Ryan ALM
Asset/Liability Management

# RYAN ALM QUARTERLY

2Q 2023

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## Pension Performance Monitor (Total Returns %)

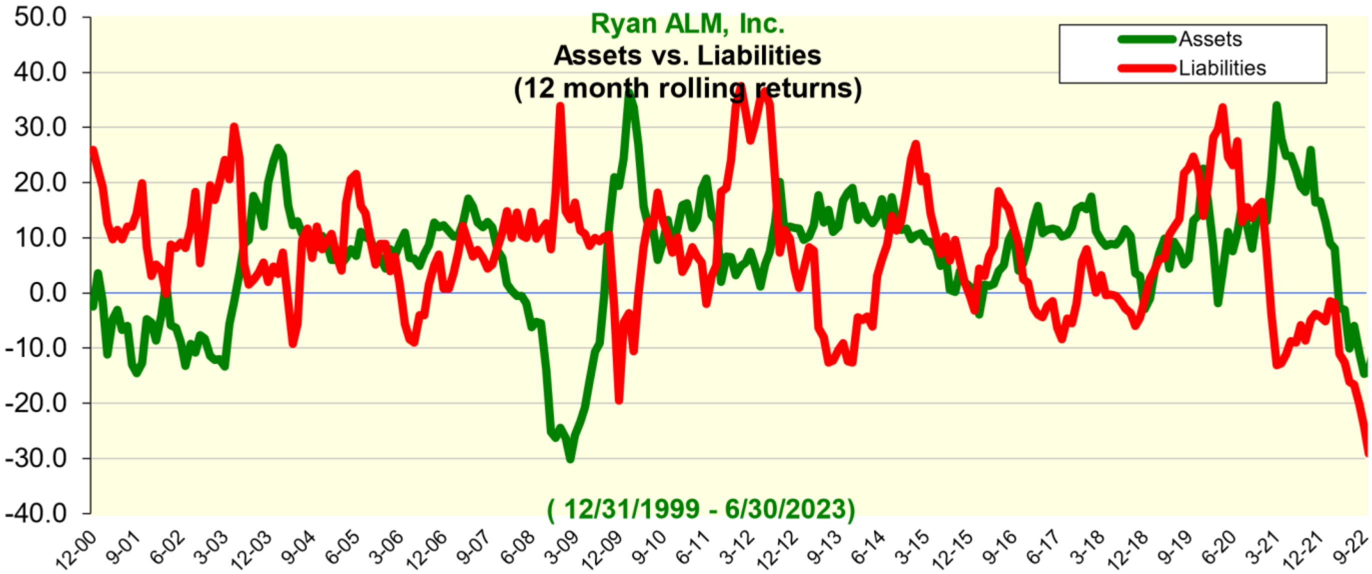
| Pension Liabilities | YTD '23 (%) |
|---|---|
| Market (Treasury STRIPS) | 4.2 |
| ASC 715 (FAS 158) | 7.8 |
| PPA (MAP 21 = 3 Segments) | 5.5 |
| PPA (Spot Rates) | 7.3 |
| GASB /ASOP (7.25% ROA) | 3.6 |

| Pension Assets | |
|---|---|
| Cash (Ryan Cash Index) | 2.3 |
| Bloomberg Barclay Aggregate | 2.1 |
| S&P 500 | 16.9 |
| MSCI EAFE International | 12.2 |
| Asset Allocation Model[1] | 11.3 |

