# Delivering Member Value: A Leadership Perspective for Executives & Directors

75 Years NCUMA INC

ncuma.com

Thom Back

Director, Client Insights & Analytics

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## How Do We Achieve Results?

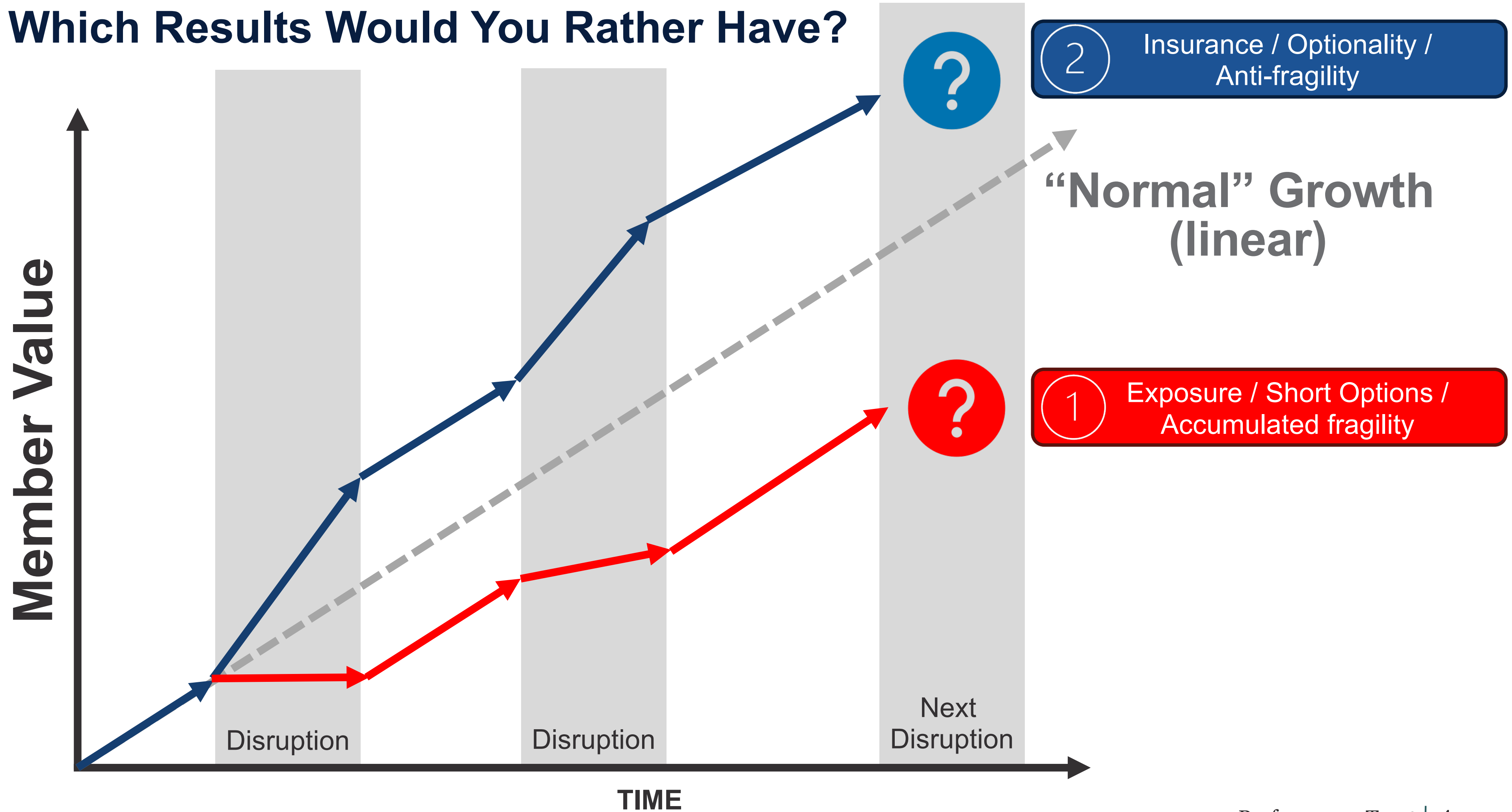
RESULTS → $f_n$

| Credit Union | Balance Sheet |
|---|---|
| STRATEGY | FRAMEWORK |
| MANAGEMENT | PROCESS |
| LUCK | LUCK |

**Does our decision-making framework have blind spots?**

*Source: Performance Trust Analytics*

# Which Results Would You Rather Have?




Source: Performance Trust Analytics. The chart is for illustrative purposes only and is not intended to represent an investment or strategy.

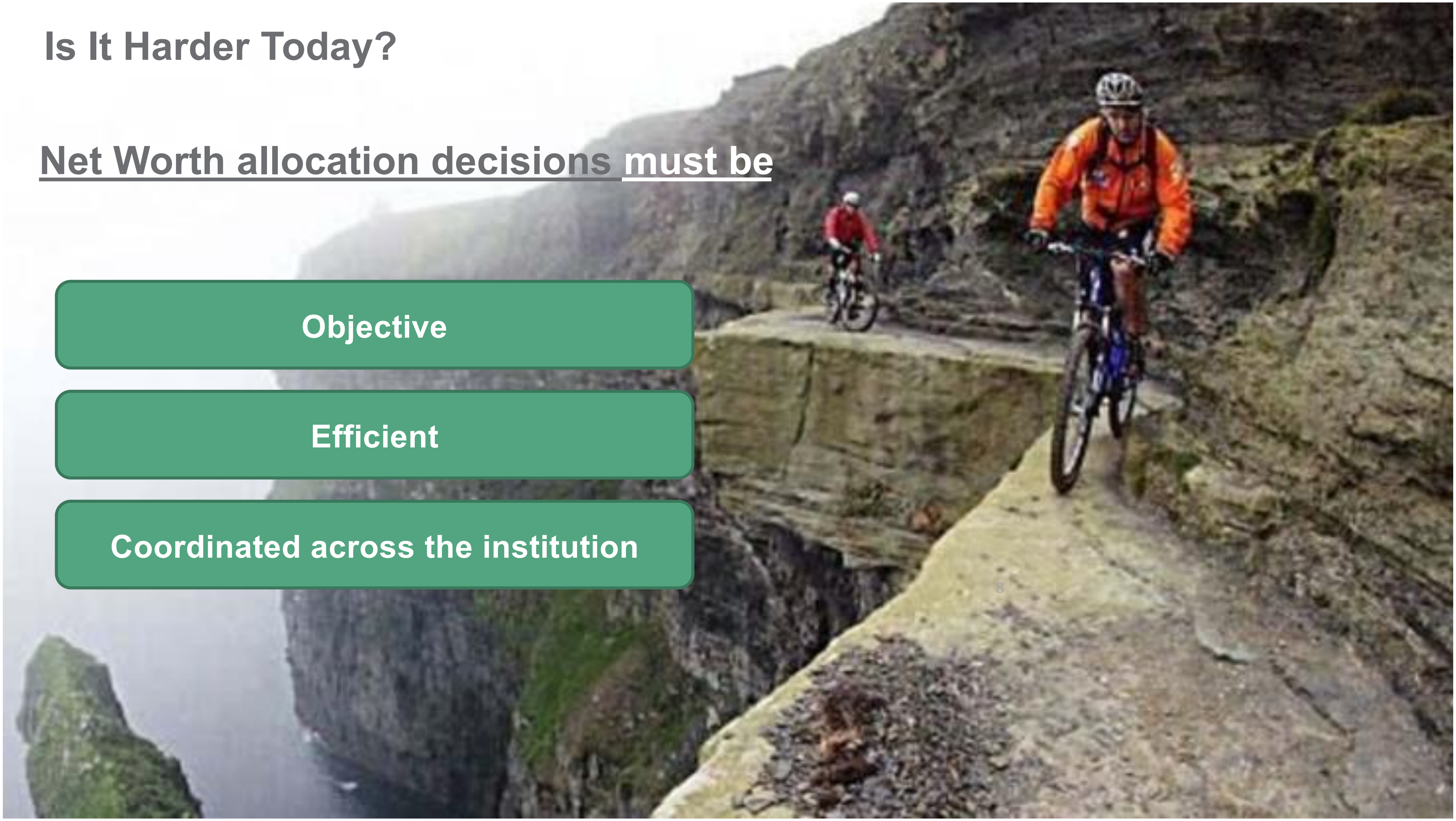
# Why don’t we all choose the path to better member value?

