FPPTA
De-Risking Your Asset Allocation

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Importance of Defined Benefit (DB) Plans

- **Defined Benefit plans (DB)** Only true retirement program
  - DB = monthly annuity until death or death of beneficiary
  - They exist to fulfill a financial promise to the participant

- **Defined Contribution plans (DC)**
  - Designed to provide supplemental retirement benefits
  - Asking untrained individuals to fund, manage, and then disburse a benefit through a DC plan is poor policy (IMHO)

Defined Benefit Plans

- DB must be protected and preserved for the masses
- Today’s session will focus on Preserving DB plans through a de-risking strategy
- I’ll cover assets, liabilities, asset allocation, and the importance of keeping a plan in good harmony.
- A fund is in good harmony if **Assets = Liabilities**
  - Reminder, liabilities = promise made to plan participants

Defined Benefit Plans—Liabilities

- Promised Benefits of the pension plan sponsor
- Based on participant's age, salary, years of service, expected longevity, etc.
- Actuaries forecast plan liabilities
- Accounting rules determine present value (PV)

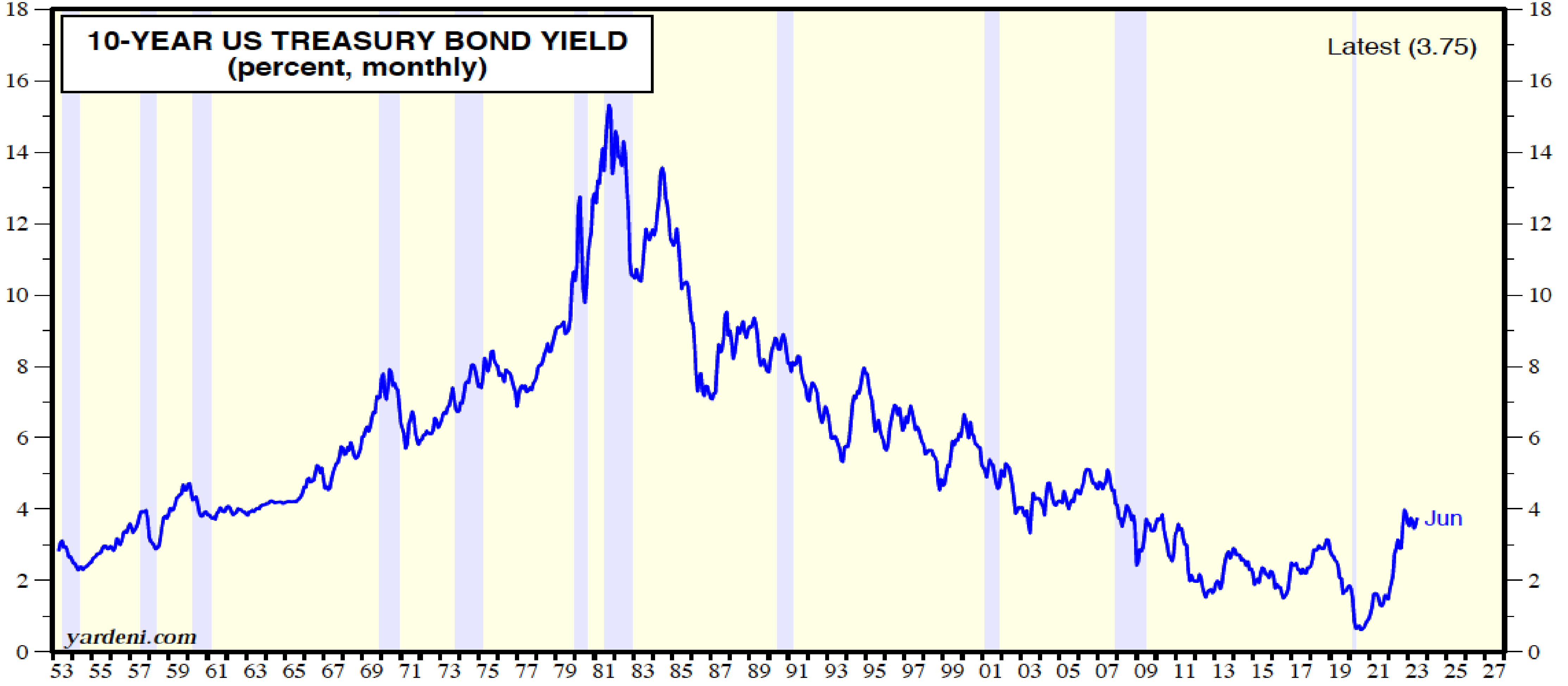
  GASB (public) and FASB (private)
- Important - Liabilities are bond-like… interest rate sensitive