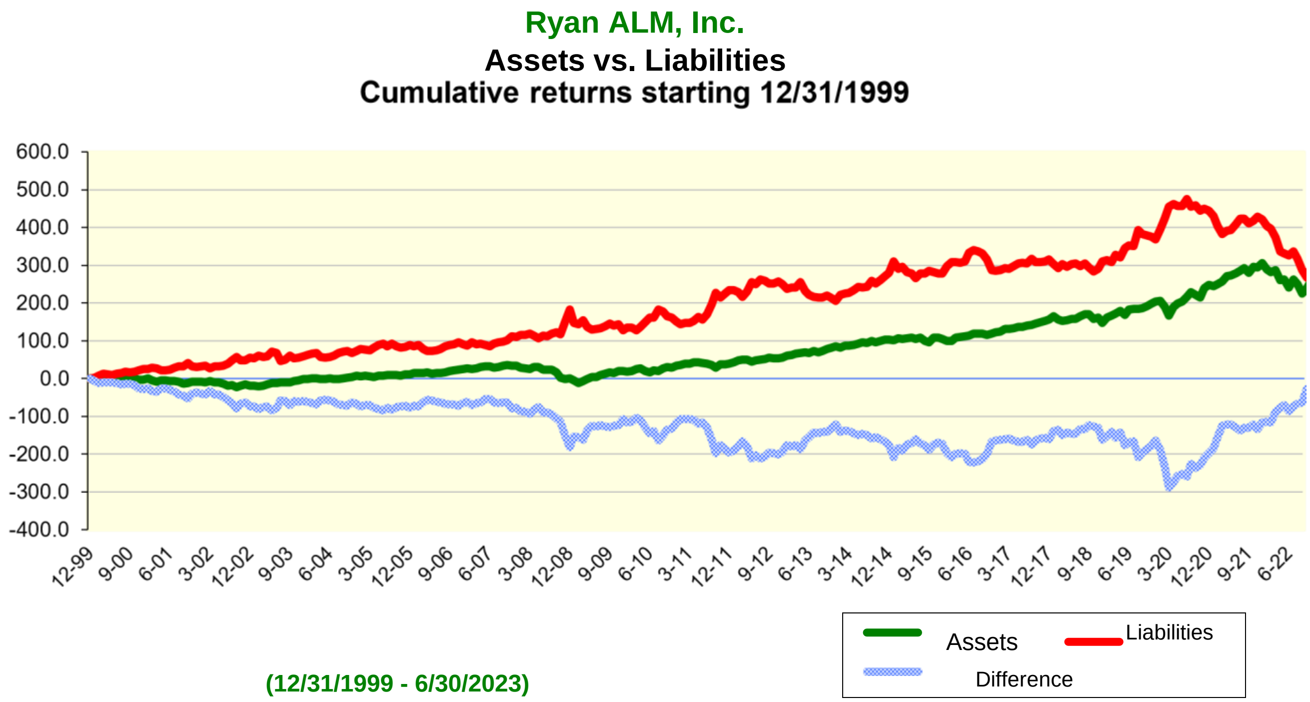
| Pension Assets Minus Liabilities | |
|---|---|
| Market (Treasury STRIPS) | 7.1 |
| ASC 715 (FAS 158) | 3.5 |
| PPA (MAP 21 = 3 Segments) | 5.8 |
| PPA (Spot Rates) | 4.0 |
| GASB/ASOP (7.50% ROA) | 7.7 |

Based on the weights of the Ryan ALM Asset Allocation Model*, the difference in pension asset growth versus liability growth for YTD '23 reveals a positive comparison of pension assets minus pension liabilities no matter how pension liabilities are calculated. Corporate plans showed more modest funding gains versus their liability benchmarks, while Public and Multiemployer plans using the ROA as the discount rate had more significant outperformance versus their liability growth rates. Strong asset growth from both equities and bonds had a positive impact on the relationship of plan assets to liabilities.

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




Are we at an inflection point or is the current risk on trade a bull market head-fake in a bear market environment? The bull markets for both equities and bonds that helped to close the gap between assets and liabilities ended abruptly in 2022, but 2023 to date has seen a significant about face and much better than most market participants would have imagined given the US interest rate sea change. The big question now on the minds of many investors involves the Fed and at what level of interest rates will they soon end. The FFR – now at 5.0%-5.25% is expected to be increased another 1 to 2 times before the Fed completes this incredible tightening. The Fed doesn't seem ready to declare victory over inflation, as the "core" inflation number now tops the CPI-U by nearly 2%, while the US labor markets remain historically strong.




Most pension funds enjoyed a funded ratio surplus in 1999, but pension asset growth has underperformed liability growth (based on the Ryan ALM Treasury STRIPS discount rate) fairly consistently for much of the past two decades. Although the deficit has narrowed quite considerably. The current level of underperformance is -16.0% on a compound index basis starting at 100 on 12/31/99. Starting at a funded ratio of 100 on 12/31/99, the estimated funded ratio today would be 96.0%, which is based on the Ryan ALM liability calculations and hypothetical asset allocation. Relatively strong market returns during the first half of '23 has the funded ratio for the various types of DB plans improving from the end of 2022 as pension liability growth trails pension assets. Continuing Federal Reserve rate increases will have an impact on liabilities, as the present value of those obligations will fall. It is anyone's guess what might happen to pension assets, too.

US interest rates have recently begun rising once more after a dramatic fall brought about by fear of a broadening banking crisis. Fortunately, it seems as if that crisis has not led to greater contagion. US rates should once again reflect the current economic environment which would suggest a higher level before year-end and no likely pivot from the FOMC.

