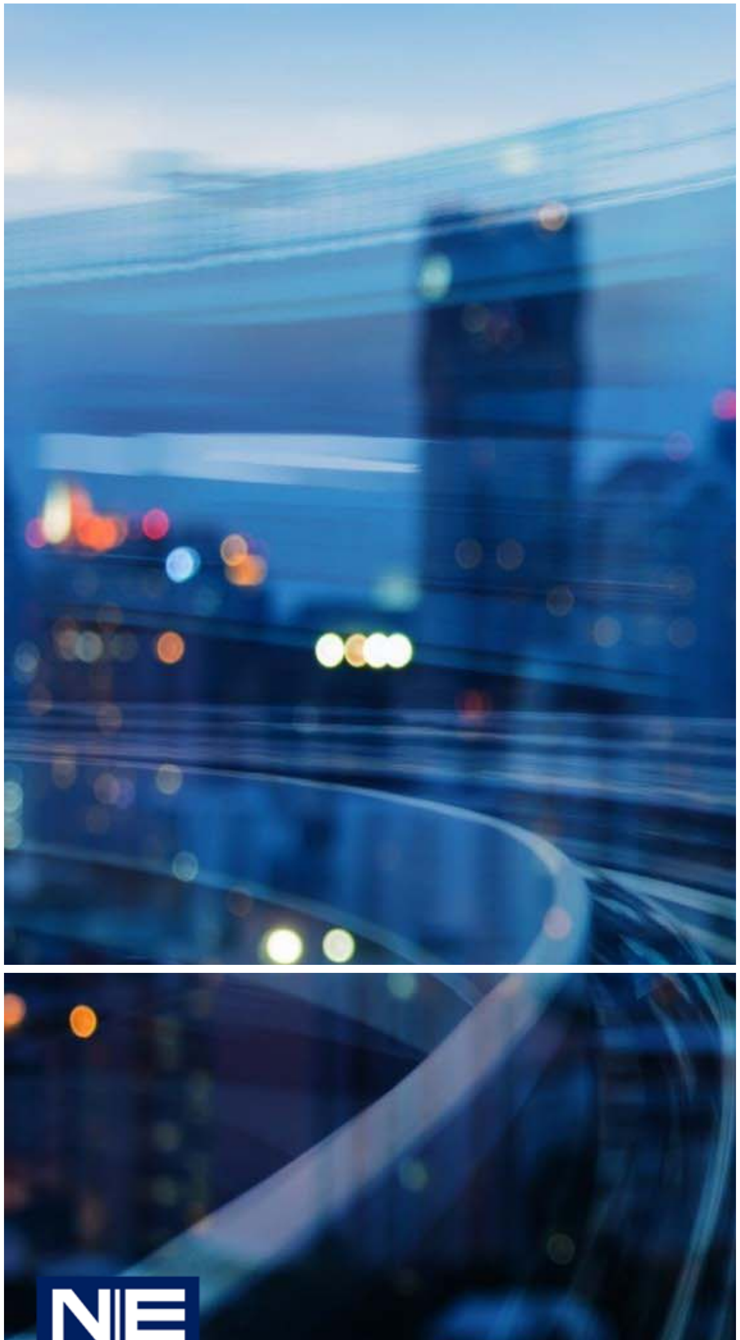

SCENARIO ANALYSIS

OFFICE OF THE TREASURER & CASH MANAGEMENT POLICY BOARD

JULY 2021

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ANALYSIS OVERVIEW

- **NEPC prepared scenario analysis to assess the impact of higher interest rates and/or inflation on the DE Liquidity and Reserve portfolios**
  - NEPC's scenario analysis highlights the impact of shifting economic and market regimes on the portfolio and potential asset allocation mixes

- **The analysis incorporated various blends between Liquidity and Reserve portfolios (20/80, 30/70, 40/60, 50/50, and 60/40)**