Defined Benefit Plans—Liabilities

- Need to be measured, monitored, and managed
- Need to be done routinely > once per year or longer
- Benefits = Future value (FV) obligations
- Benefits are *NOT* interest rate sensitive
- Funded Ratio / Status require calculation of PV of liabilities
- **Requires Custom Liability Index (CLI)**
- Plan assets = PV or MV calculations
- We do NOT know the FV of assets except for bonds

Most Impactful Influence on the Capital Markets

Figure 1.



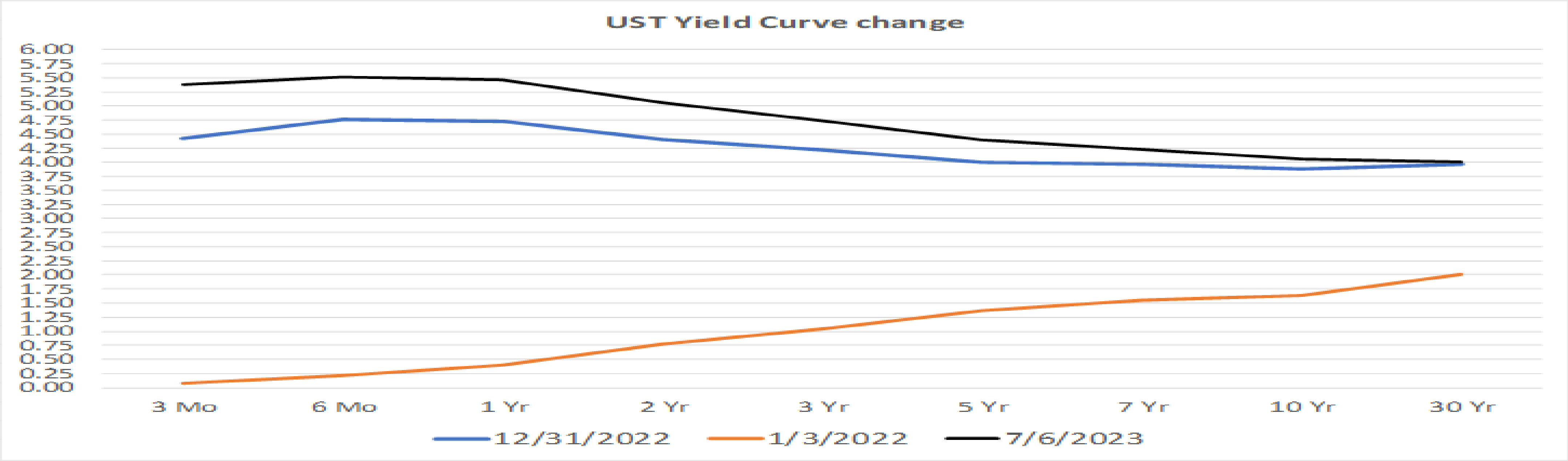
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Haver Analytics.

Defined Benefit Plans—US Interest Rates

- 40-year decline in US interest rates beginning in 1982 crushed pension funding
- Growth rate of liabilities > growth rate of assets
- October 13, 1981, 10-year Treasury = 14.90%
- $17.82 to defease a $1,000 30-year liability
- August 4, 2020, 10-year Treasury = 0.52%
- $860.40 to defease a $1,000 30-year liability
- August 18, 2003… 10-year Treasury = 4.23% - $301.00

The Yield Curve

Date	3 Mo	6 Mo	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	30 Yr
12/31/2022	4.42	4.76	4.73	4.41	4.22	3.99	3.96	3.88	3.97
1/3/2022	0.08	0.22	0.40	0.78	1.04	1.37	1.55	1.63	2.01
7/6/2023	5.37	5.51	5.46	5.05	4.74	4.39	4.23	4.05	4.00
Change 12-31-22 to 7-06-23	0.95	0.75	0.73	0.64	0.52	0.40	0.27	0.17	0.03



Source: Steve DeVito, Ryan ALM, Inc. 9/15/22

Current Asset Allocation Strategy— A Return Objective?

