

RYANIAIN OUARIERIS

2Q 2024

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Ryan ALM Inc. ryanalm.com



Pension Performance Monitor (Total Returns %)

Pension Liabilities	1H'24 (%)
Market (Treasury STRIPS)	-4.6
ASC 715 (FAS 158)	-3.6
PPA (MAP 21 = 3 Segments)	1.0
PPA (Spot Rates)	-3.4
GASB /ASOP (7.25% ROA)	3.7
Pension Assets	
Cash (Ryan Cash Index)	2.5
Bloomberg Barclay Aggregate	-0.7
S&P 500	15.3
MSCI EAFE International	5.7
Asset Allocation Model ¹	9.2

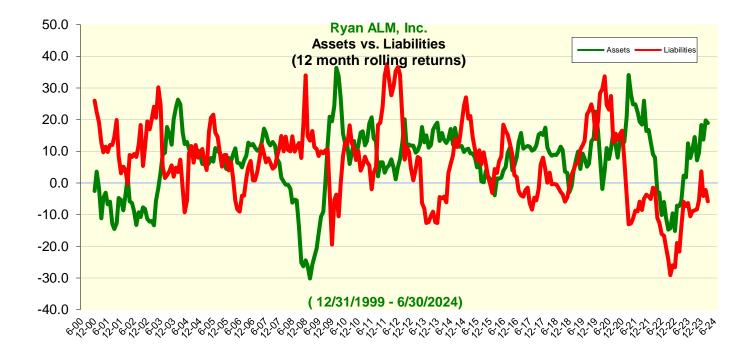
Pension Assets Minus Liabilities

Market (Treasury STRIPS)	13.8
ASC 715 (FAS 158)	12.8
PPA (MAP 21 = 3 Segments)	8.2
PPA (Spot Rates)	12.6
GASB/ASOP (7.50% ROA)	5.5

Based on the weights of the Ryan ALM Asset Allocation Model*, the difference in pension asset growth versus liability growth for 1H'24 reveals a significantly positive comparison of pension assets minus pension liabilities no matter how pension liabilities are calculated. Corporate plans showed more robust funding gains (12.8%) versus their liability benchmarks (ASC 715), while Public and Multiemployer plans using the ROA as the discount rate had more modest outperformance versus their liability growth rates (5.5%). Strong asset growth in equities, primarily in the US, continued into the second quarter, while a rise in US interest rates so far in 2024 weighed on bonds.

^{*} Model weights are: 5% Ryan Cash, 30% Bloomberg Barclay Aggregate, 60% S&P 500, and 5% MSCI EAFE International



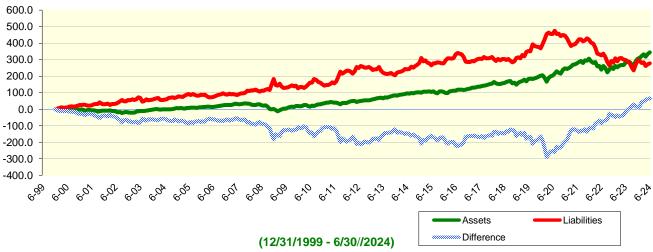


Despite the rise in the US rates during the first half of 2024. US equities as measured by the S&P 500, were up 15.3% year-to-date. Most of the gain continues to be attributable to the Technology Sector and primarily NVIDIA. Large cap stocks, especially those with a growth focus (+23.5), advanced nicely, but small cap stocks continue to dramatically underperform, as the S&P 600 registered a -0.7% YTD result. International stocks enjoyed a dose of good performance, too, with the EAFE Index advancing nearly 6.0% for the first six months.

As previously discussed, longer-dated US interest rates rode their own rollercoaster during 2023, rising rapidly into October only to quickly reverse during the last 2+ months of the year, as market participants concluded that the Fed had achieved its goal. However, US rates have trended higher in 2024 and the US Treasury curve is up roughly 40 bps YTD. A fairly strong US labor market and continuing economic growth (no recession to date) create challenges for the US Fed, as they monitor the progress made to date on inflation. The market certainly believes that the Fed will cut rates at some point this year, but those expectations have been modified from as many as 6-7 cuts to perhaps 1-2 later this year beginning as early as the September FOMC meeting.