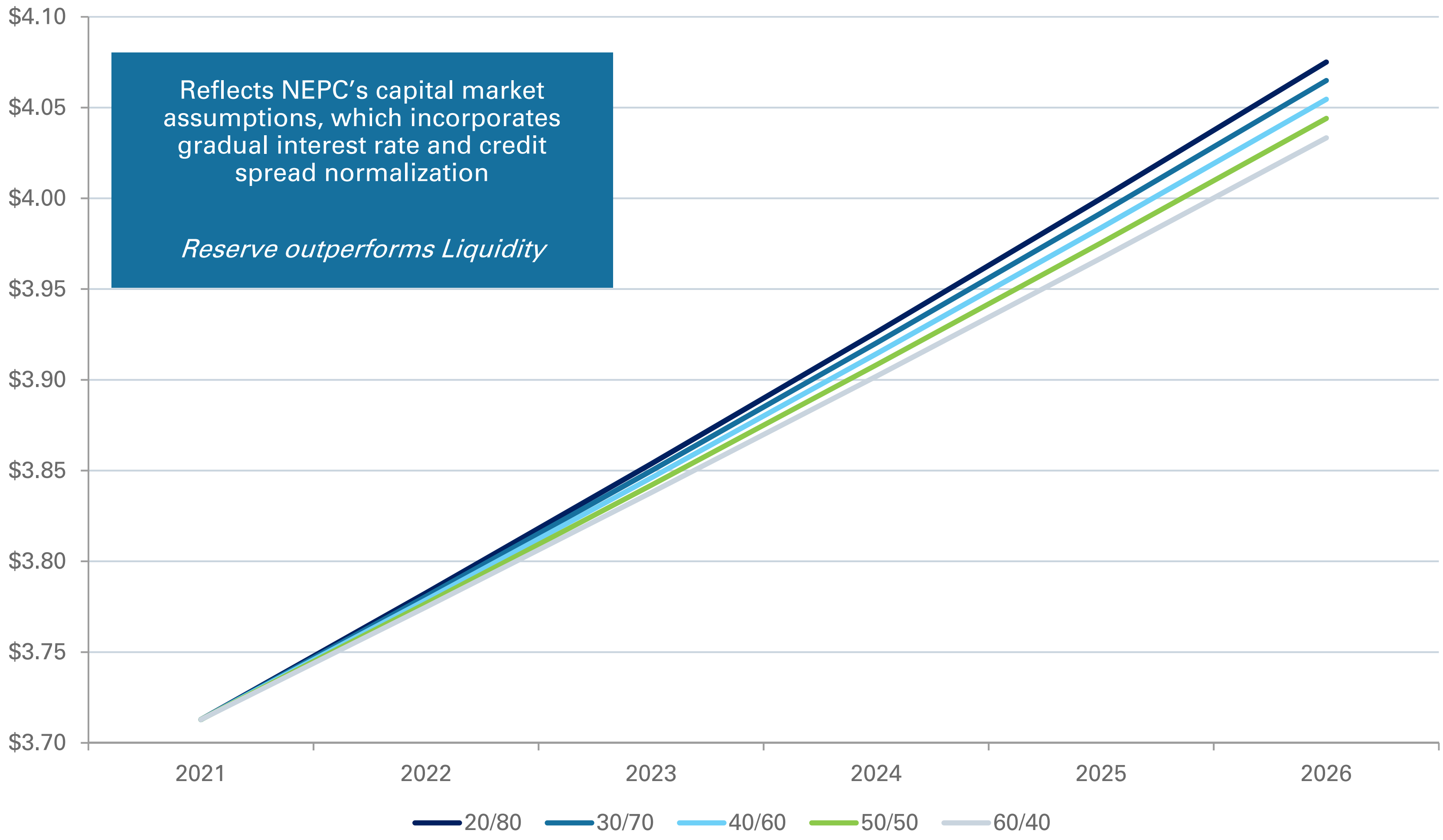
- **While tilting toward the Reserve portfolio was additive in most scenarios, the Stagflation scenario highlights the potential outperformance of Liquidity during rising rate/inflation environments**
  - NEPC recommends replacing the existing 30/70 Liquidity/Reserve blend with 40/60 to offer greater protection from rising rates without sacrificing meaningful returns