# There is a problem

# What is the problem?

- Balance sheets = **unlike** cash flows
- Conventional tools = **accurate but incomplete**
- Incomplete evaluation creates **blind spots**…
- …which can lead to **seeking risk accidentally**
- Often, **no reward** for the risk-seeking activity

## Is It Harder Today?



**Net Worth allocation decisions must be**

- Objective
- Efficient
- Coordinated across the institution

**Two Truths:**

1) The future cannot be predicted

2) Risk and reward are relative

# #1 The future cannot be predicted

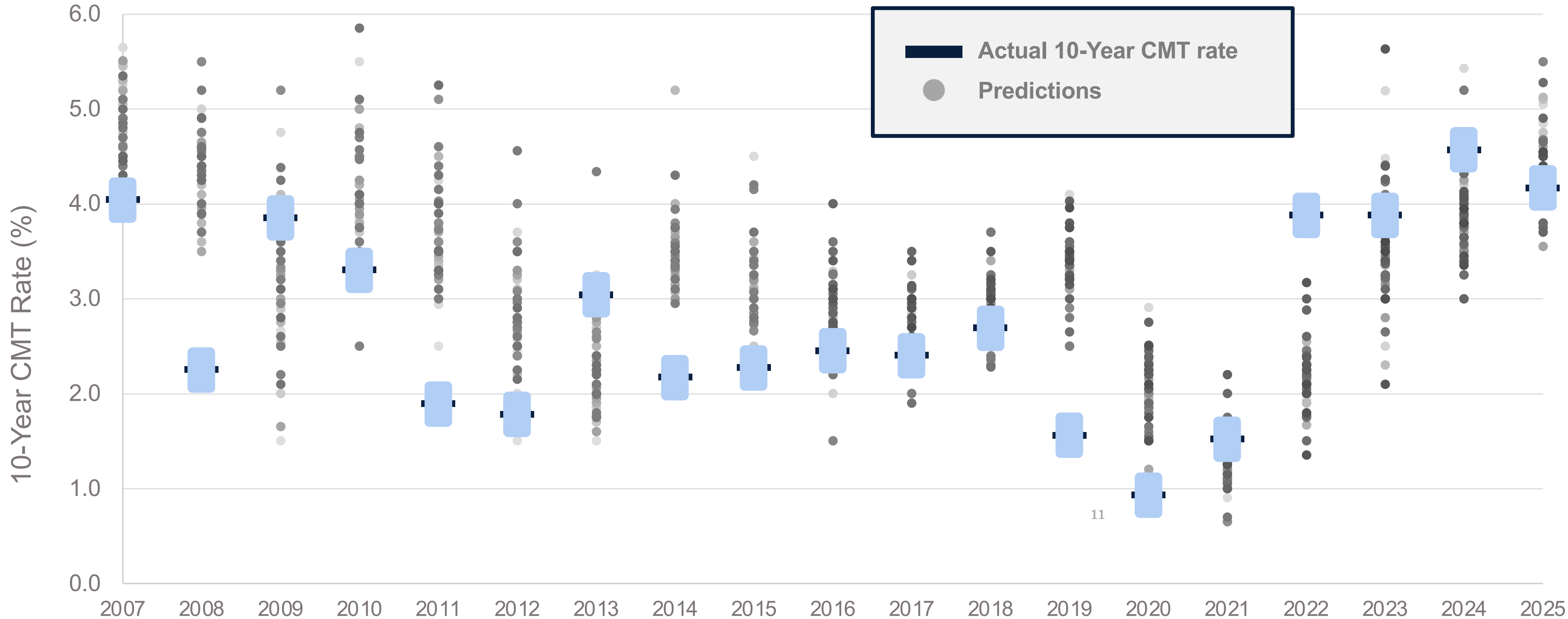
**Knowns about the future:**

- More than one thing can happen
- Certain things are completely out of our control
- Some things are partially in our control
- What actually occurs in the future, often differs, sometimes radically, from current expectations

*Source: Performance Trust*

## Economist Predictions 10-Year Treasury - One Year in Advance

***What percentage of the economists came within 50 (+/-25) bps?***

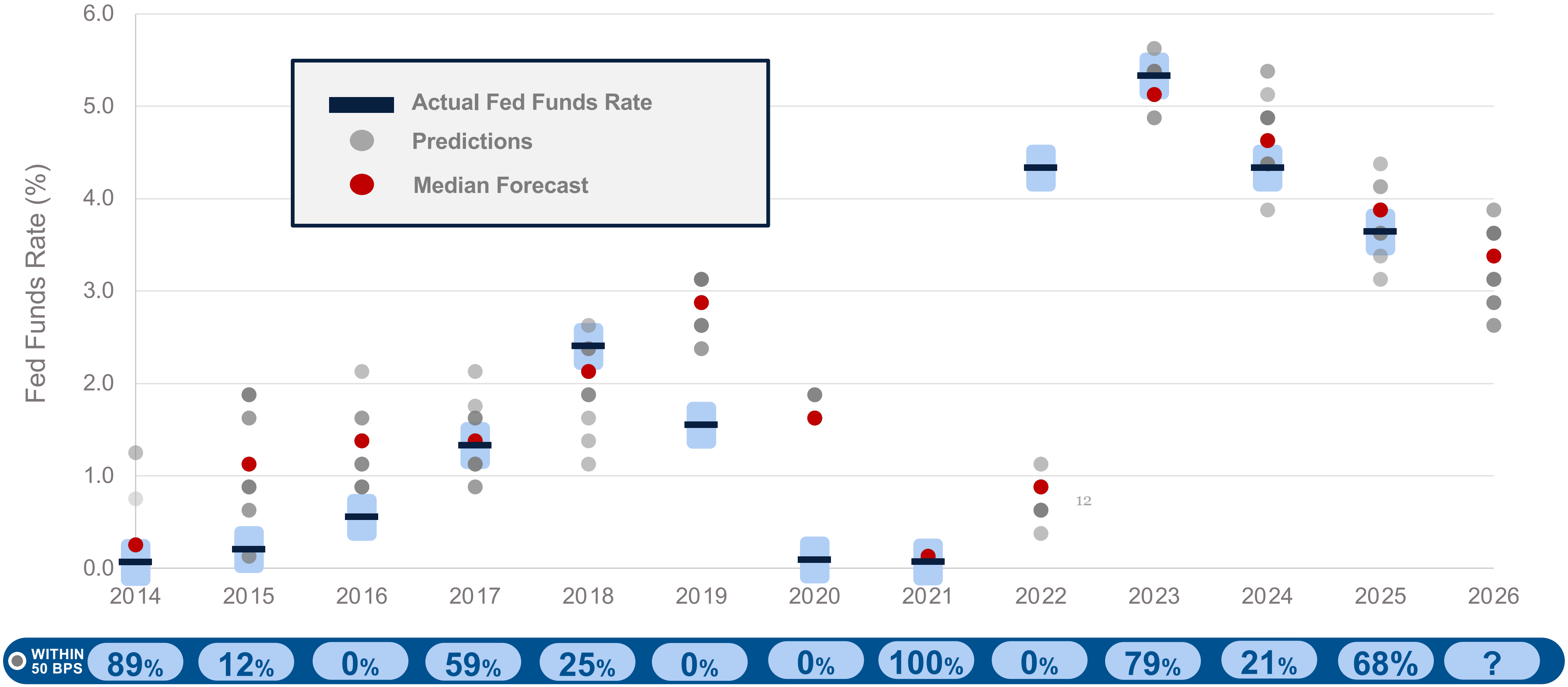



| WITHIN 50 BPS | 8% | 0% | 24% | 6% | 0% | 4% | 6% | 0% | 2% | 30% | 33% | 44% | 0% | 4% | 45% | 0% | 18% | 4% | 52% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

Source: Performance Trust Analytics; Wall Street Journal, US Treasury

# FOMC Dot Plot: Fed Funds - One Year in Advance

***What percentage of the Fed Officials came within 50 (+/-25) bps?***






Source: Performance Trust Analytics; Bloomberg; Federal Reserve

# #2 Risk and Reward are relative

## 1 Which Would You Choose?

1. $100, No Matter Happens
2. Possibility of $100, $300, or $1,000
3. Possibility of $400, $500, or $900

## 2 Which Would You Choose?

**You get a phone call…**

***"Do you want an asset with MORE yield and LESS duration?"***

| Asset #A | Asset #B |
|---|---|
| Yield: 1.41 | Yield: 1.69 ✓ |
| WAL: 7.00 | WAL: 5.38 ✓ |
| Duration: 6.64 | Duration: 4.97 ✓ |