Most pension funds enjoyed a funded ratio surplus in 1999, but pension asset growth had underperformed liability growth (based on the Ryan ALM Treasury STRIPS discount rate) fairly consistently for much of the next two decades. We are pleased to report that the deficit has recently been eliminated as a result of the Fed's tightening campaign, as rising interest rates reduce the present value of those future pension obligations. The cumulative difference is now 65.7 on a compound index basis starting at 100 on 12/31/99. The difference had been as much as -197 in 2020. Starting at a funded ratio of 100 on 12/31/99, the estimated funded ratio today would be 117.4%, which is based on the Ryan ALM liability calculations and hypothetical asset allocation. It is trending in the same direction to the estimated funded ratio provide by Milliman in the Milliman 100 Pension Funding Index (PFI) which stood at 103.4% at the end of May. Strong market returns during during the first 6 months and US interest rates that rose relative to the end of 2023 have combined to support the funded ratio for the various types of DB plans, which have dramatically improved from the end of 2022's challenging market environment.

US interest rates are not high relative to history, but they do provide the plan sponsor community with the opportunity to reduce the risk within their plans by defeasing a portion of the liabilities such as the Retired Lives Liability (RLL). This is an opportunity that hasn't been available in decades as US rates plummeted to historic lows. We encourage you to act today before this opportunity fades.



Cumulative returns of assets versus liabilities (%)

	Assets	Liabilities	Difference	Cumulative Difference	Funded Ratio
2000	-2.5	26.0	-28.5	-28.5	77.4
2001	-5.4	3.1	-8.5	-37.6	71.0
2002	-11.4	19.5	-30.9	-73.4	52.7
2003	20.0	2.0	18.1	-60.1	62.0
2004	8.9	9.4	-0.4	-66.1	61.8
2005	4.4	8.9	-4.4	-76.8	59.2
2006	12.3	0.8	11.4	-64.6	66.0
2007	6.4	11.0	-4.6	-77.5	63.2
2008	-24.5	33.9	-58.4	-181.6	35.7
2009	15.7	-19.5	35.3	-106.9	52.9
2010	11.9	10.1	1.8	-115.7	53.8
2011	3.3	33.8	-30.5	-195.7	41.5
2012	11.8	4.5	7.3	-194.3	44.4
2013	19.0	-12.6	31.6	-120.7	60.5
2014	9.7	24.4	-14.6	-177.1	53.4
2015	1.2	-0.5	1.7	-172.8	54.3
2016	8.1	1.9	6.2	-163.4	57.6
2017	15.2	7.9	7.2	-160.3	60.9
2018	-3.0	-1.3	-1.7	-162.7	60.4
2019	22.8	13.9	8.9	-163.9	65.0
2020	14.4	16.5	-2.1	-197.1	63.8
2021	17.4	-4.2	21.6	-116.1	77.8
2022	-15.2	-26.6	11.4	-39.0	89.8
2023	18.3	3.7	14.6	9.9	102.5
1H'24	9.2	-4.6	13.8	65.7	117.4

Source: RyanALM, Inc.

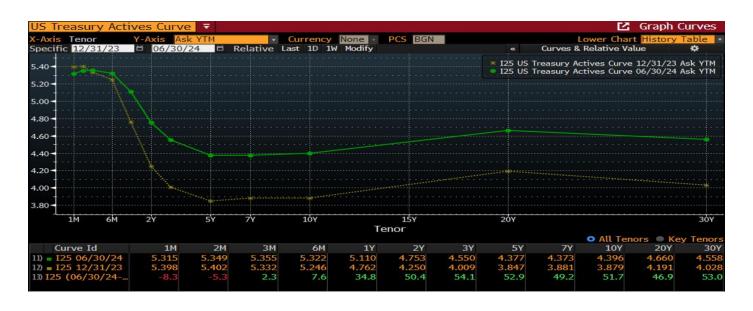


ECONOMIC SNAPSHOT AS OF JUNE 30, 2024

	2023	2Q'24
U.S. GDP	2.6%*	1.5%*
US Debt	\$34.0 T	\$34.6 T
CPI - U	3.1%^	3.25%^
Unemployment Rate	3.7%	4.0%
30-Year Treasury Yield	4.08%	4.51%
10-Year Treasury Yield	3.94%	4.36%
2-Year Treasury Yield	4.33%	4.71%
3 Mo. T-Bills Yield	5.37%	5.36%
S&P 500	4,742.83	5,460.48
Nasdaq 100	14,765.94	17,732.60
R2000	2,012.80	2,047.69
Gold	2,075.20	2,339.60
Oil	\$71.31	\$81.54
Existing Single Family sales	3.41M**	4.11M**

^{*}GDPNow forecast as of July 3, 2024, ^annual # through May 31, 2024, ** as of May 31, 2024

Year-to-date change in the Treasury Yield Curve





Sharing Perspective

Bag The Agg!

The first bond index was invented by Arthur Lipson in the summer of 1973 as the head of fixed income research at Kuhn Loeb. I started working for Art in the summer of 1977. I consider Art a quantitative genius who taught me much about bond math and index construction. Lehman Bros. acquired Kuhn Loeb at the end of 1977.