ASSET ALLOCATION MODELING BENCHMARKS

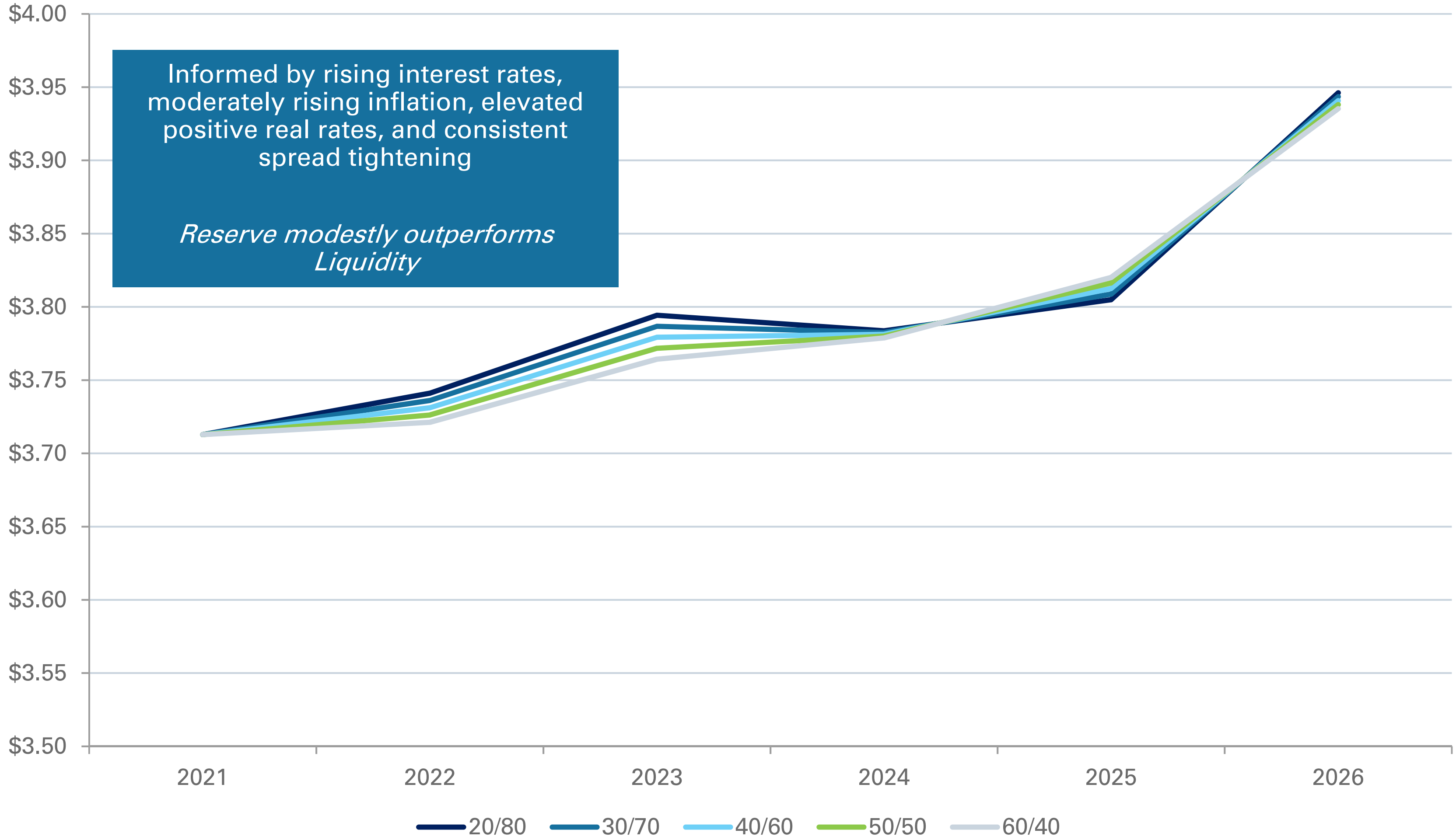
- **The Liquidity and Reserve portfolios were modeled as follows:**
  - Liquidity: 75% Cash, 12.5% Short Treasuries, 12.5% Short Corporates
  - Reserve: 25% Short Treasuries, 25% Intermediate Treasuries, 25% AA/A-Rated Corporate Bonds

