Ryan ALM
Asset/Liability Management

CASH FLOW MATCHING

"A SOLVENCY STRATEGY"

Presented by

Ryan ALM

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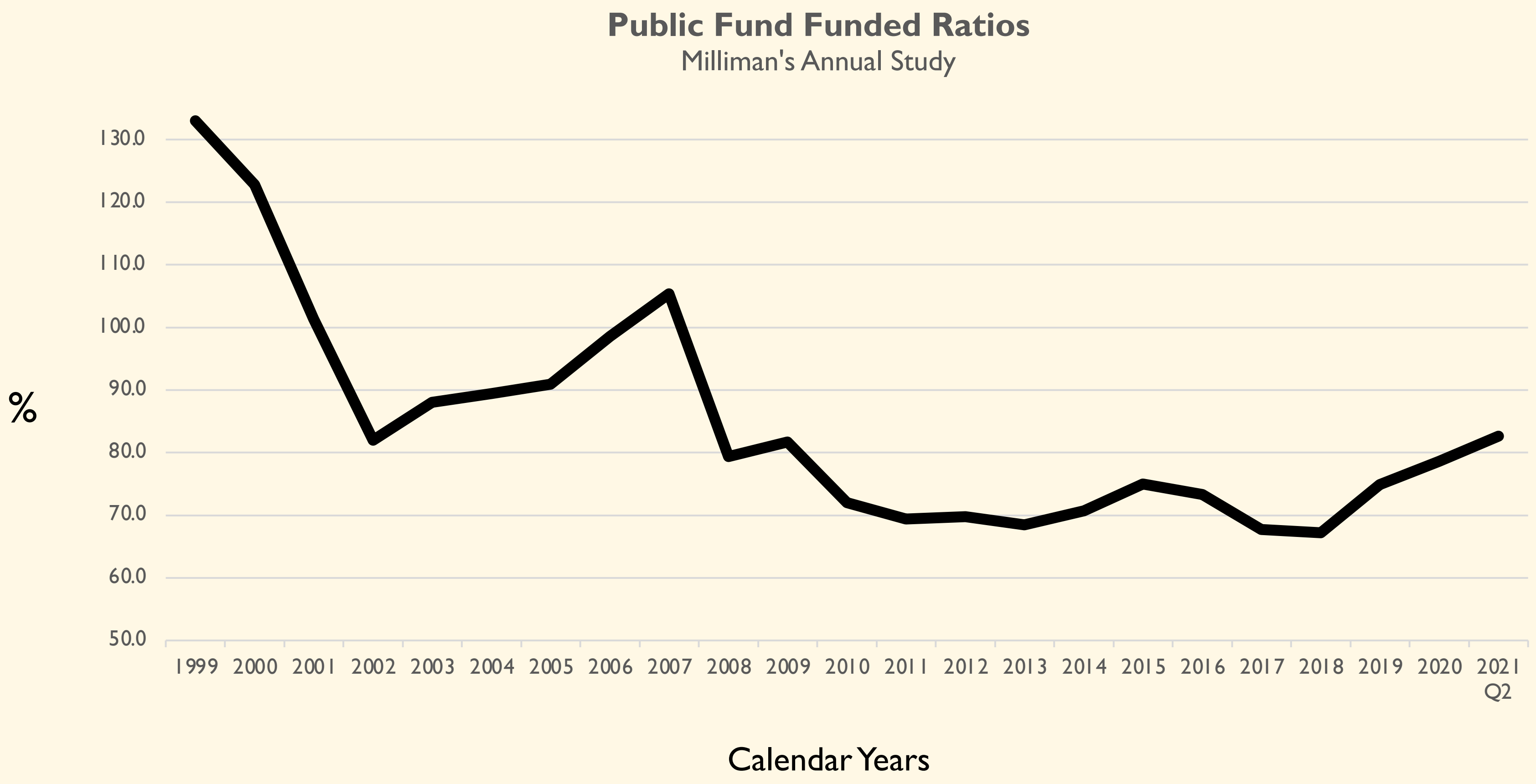
HISTORY OF DB PENSION FUNDING

- 1981 - Starts secular decline in interest rates
- 1985 - Treasury yields went below ROA (@ 8.00%)
  (Asset allocation models started reduction in fixed income)
- 1990s - DB plans were fully funded to generous surplus
  (Many plans enhanced benefits and reduced contributions)
- 1999 - DB plans had lowest allocation to bonds in history
  (Despite being fully funded to surplus status)
- 00-09 - Two major stock market corrections… creates funded status deficit
  (8/00-9/02 = -46.3% and 7/07-2/09 = -52.5%)

The objective of a DB plan is to SECURE benefits in a cost-effective manner with prudent risk.

