.0%	0.0%
	Median	22.1%	20.6%	18.6%	17.8%	14.4%
	1-in-20 Downside	31.4%	30.4%	30.4%	27.7%	25.7%
20%	1-in-20 Upside	0.0%	0.0%	0.0%	0.0%	0.0%
	Median	18.2%	16.6%	15.2%	14.6%	12.3%
	1-in-20 Downside	34.8%	33.5%	33.8%	30.7%	27.6%
30%	1-in-20 Upside	0.0%	0.0%	0.0%	0.0%	0.0%
	Median	14.8%	13.2%	11.7%	11.3%	9.5%
	1-in-20 Downside	38.1%	37.3%	38.2%	35.1%	32.1%
40%	1-in-20 Upside	0.0%	0.0%	0.0%	0.0%	0.0%
	Median	12.1%	10.2%	9.4%	8.2%	6.8%
	1-in-20 Downside	41.2%	41.3%	41.8%	39.2%	36.1%

Source: NISA calculations.

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