*Source: Performance Trust Analytics; Bloomberg*

**Traditional analysis**
across the credit union industry
**constantly ignores these two truths**.

**Not respecting these two truths leads to**

**suboptimal net worth allocation and**

**reduced member value creation.**

# ALCO
# Decision

# How Do We Allocate Our Net Worth?

## Cash Flow #1

1-Year Maturity

1.50% Coupon at Par

Call/Prepay Protected

**0.9-year duration**

## Cash Flow #2

5-Year Maturity

3.00% Coupon at Par

Call/Prepay Protected

**4.6-year duration**

## Cash Flow #3

5-Year Maturity

3.30% Coupon at Par

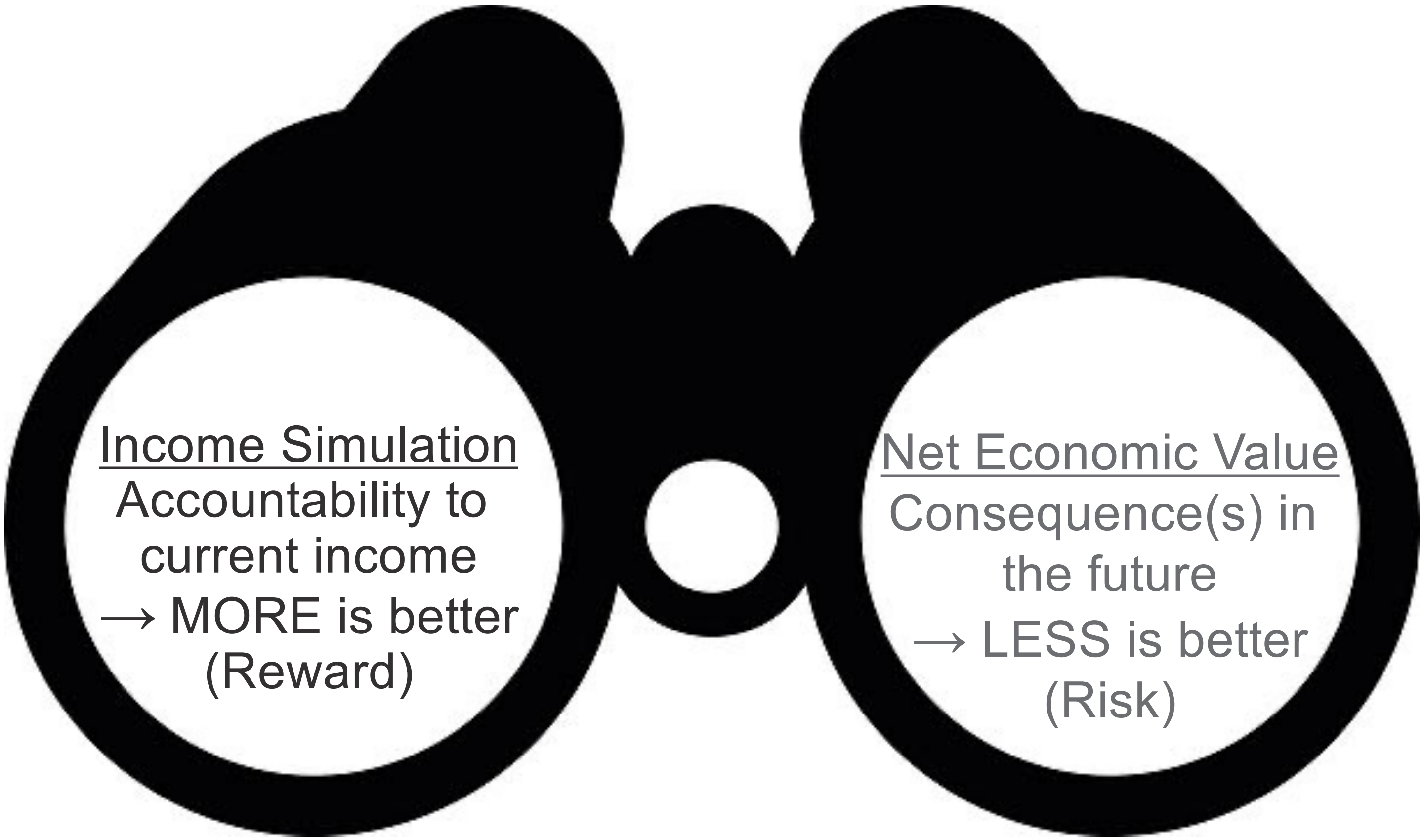
Callable after 1 year

**3.0-year effective duration**

Source: Performance Trust Analytics

# Typical ALM Industry Tools

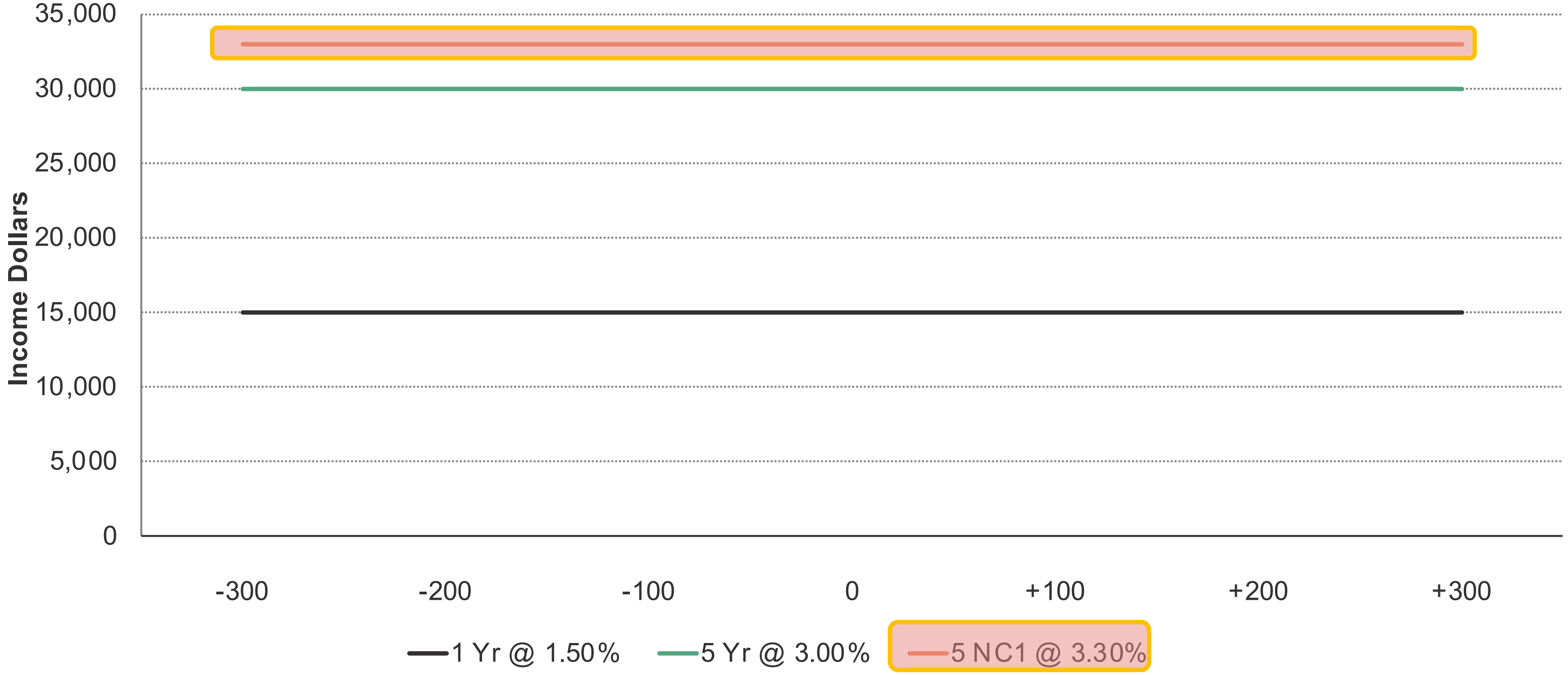
***Income Simulation and Net Economic Value models***