Why didn't pension plans de-risk and secure their funded status in the 1990s?

HISTORY OF DB FUNDED RATIOS



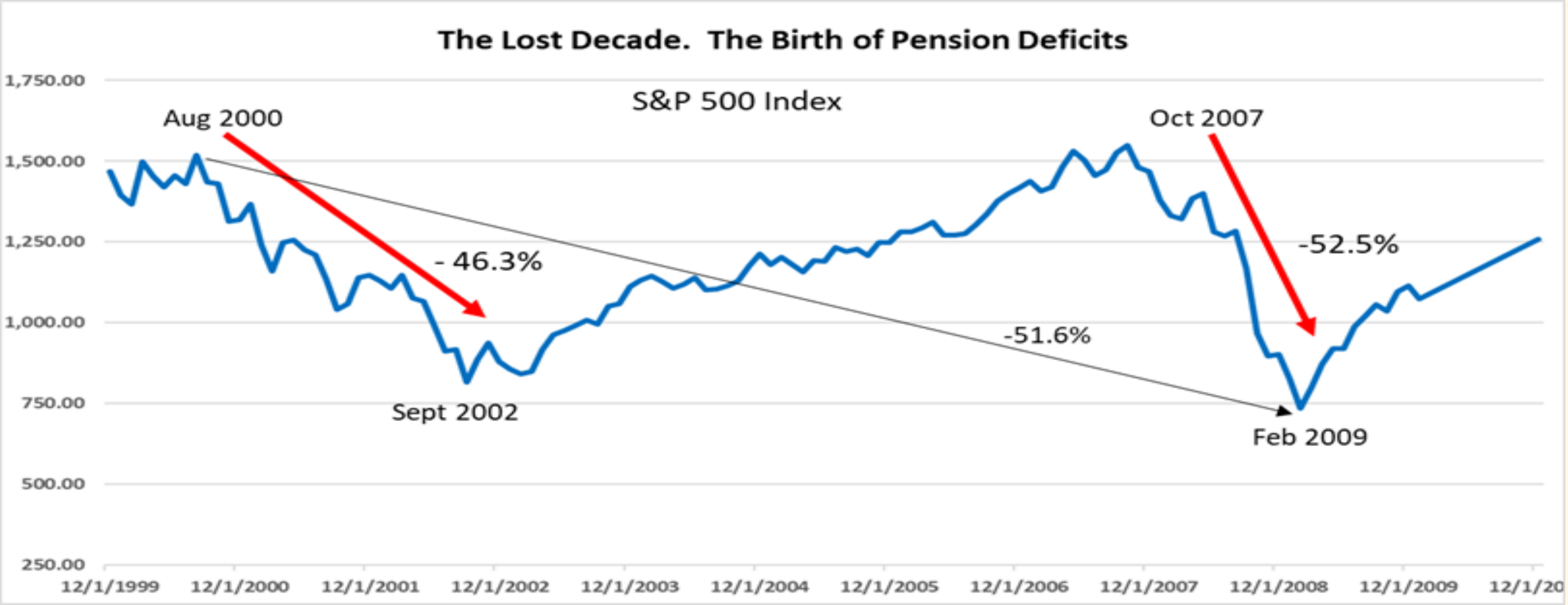
THE 2000s…BIRTH OF PENSION DEFICITS

- Continuous asset allocation shift from bonds to equities in the 1990s exacerbated the deterioration in the funded status of Pension America
- Two S&P 500 corrections -46.3% (8/00-9/02) and -52.5% (7/07-2/09)
- Created deep funded status deficits
- Required significant contribution increases
- Such funded status volatility is unacceptable and unbudgetable
- Requires significant asset growth to recapture (-50% x +100% = 0%)
- Improved funding does NOT recapture past contribution costs (lost $)

Asset allocation needs to separate liquidity assets from performance assets

As the funded status improves, more assets should be ported to the liquidity assets to cash flow match more liability cash flows chronologically