**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 |
| **06/30/23** | 11.3 | 4.2 | 7.2 | -16.0 | 96.0 |

Source: Ryan ALM, Inc.

# Economic Snapshot as of June 30, 2023

| | 2022 | YTD ’23 |
|---|---|---|
| U.S. GDP | 2.2% | Est. 2.3%* |
| US Debt | $30.9 T | $32.5 T |
| CPI - U | 6.5% | 3.0% |
| Unemployment Rate | 3.5% | 3.6% |
| 30-Year Treasury Yield | 3.97% | 3.86% |
| 10-Year Treasury Yield | 3.88% | 3.84% |
| 2-Year Treasury Yield | 4.42% | 4.90% |
| 3 Mo. T-Bills Yield | 4.42% | 5.28% |
| S&P 500 | 3,831.87 | 4,450.38 |
| Nasdaq 100 | 10,939.76 | 13,787.92 |
| R2000 | 1,761.25 | 1,888.73 |
| Gold | 1,866.13 | 1,919.54 |
| Oil | $80.26 | $70.64 |
| Existing Single Family sales | 4.1 M | 4.3M** |

*GDPNow forecast as of July 10, 2023 and **as of May 2023

## Year-to-date change in the Treasury Yield Curve

## Sharing Perspective

**Pension Solution: Best Way to Hedge Interest Rate Risk**
Pension funds are faced with numerous risk factors. Perhaps, the greatest risk factor is Interest rate risk. If affects assets but especially liabilities. How pensions cope with Interest rate risk could determine the funded status and solvency of the plan.

**The Ryan ALM YTD '23 Pension Monitor**

Pension plan liabilities need to be measured and monitored regularly. Without knowledge of plan liabilities, the allocation of plan assets cannot be done efficiently or appropriately.

**Which Asset Allocation Produces the Most Uncertainty**

We understand that US public pension systems operate under different accounting standards (GASB) than those sponsored by private companies (FASB), but should those differences create asset allocation frameworks that differ so widely…

**What Is Risk from A Pension Perspective?**

We, at Ryan ALM, believe that ***Risk*** is best defined as the ***uncertainty*** of achieving the objective. Any argument? What is the ***primary*** objective of managing a pension plan? Again, we believe that it is the funding and ***SECURING***…

**What About Carol? She's Doing Better!**

Regular readers of this blog will know to whom I am referring when I mention the name, Carol. I started following Carol's saga from late 2017 to early 2018 and first wrote about her in June 2018,

**POBs Should Still be on the Table for Discussion**

Pension Obligation Bonds (POBs) were all the rage in 2021 following the historic collapse in US interest rates during the initial market reaction to Covid-19. You may recall that I wrote and spoke quite often on the subject…

# Latest Thinking

We are 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. Importantly, 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 50 multiemployer plans through June 30, 2023, totaling just about $49.7 billion (including supplemental filings) in government grants. The PBGC provided the "Final, Final Rules" related to the implementation of this legislation in Jul 2022. Several items within the original Interim Final Rules have been altered, including permissible investments for the SFA assets. We disagreed with some of these elements, particularly the allowance for 33% of the SFA to be invested in return-seeking assets (RSA), which would include investment grade bonds that aren't used to defease a plan's liabilities (benefits and expenses).

We are very committed to educating plan sponsors and their advisors about the impact of rising interest rates on traditional fixed income products, which continue to dominate pension portfolios. The end of an unprecedented bull market is here following a 39-year bond market rally. The US Federal Reserve is determined to conquer the significant inflation through multiple rounds of Fed Funds Rate increases. To date the Fed has increased rates by 5.0%5.25% with an expectation that we could see at least another 0.25% to 0.5% following the FOMC's rate pause in June. Even if inflation moderates from current levels, "sticky" inflation suggests that a 4% level is not out of the question. Historic "Real" rates of return would suggest long bonds with yields of 5-7% or higher. Despite the recent willingness on the part of the investment community to take on risk – see Nasdaq YTD. The investing environment will remain a challenging environment as inflation, rising rates, Fed Policy, stretched equity valuations, deteriorating earnings, the war in the Ukraine, China/Taiwan, China/Russia, etc.
weigh on markets and investors.

One critical way to limit the impact on your fund from these episodic events is to "Buy-Time" for your growth assets by bifurcating the asset allocation into 2 buckets – liquidity and Growth. We'd be happy to share with you our insights on this subject.

# 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 Portfolio™ 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.

***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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