Source: Performance Trust Analytics

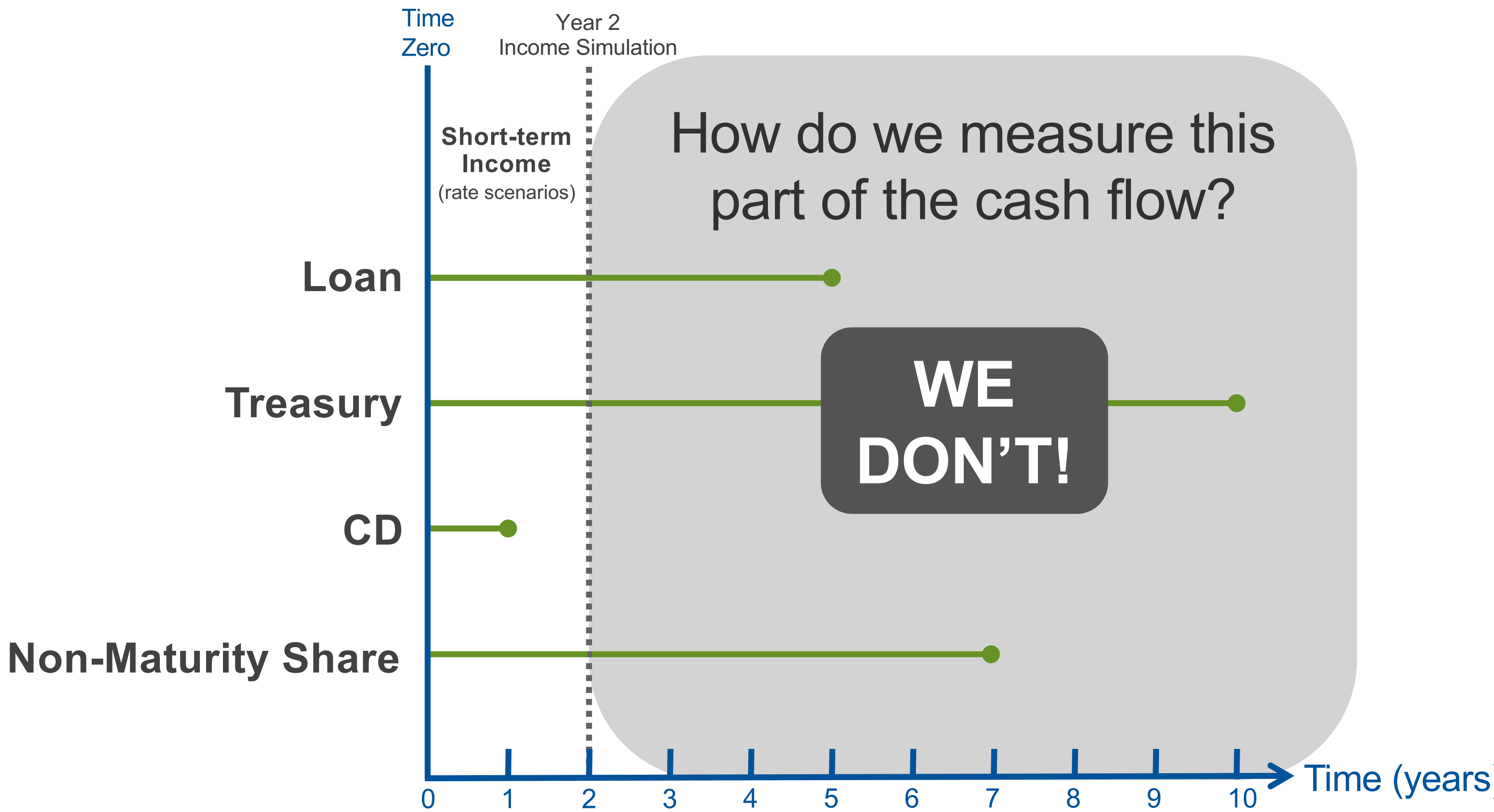
# What does Income Simulation Tell Us?