THE LOST DECADE OF THE '00S



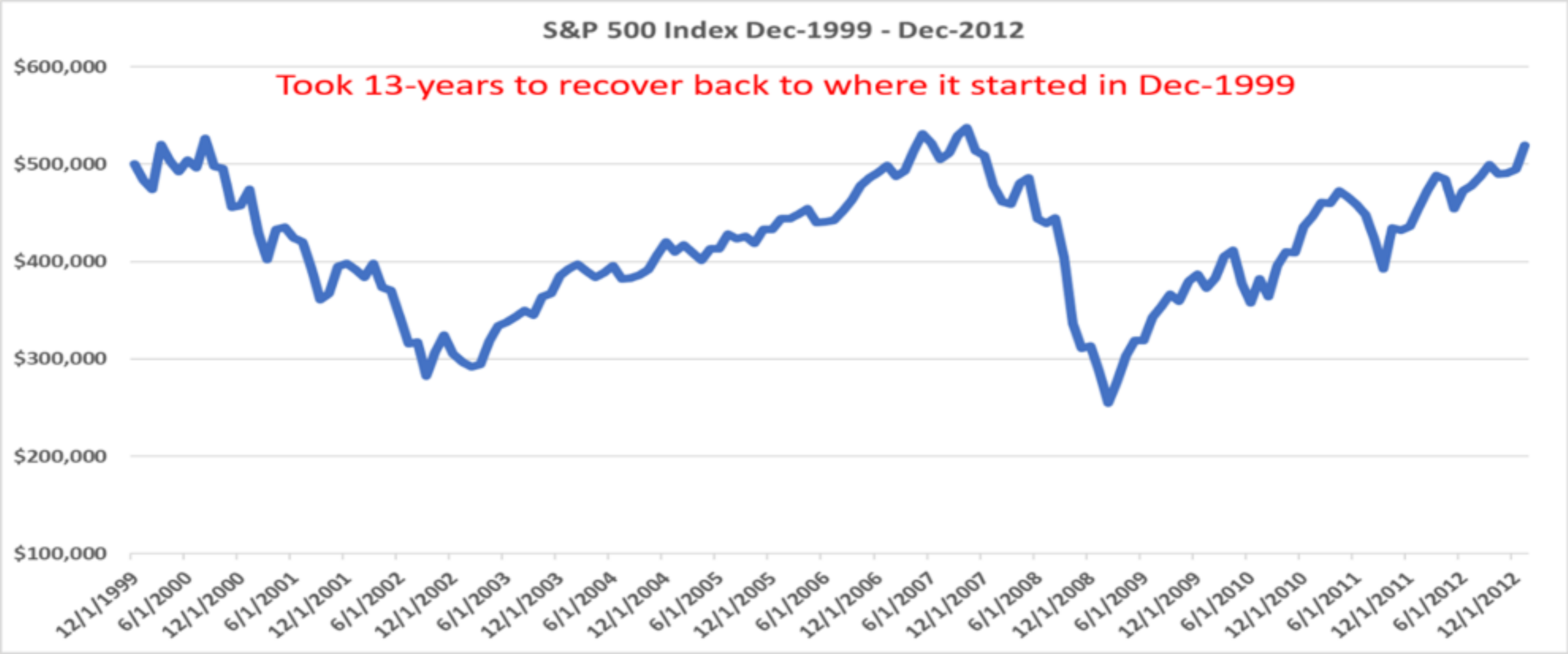
BUYING TIME - A VERY IMPORTANT INVESTING TENET

- If assets fall 50%... it must earn 100% to recover back to even
- Took 13-years for S&P 500 to recover following the 2000-2002 market crash
- Performance assets are risky (volatile) by their very nature

Cash flow matching "BUYS TIME"
for your performance assets to meet their return targets

We recommend that the Ryan ALM Liability Beta Portfolio™ (LBP) be used to cash flow match monthly benefit + expense payments for a minimum of 10-years