	20/80	30/70	40/60	50/50	60/40
Cash	15%	23%	30%	38%	45%
Total Cash	**15%**	**23%**	**30%**	**38%**	**45%**
US Short-Term Treasury Bond	23%	21%	20%	19%	18%
US Short-Term Corporate Bond	23%	21%	20%	19%	18%
US Intermediate-Term Treasury Bond	20%	18%	15%	13%	10%
US Corporate Bond – AA	10%	9%	8%	6%	5%
US Corporate Bond – A	10%	9%	8%	6%	5%
Total Fixed Income	**85%**	**78%**	**70%**	**63%**	**55%**
Asset Duration	**3.6**	**3.2**	**2.8**	**2.4**	**2.1**
Expected Return 10 years	**1.9%**	**1.8%**	**1.8%**	**1.7%**	**1.7%**
Expected Return 30 years	**3.0%**	**2.9%**	**2.9%**	**2.8%**	**2.8%**
Standard Deviation	**3.3%**	**3.0%**	**2.7%**	**2.3%**	**2.0%**
Sharpe Ratio (10 years)	**0.17**	**0.18**	**0.18**	**0.18**	**0.19**
Sharpe Ratio (30 years)	**0.18**	**0.18**	**0.18**	**0.19**	**0.19**

BASE CASE

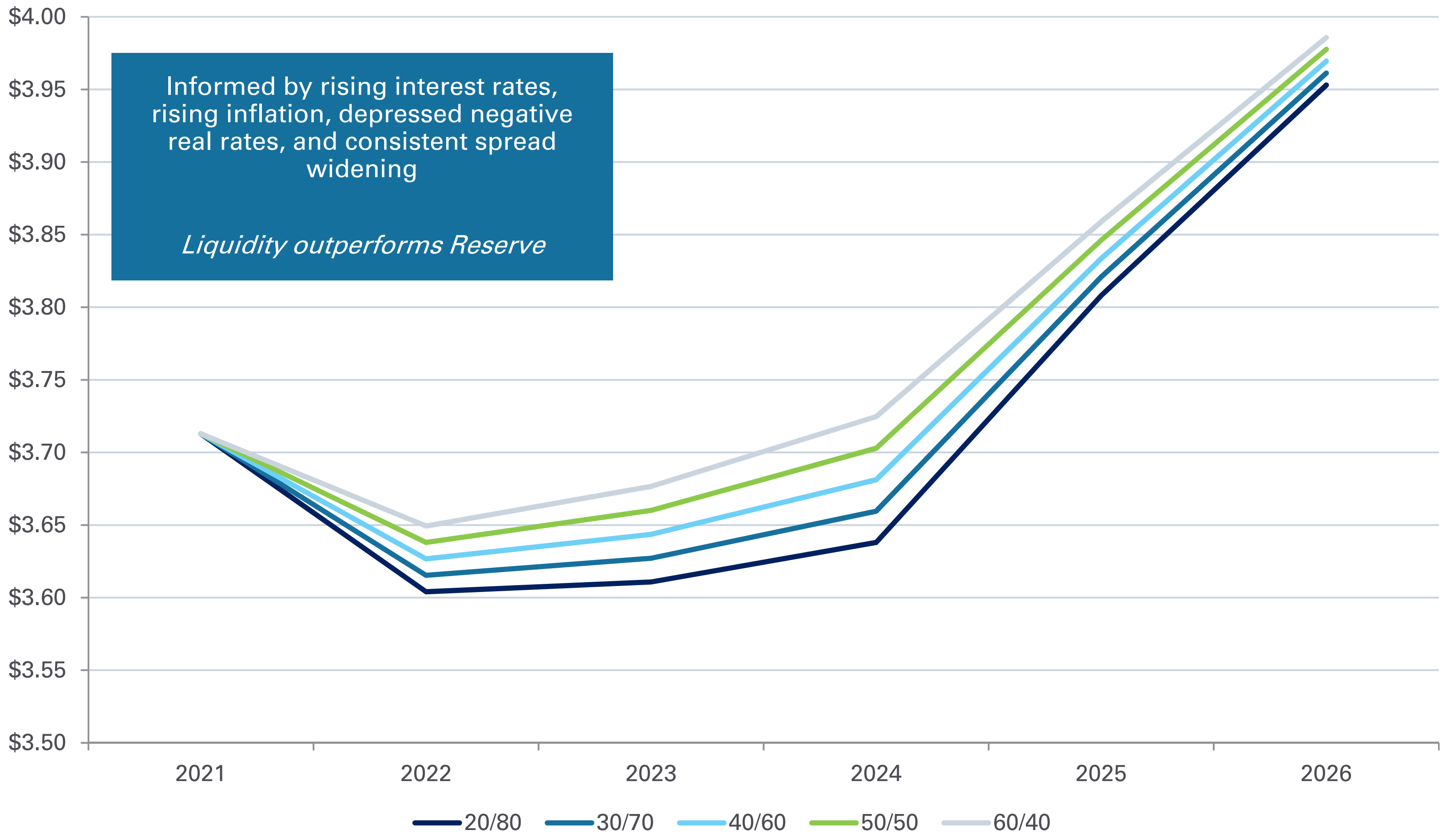

Reflects NEPC's capital market assumptions, which incorporates gradual interest rate and credit spread normalization
Reserve outperforms Liquidity
$4.10
$4.05
$4.00
$3.95
$3.90
$3.85
$3.80
$3.75
$3.70
2021
2022
2023
2024
2025
2026
20/80
30/70
40/60
50/50
60/40