***Income Simulation, $1mm Invested***




Source: Performance Trust Analytics

# Measuring Reward: Income Simulation

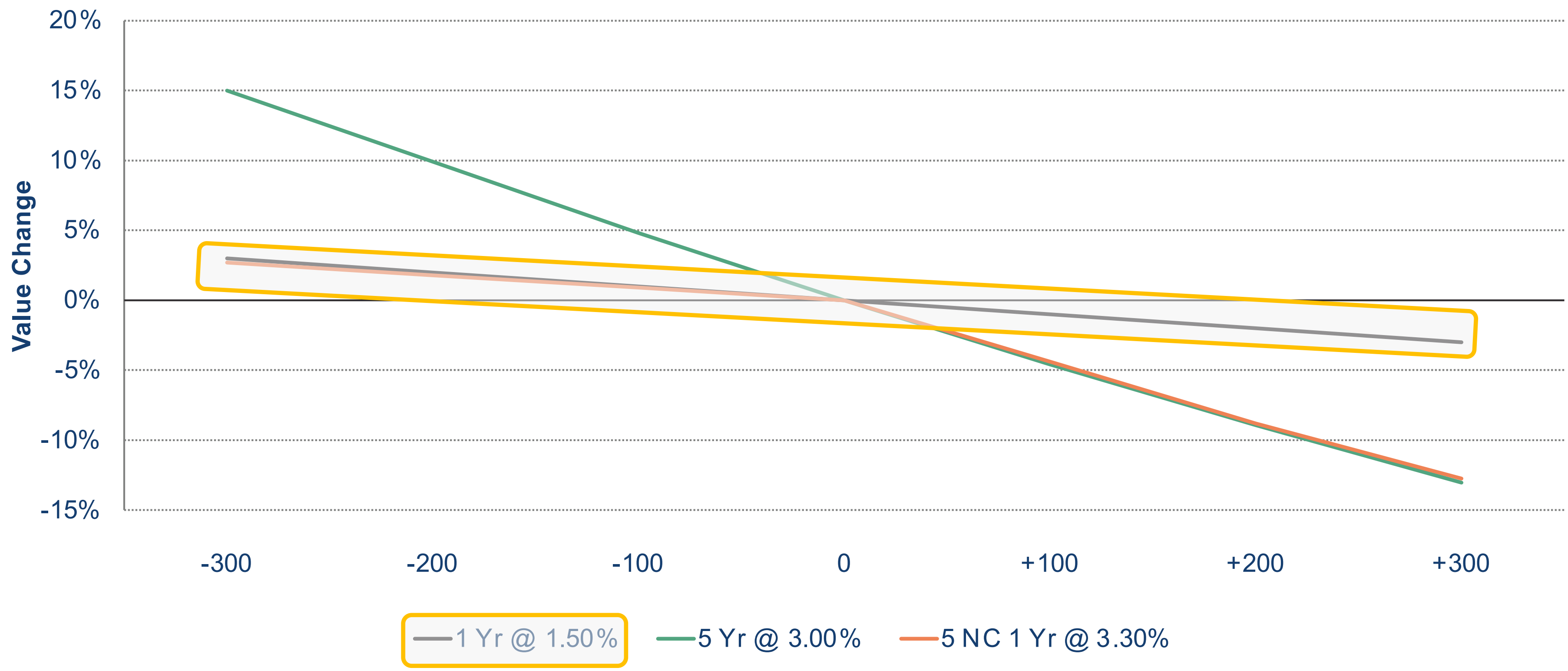



Source: Performance Trust Analytics

## Can Net Economic Value (NEV) analysis help us?

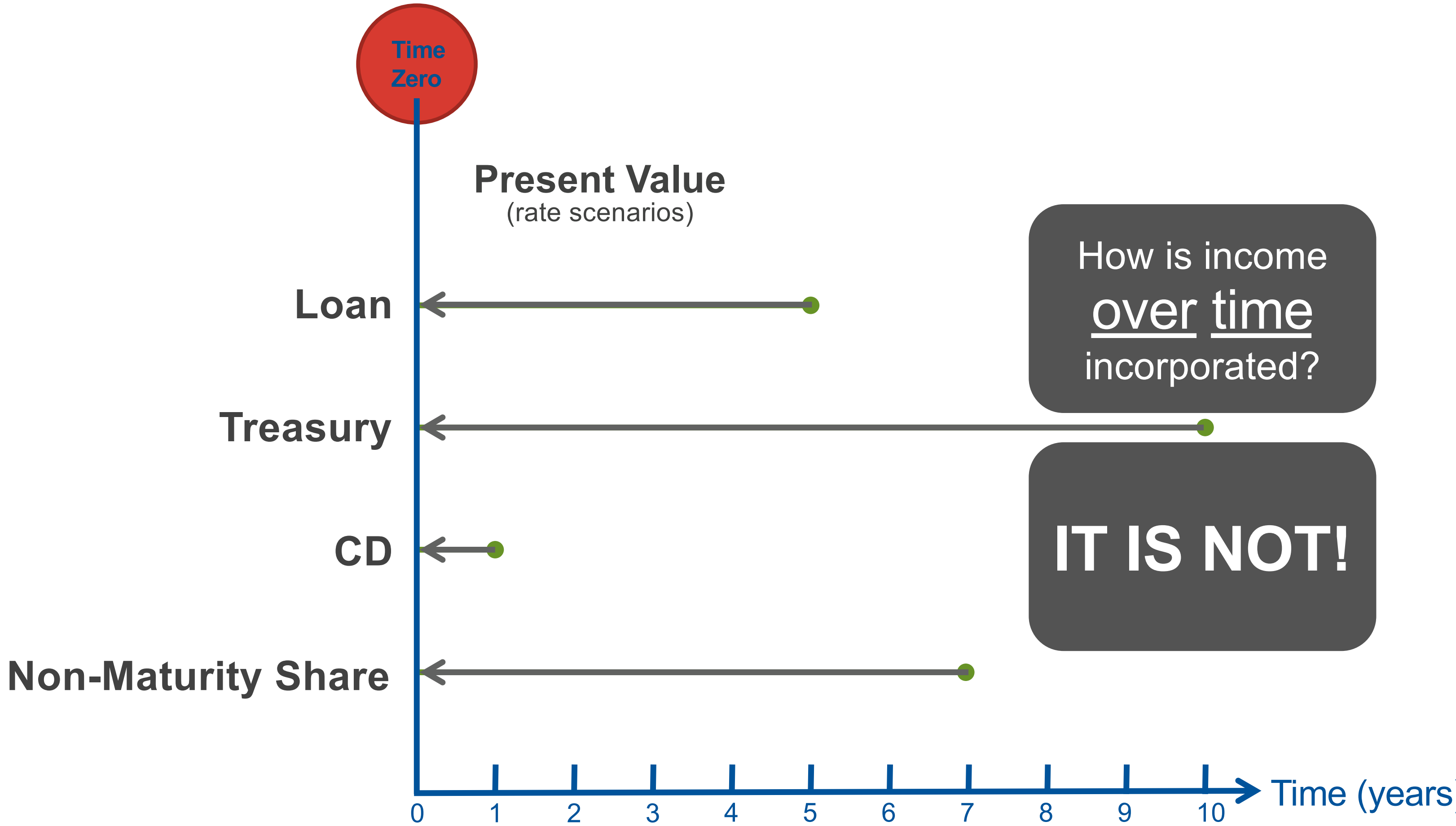
# What Does Net Economic Value Tell Us?

*Economic Value, $1mm Invested*




Source: Performance Trust Analytics

# Measuring Risk: Economic Value

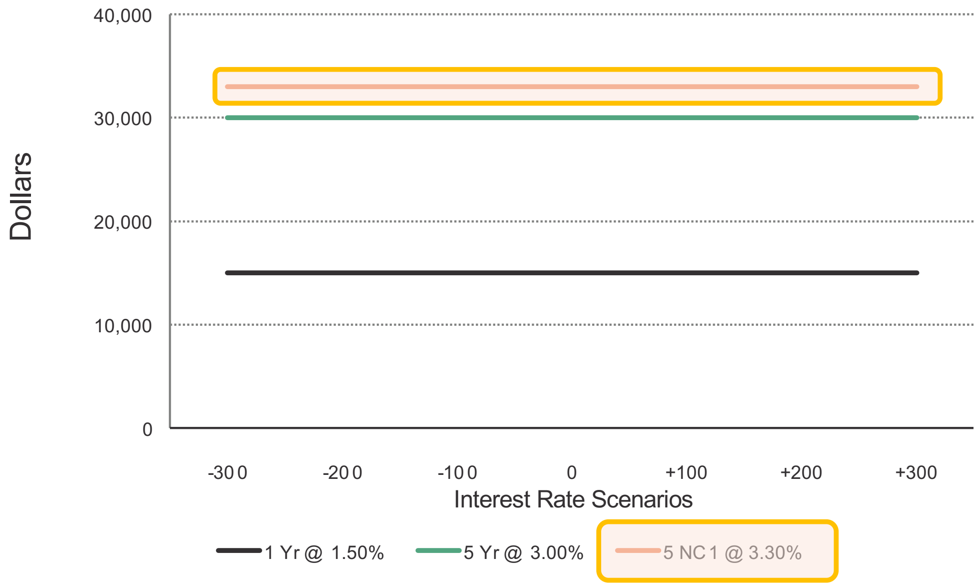



Source: Performance Trust Analytics

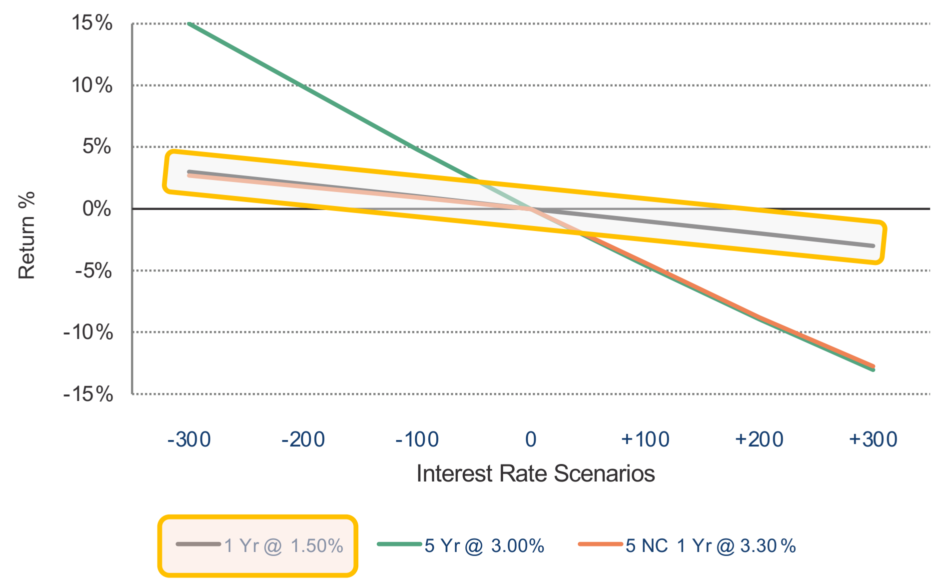
# ALM Produces a Confusing Conclusion With the Simplest of Cash Flows

***Income Simulation and Net Economic Value models***

Income Simulation = MORE is Better




NEV = Flatter is Less Scary (!!)




Source: Performance Trust Analytics

# With Conflicting Results, How Do We Make The Right Choice?

## Cash Flow #1

1-Year Maturity

1.50% Rate

Call/Prepay Protected

**0.9-year duration**

**Economic Value simulation (and duration) told us to approve Asset #1 (least risk)**

EVE

## Cash Flow #2

5-Year Maturity

3.00% Rate

Call/Prepay Protected

**4.6-year duration**

## Cash Flow #3

5-Year Maturity

3.30% Rate

Callable after 1 year

**3.0-year effective duration**

**Income simulation (and yield) and Conventional Wisdom told us to approve Asset #3 (highest return)**

Income Sim

Source: Performance Trust Analytics

# Conventional Metrics: Model Risk and Reward on Separate Scales

## Problem: Cash Flows Are Unlike + Our Tools Are Not Accurate

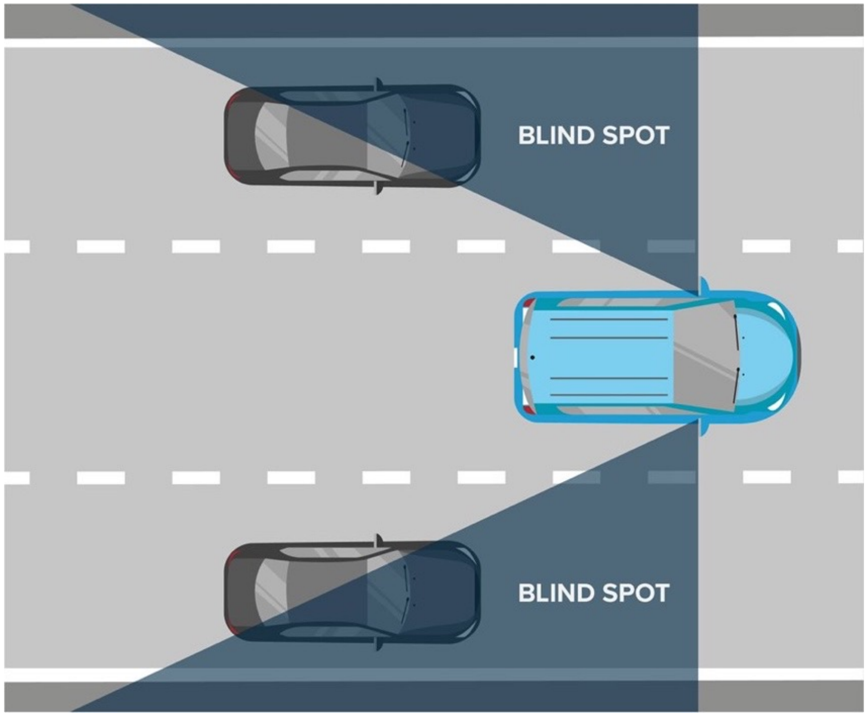
*Yet, you must choose*

This creates a vacuum filled with shortcuts:

**Accurate but incomplete metrics**

**Advocacy (the LOUDEST voice)**

**Assumption laden opinions**



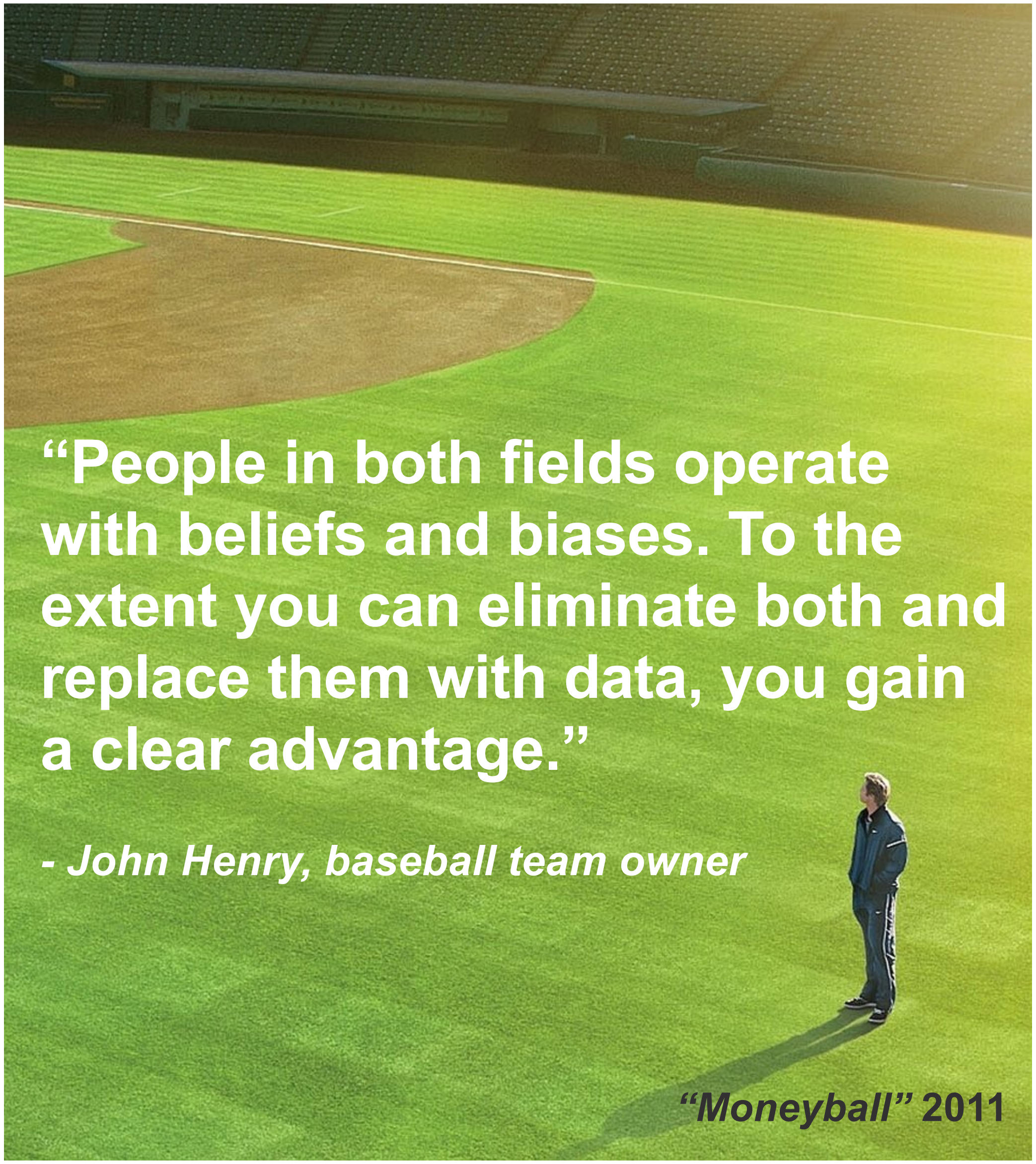

We need new tools to help minimize our blind spots

# What Is The Industry Problem?

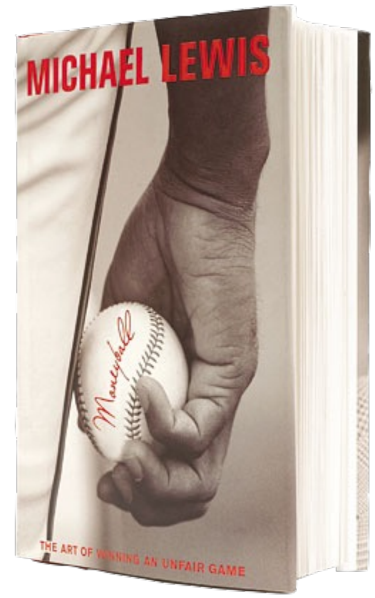

| Most users intuitively aware, but still use and try to navigate shortcomings | **DANGEROUS** if the two truths are disrespected |
|---|---|

*"There is no worse lie than a truth misunderstood by those who hear it."*
-William James

# What is the solution?




## *Moneyball: The Art of Winning an Unfair Game*




**Cognitive Biases Replaced by Data**

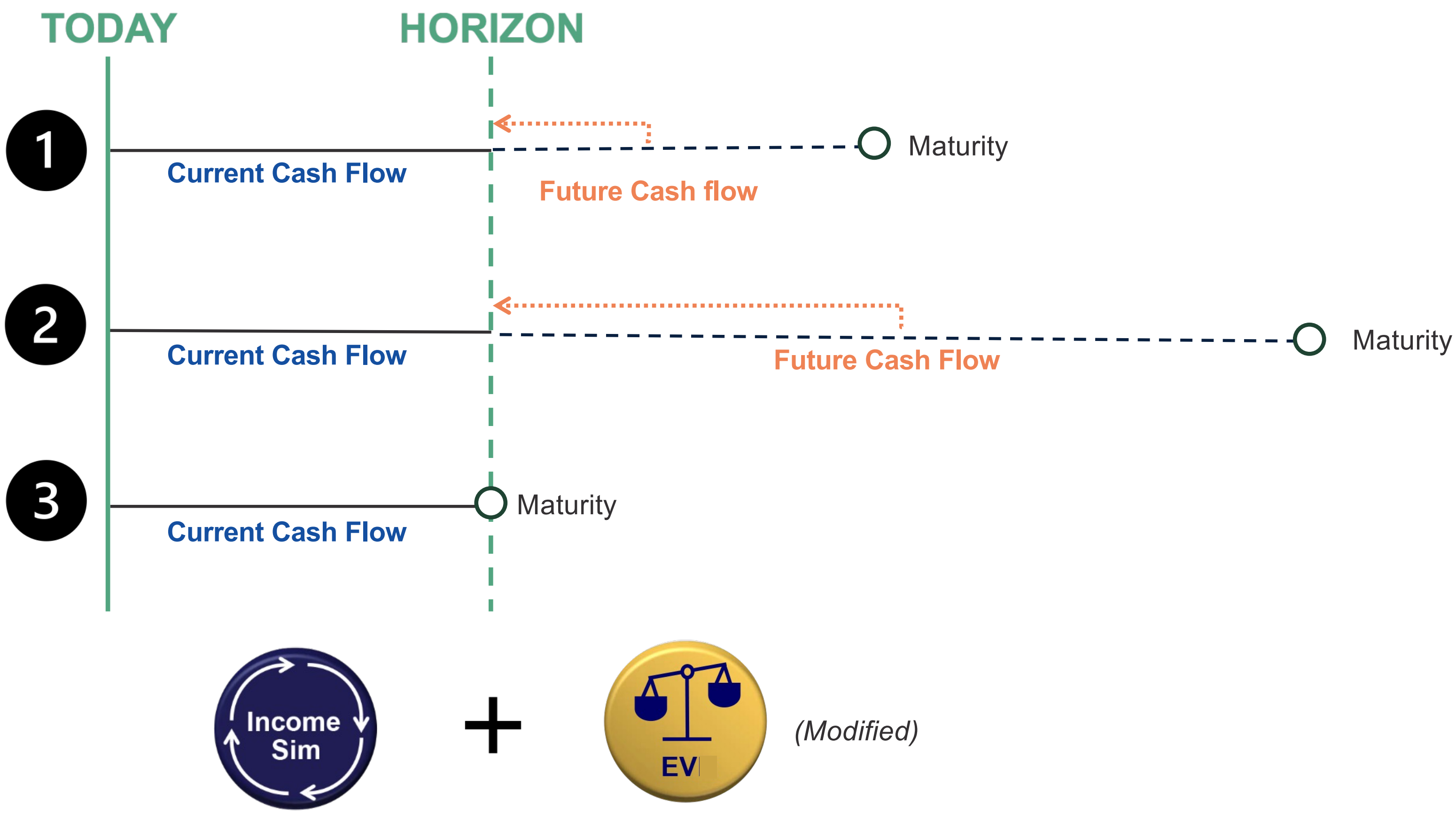
- *Confirmation Bias*
- *The Halo Effect*
- *Recency Bias*