BUY TIME FOR ALPHA ASSETS



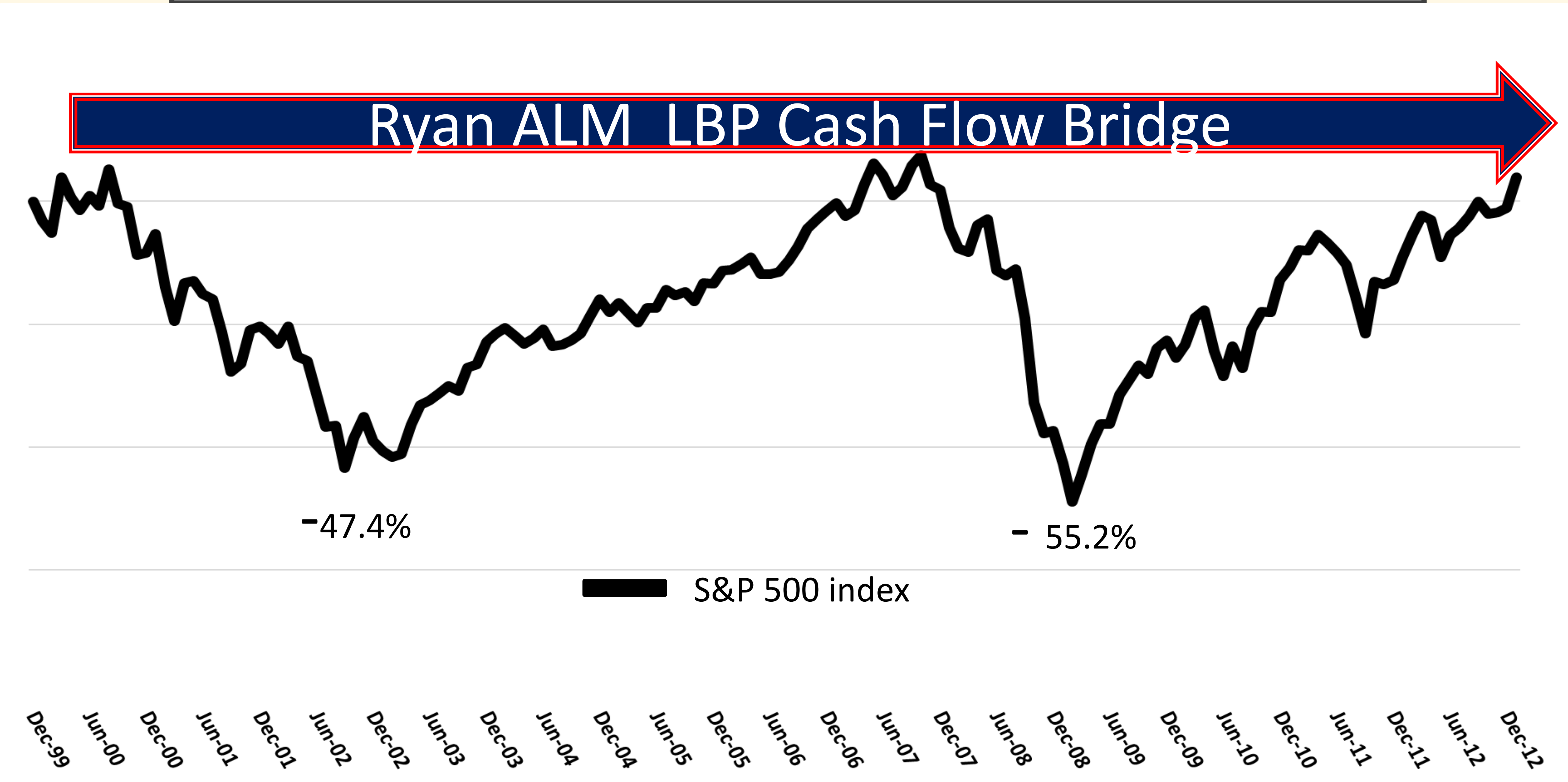
SEPARATE LIQUIDITY ASSETS FROM PERFORMANCE ASSETS

- Historically, 48% to 60% of the S&P 500's returns come from the reinvestment of dividend income (rolling 10-year and 20-year periods since 1940)
- Don't interrupt the power of compounding these dividends
- Many pension systems "sweep" liquidity from all custody accounts to pay for monthly benefits and expenses
- If there isn't enough cash to meet the monthly needs… performance assets may be sold

Separate liquidity (beta) assets from performance (alpha) assets to ensure that the cash flow is available when needed.

Installing an LBP cash flow matching portfolio as the liquidity assets will fund monthly benefits and expenses as far out as the allocation will allow.