EXPANSION

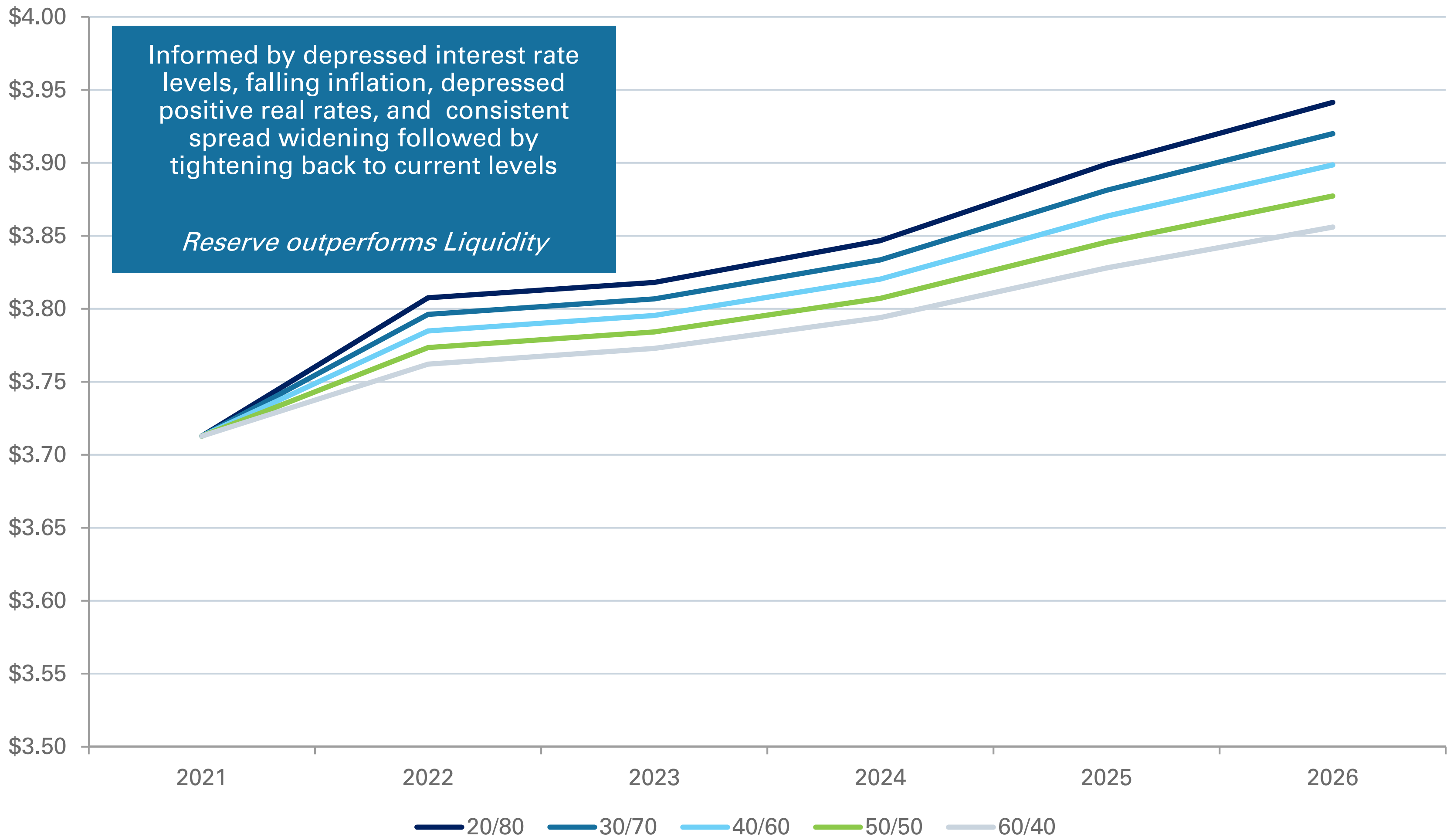


Informed by rising interest rates, moderately rising inflation, elevated positive real rates, and consistent spread tightening
Reserve modestly outperforms Liquidity
$4.00
$3.95
$3.90
$3.85
$3.80
$3.75
$3.70
$3.65
$3.60
$3.55
$3.50
2021
2022
2023
2024
2025
2026
20/80
30/70
40/60
50/50
60/40