# What is the Solution?

**We need another tool in our finance toolbox**

- Comprehensive decision-making **process**
- That respects **multiple scenarios**
- That incorporates the **passage of time**
- Facilitates **prospective** decision-making

## How Do We Frame The Problem In A Way That Makes The Solution Obvious?




Source: Performance Trust Analytics

# How Do We Make The Right Choice?

## Cash Flow #1

1-Year Maturity
1.50% Rate
Call/Prepay Protected

**0.90-year duration**

**Economic Value simulation (and duration) told us to approve Asset #1 (least risk)**

EV

## Cash Flow #2

5-Year Maturity
3.00%  Rate
Call/Prepay Protected

**4.6-year duration**

## Cash Flow #3

5-Year Maturity
3.15% Rate
Callable after 1 year

**3.0-year effective duration**

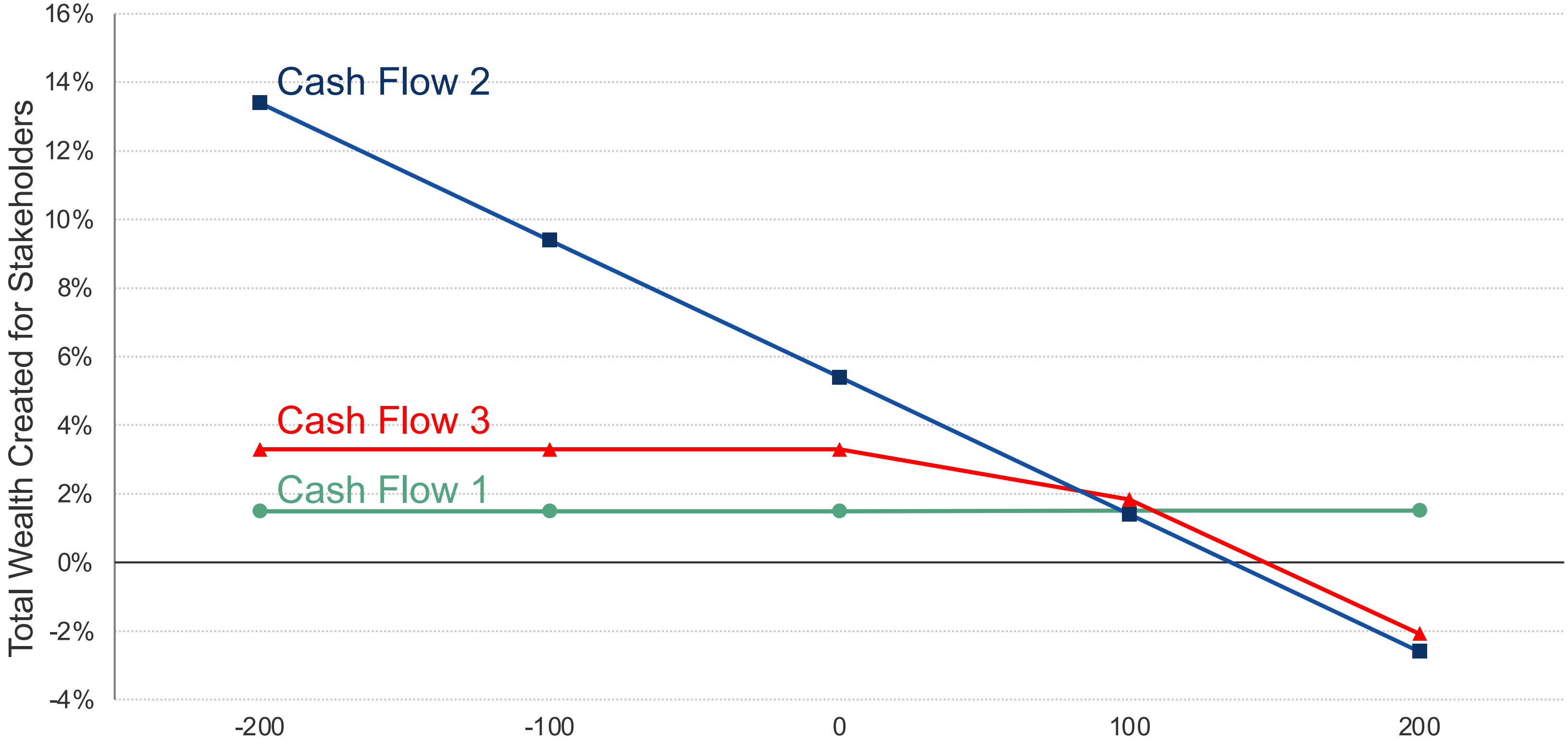
**Income simulation (and yield) and Conventional Wisdom told us to approve Asset #3 (highest return)**