A BRIDGE OVER TROUBLED WATERS



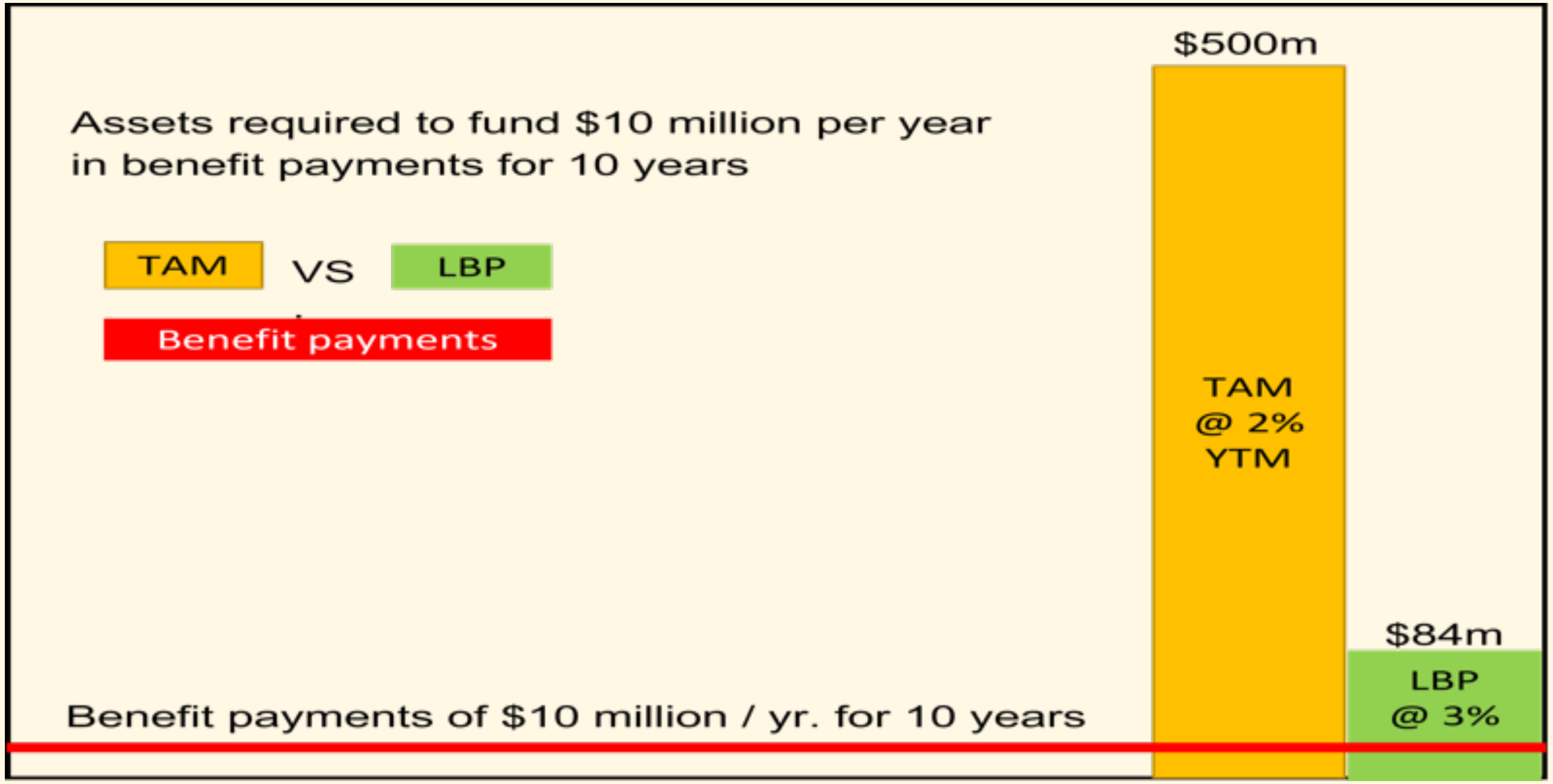
MAXIMIZE THE EFFICIENCY OF THE ASSET ALLOCATION

- Bonds are NOT performance instruments in this low-interest rate environment
- We strongly believe that the value in bonds is the certainty of their cash flows
- Traditional fixed income with a 2% income yield would need $500 million to fund $10 million in annual benefit payments
- Through a Ryan ALM LBP, our allocation only needs to be $84 million

Maximize the efficiency of the asset allocation by installing a cash flow matching portfolio that uses principal + income to pay benefits

Because the LBP is so efficient, more capital is freed up for performance assets enhancing the probability of success for the plan to achieve the ROA objective

INTRINSIC VALUE IN BONDS…CASH FLOWS



SUMMARY

- DB pension plans have suffered in the 2000s with declining funded ratios causing spiking contribution costs and volatile funded status
- This was due to failing to de-risk in the 1990s and two equity corrections

Solutions:

- Asset allocations should be based on the funded status
- Assets should be separated into liquidity and performance buckets
- Bonds should be used as liquidity assets not performance assets
- Cash flow matching liabilities (Ryan ALM LBP) should be the ***core portfolio*** to provide the necessary liquidity to pay benefits + expenses chronologically for a minimum of 10 years
- Don't dilute or sell performance assets to meet liquidity needs

We are calling for a return to pension basics.

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