- Consultant, actuary, and plan sponsor determine ROA objective
- ROA objective = long-term target return
- Target ROA may have substantial annual standard deviation
- Asset allocation model has ROA for each asset class

Asset Allocation - Modern Portfolio Theory

- Rational investors will diversify to optimize their risk tolerance and return requirement

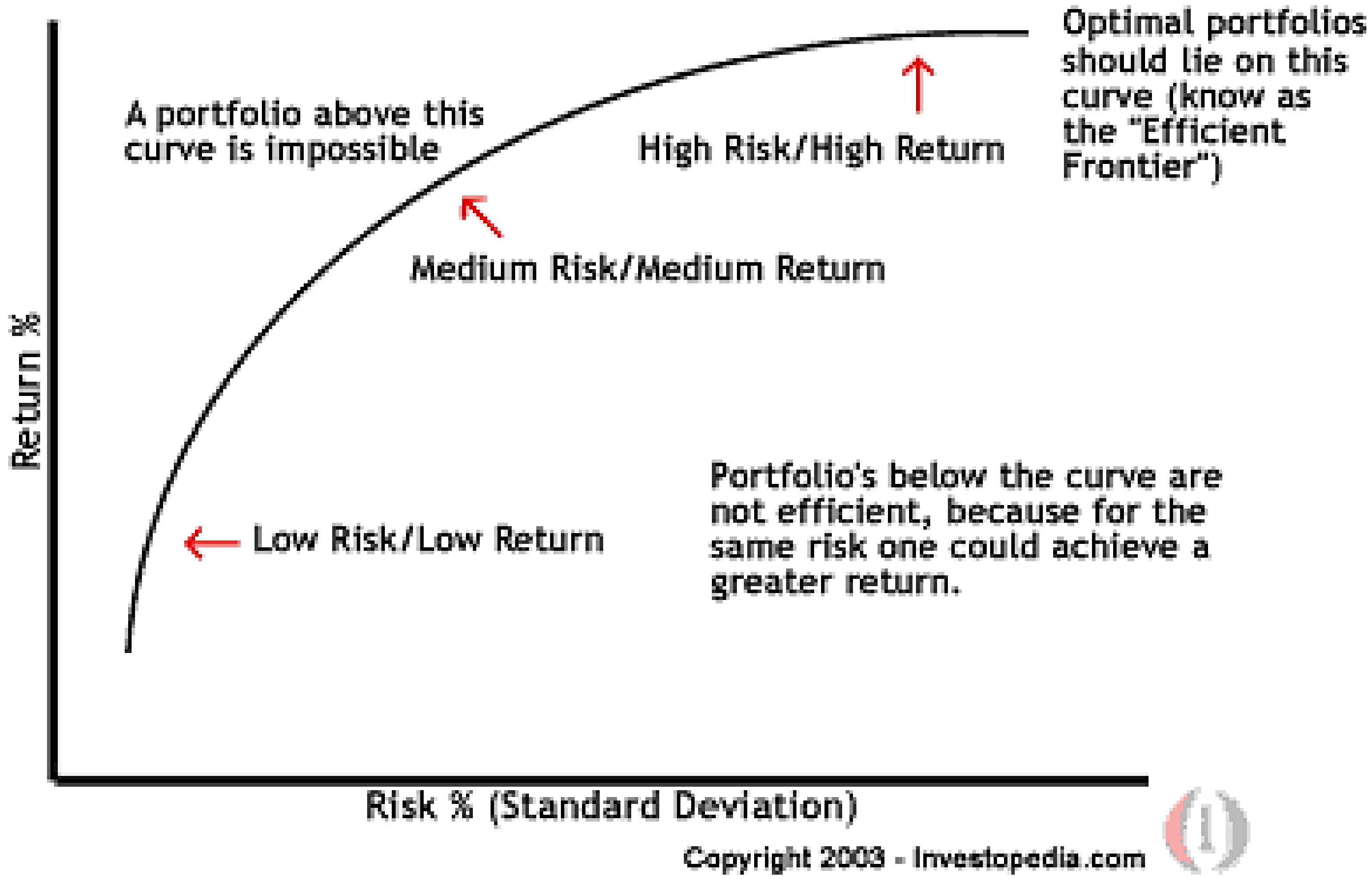
Note: During periods of market dislocation, assets tend to correlate to 1, reducing the benefits of diversification in asset allocation.