STAGFLATION

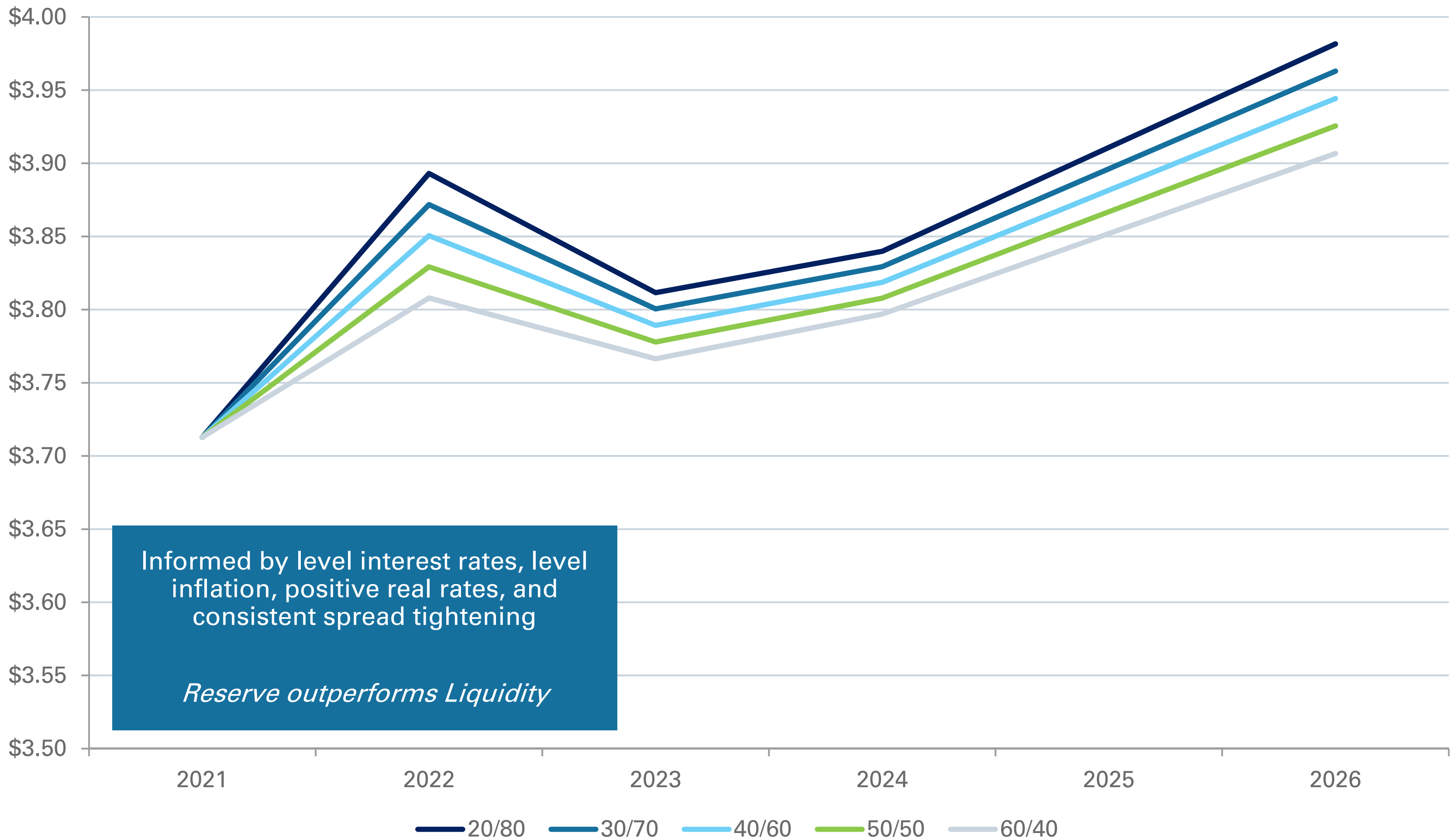


RECESSION



$4.00
$3.95
$3.90
$3.85
$3.80
$3.75
$3.70
$3.65
$3.60
$3.55
$3.50
Informed by depressed interest rate levels, falling inflation, depressed positive real rates, and consistent spread widening followed by tightening back to current levels
Reserve outperforms Liquidity
2021
2022
2023
2024
2025
2026
20/80
30/70
40/60
50/50
60/40

ECONOMIC BALANCE



CONCLUSIONS

- **Dispersion between various Liquidity and Reserve mixes is small across a broad range of scenarios**
- **Concerns about rising interest rates and inflation, which are best reflected in the Stagflation scenario, suggest increasing the Liquidity allocation may be appropriate**
- **NEPC recommends replacing the existing 30/70 Liquidity/Reserve blend with 40/60 to offer greater protection from rising rates without sacrificing meaningful returns**

NEPC DISCLOSURES

Past performance is no guarantee of future results.

Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.

The goal of this report is to provide a basis for substantiating asset allocation recommendations. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.

All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.