Ryan ALM, Inc. Celebrates 20th Anniversary

Ryan ALM, Inc. was incorporated in Delaware on June 15, 2004. Ronald J, Ryan, founder, says that "we created our company to be dedicated to asset liability management (ALM) as our name suggests. We are quite proud of our progress and achievements in ALM."

ARPA Update as of June 28, 2024 – A Time to Celebrate!

As we complete the first half of 2024 and get ready for the Fourth of July celebrations with family and friends, we believe that it is fitting to celebrate the success to date of the ARPA pension legislation and the PBGC's implementation that has positively impacted so many Americans.

Good Ideas Are Often Overwhelmed

We have a tendency in our industry to overwhelm good ideas with much too much money. Asset flows can be evil as they drive valuations up as too much money pursues to few good ideas. The "winner" in the bidding competition frequently (eventually) becomes the loser in the long run.

Money Managers recaptured ½ of the 2022 losses – Should We Be Pleased?

P&I has produced an article highlighting the fact that money managers recaptured nearly half of the institutional assets lost (-\$9 trillion) in 2022's market correction. They mention that this was accomplished despite "lingering economic and political uncertainties that kept a lot of money sidelined...

He Said What?

I'd like to thank Bill Gross for his honest assessment that he just provided on the likely failure of "Total Return" bond products going forward. Here are his thoughts that were summarized in a Bloomberg Business email: *Bill Gross says his "total return" strategy—the one that revolutionized the bond market— "is dead"!*



Total Assets

LATEST THINKING

We continue to be thrilled that the American Rescue Plan Act (ARPA) was passed as part of the \$1.9 trillion stimulus package. This legislation has many of the elements of the Butch Lewis Act which Ryan ALM's Ron Ryan was instrumental in providing the defeasance language. As a reminder, any Special Financial Assistance (SFA) received must be kept separate and managed conservatively to ensure that the funds received and earmarked to pay the promised benefits (through 2051) are actually available. The PBGC has approved the SFA applications for 84 multiemployer plans through June 30, 2024, totaling just >\$60.4 billion (including supplemental filings and interest) in government grants.

We were thrilled to be recently appointed as an asset manager using our cash flow matching (CFM) capability for a foundation. This particular fund has decided to sunset its activities in about 15 years. CFM is the perfect strategy in this case, as we can secure each forecasted grant distribution until operations cease. Please don't hesitate to reach out to us if you'd like to learn more about what we can do for E&Fs.

We are very committed to educating plan sponsors and their advisors about the positive impact of rising interest rates and the impact those have on the ability to de-risk DB pensions through Cash Flow Matching (CFM). The US Federal Reserve is determined to conquer inflation and the multiple rounds of Fed Funds Rate increases has the rate at 5.25%-5.50%. The data (as of 6/24/24) below is a representative client. The projected cost savings through defeasing the plan's liabilities is incredible. In this example, it is **41.2%** covering a period through 2/30/54 and limiting the universe to Treasuries.

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	LB	P Summary		
	STRIPS	LBP Model	Cost Savings (and %)
Future Value	\$1,281,657,981	\$1,281,657,981		
Present Value	\$700,233,906	\$754,115,842	\$527,542,140	41.16%
YTM	4.51%	4.34%		
Discount Rate	4.56%	3.96%		
MDuration	12.26	9.19		
LBP Model Efficiency		106.87%		



Ryan ALM's mission is to solve liability driven problems through low cost, low risk solutions.

About Ryan ALM, Inc.

Ryan ALM was founded by Ronald J. Ryan, CFA on June 15, 2004 as an Asset/Liability Management firm. The firm has built a turnkey system of proprietary synergistic products designed to measure liabilities as a Custom Liability Index (CLI) and manage assets to the CLI as Liability Beta Portfolios.

Ryan ALM is unique in having its own proprietary Index company named ALM Research Solutions, LLC. This company builds both custom and generic bond indexes. Such indexes range from Custom Liability Indexes to ETF Indexes.

Our Liability Beta PortfolioTM is our proprietary cost optimization model that "cash flow matches" clients projected liability benefit payment schedules at the least cost using investment grade bonds. In this higher interest rate environment, our portfolios are producing cost savings of >2%/year. Our LBP best represents the core portfolio (or liquidity bucket) of a pension plan or endowment/foundation.

FASB requires corporations and nonprofit organizations to price their liabilities at certain discount rates. Importantly, Ryan ALM provides these discount rates in conformity to ASC 842: Lease Accounting and ASC 715: Pensions. For more info: Read here

Our team has been recognized for our expertise and results including Ron Ryan having won the William F. Sharpe Index Lifetime Achievement Award.



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