Efficient Frontier

- Harry Markowitz—1952
- Maximize return and minimize risk
- Risk is viewed in a portfolio context rather than one security at a time

Note: Harry believed that there existed a portfolio that maximized return for every degree of risk!

Asset Allocation - Efficient Frontier



Traditional Asset Allocation?

Defined Benefit Plans—Primary Objective

The Primary Objective in managing a DB pension Plan:

SECURE the promised benefits at a reasonable cost and with prudent risk!

*Contrary to popular belief, it is **NOT** a return objective, which guarantees volatility of returns and not success.*

Asset Allocation Strategy—Liability Focus

- **Install Custom Liability Index (CLI)**

  Calculates PV of liabilities + growth rate

  Evaluate plan's asset growth vs. liability growth

  (*Scoreboard: Assets versus Liabilities*)

  Provides data to calculate Funded Ratio/Status monthly

  Knowing the score essential to responsive Asset Allocation

POB Asset Allocation Strategy – Secure Benefits

- Separate Liquidity/Beta assets (POB proceeds) from Growth Assets
- Liquidity assets to fund benefits and expenses
- Growth/Alpha assets now grow unencumbered
- No need for a cash sweep of dividends and interest

Asset Allocation—Liquidity Assets (Beta)

- Bond portfolio that matches (defeases) asset cash flows to the plan's liability cash flows (benefits and expenses (B&E))
- Best accomplished through a ***cash flow matching*** (CFM) investment process using investment-grade corporate bonds
- Liquidity assets fund net B&E chronologically
- Buys time for the alpha assets to grow unencumbered

Liquidity Assets—Benefits

- Benefits
  - Certainty of cash flows (secures B+E)
  - Reduces funding costs by > 2% per year
  - Reduces volatility of the Funded Ratio/Status
  - Reduces the volatility of contribution expenses

Buys time for Growth Assets to grow unencumbered

Cash Flow Matching (CFM)

Implementation - Used by insurance companies and lottery systems

- Cost Optimization Model
- Investment grade bond portfolio
- Skewed to A/BBB+ ratings and longer maturities
- Bond Math – the longer the maturity and higher the yield - the lower the cost
- Cash flow match and fund Chronologically monthly Benefits and Expenses

Defined Benefit Plans—US Interest Rates

- Nearly 40-year decline in US interest rates beginning in 1982 crushed pension funding
- Growth rate of liabilities > growth rate of assets
- October 13, 1981, 10-year Treasury = 14.90%

    $17.82 to defease a $1,000 30-year liability

- August 4, 2020, 10-year Treasury = 0.52%

    $860.40 to defease a $1,000 30-year liability

Defined Benefit Plans—US Interest Rates

August 29, 2003… 10-year Treasury = 4.22%

$301.00 to defease a $1,000 liability in 30-years

POB Proceeds can be invested at these attractive rates providing greater certainty in the outcome.

Asset Allocation—Growth Assets (Alpha)

- Consist of all non-bond assets
  - Can now grow unencumbered
  - No longer a source of liquidity
- Significant migration of assets into alternative strategies has impacted plan liquidity
- Cash sweeping (for liquidity) reduces the return from risk assets
- Goal for growth assets - grow to meet future liabilities

Responsive Asset Allocation (AA)

- As game evolves, AA **responds** to Funding Status

  As funding improves, add to liquidity assets

  Secures more benefits

  Buys more time

Follow your glidepath

DB Plans Need to be Protected

- DB Plans are a great recruiting and retention tool for work force
- Asking untrained individuals to fund, manage, and then disburse a “benefit” through a defined contribution plan is poor policy
- Doing the same thing over and over and over… is not working!
- A return to Pension basics is imperative
- You’ve made a promise: measure it, monitor it, manage it, and SECURE it!

Get off the pension funding rollercoaster – you will sleep well at night!