Income Sim

Source: Performance Trust Analytics

# How Do We Use A Different Framework To Bring Clarity?

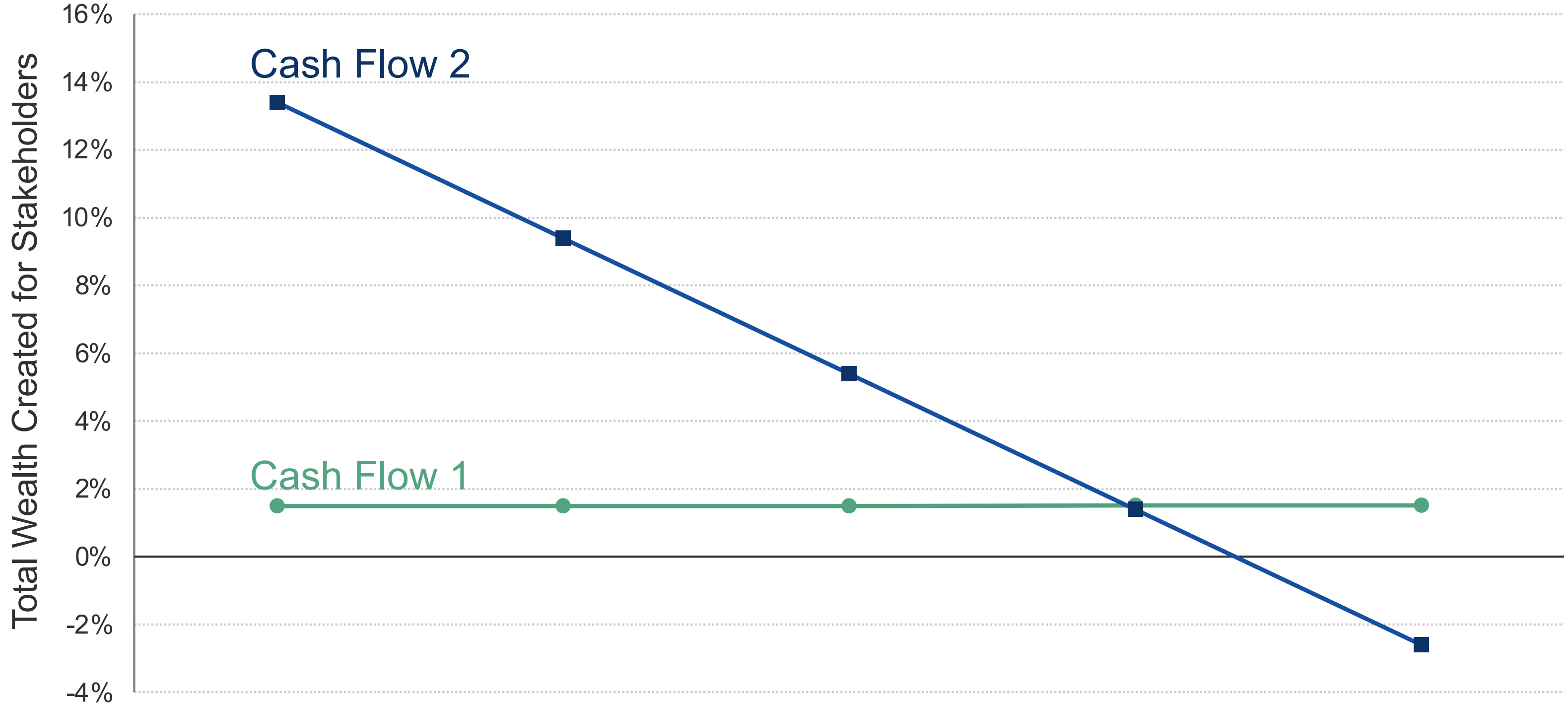
***1-Yr Horizon***




Source: Performance Trust Analytics

# Can We Eliminate Bad Risk-Reward Choices?

***1-Yr Horizon***

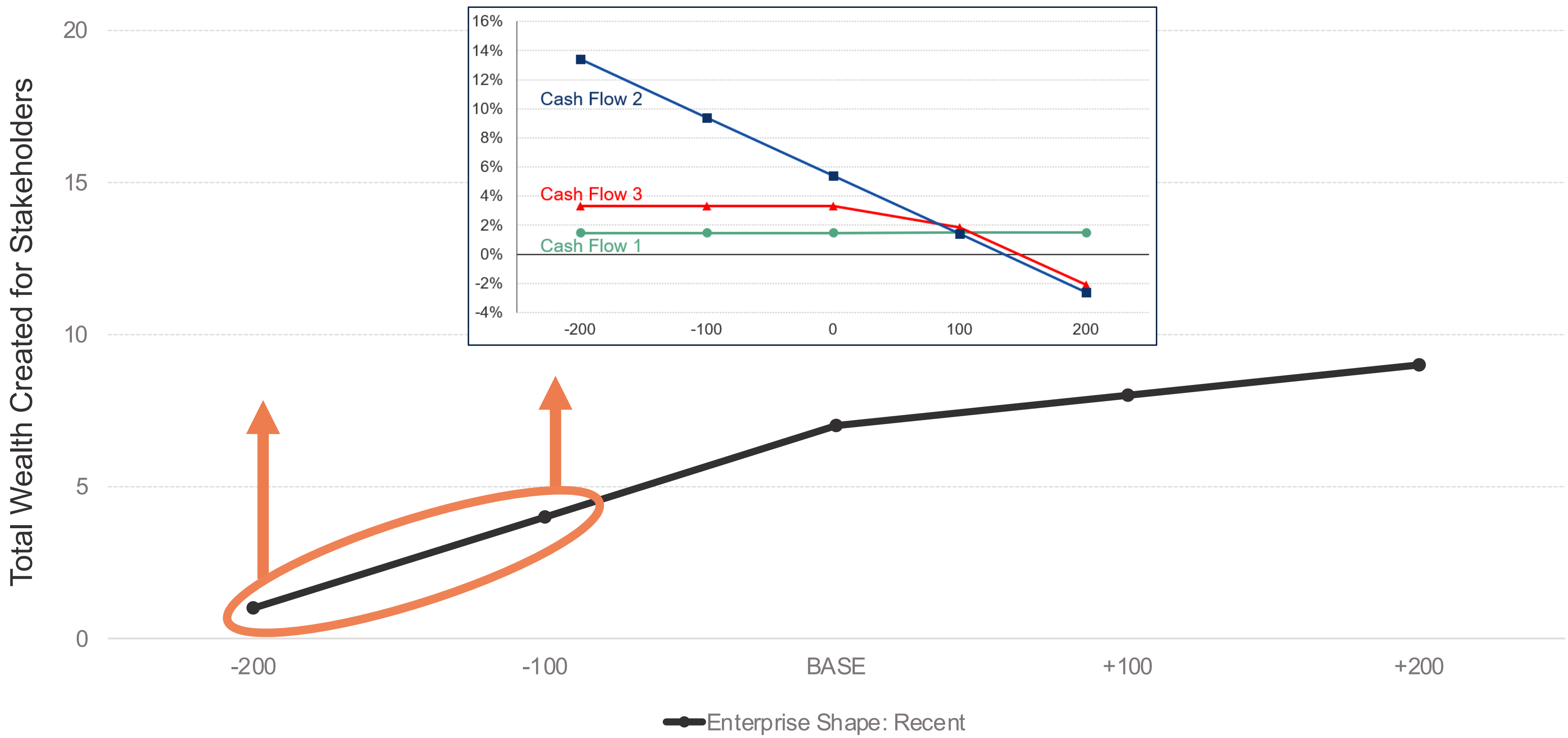



| | -200 | -100 | 0 | 100 | 200 |
|---|---|---|---|---|---|
| 1 Yr @ 1.5% | 1.49% | 1.49% | 1.49% | 1.51% | 1.51% |
| 5 Yr @ 3% | 13.40% | 9.40% | 5.40% | 1.40% | -2.60% |

Source: Performance Trust Analytics

# Can We Make Marginal Decisions Relative To Our Whole Balance Sheet?

*1 Year Horizon*




Source: Performance Trust Analytics

# #2

***Paradigm Shift:***

**The way we <u>SEE</u> the problem <u>IS</u> the problem**

Source: Performance Trust Analytics

**1** **Which Would You Choose?**

1. $100, No Matter Happens
2. Possibility of $100, $300, or $1,000
3. Possibility of $400, $500, or $900

**2** **Which Would You Choose?**

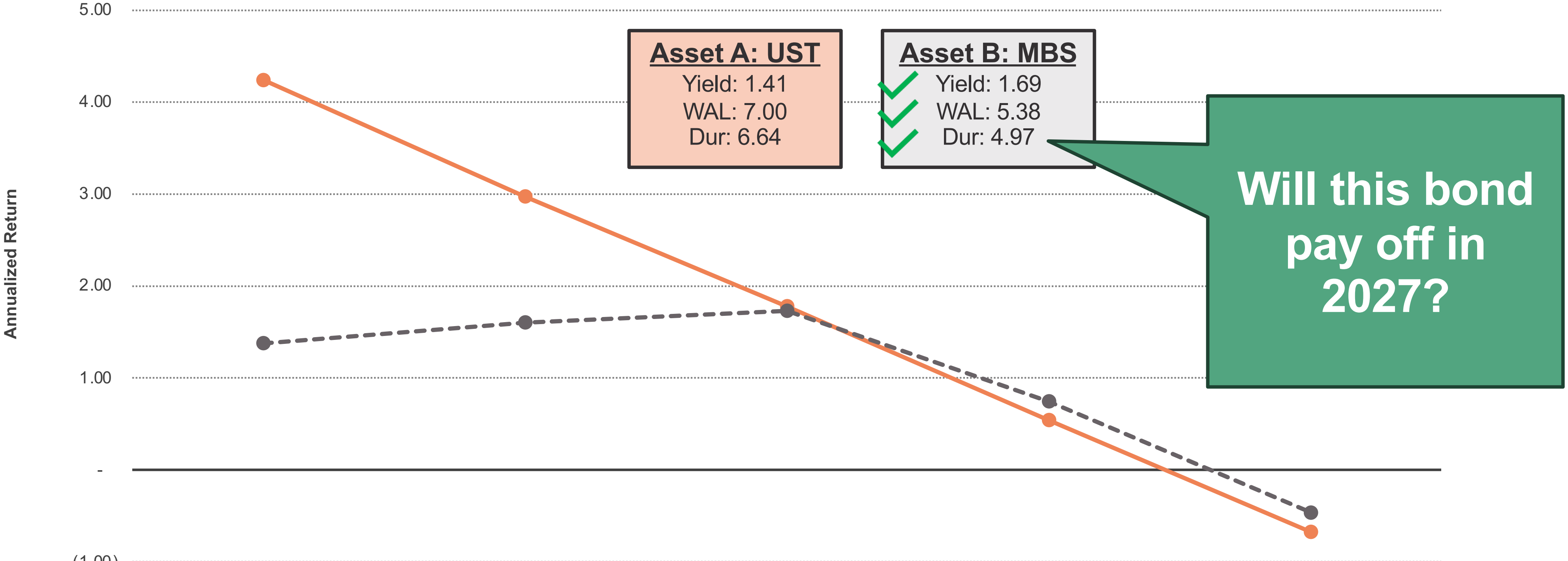
**You get a phone call…**

***"Do you want an asset with MORE yield and LESS duration?"***

| Asset A | Asset B |
|---|---|
| Yield: 1.41 | Yield: 1.69 ✓ |
| WAL: 7.00 | WAL: 5.38 ✓ |
| Duration: 6.64 | Duration: 4.97 ✓ |

# Was This Knowable Ahead Of Time?

*December 2021; 3-Year Shapes; 7-Yr UST, 20-Yr 2% Agency MBS*



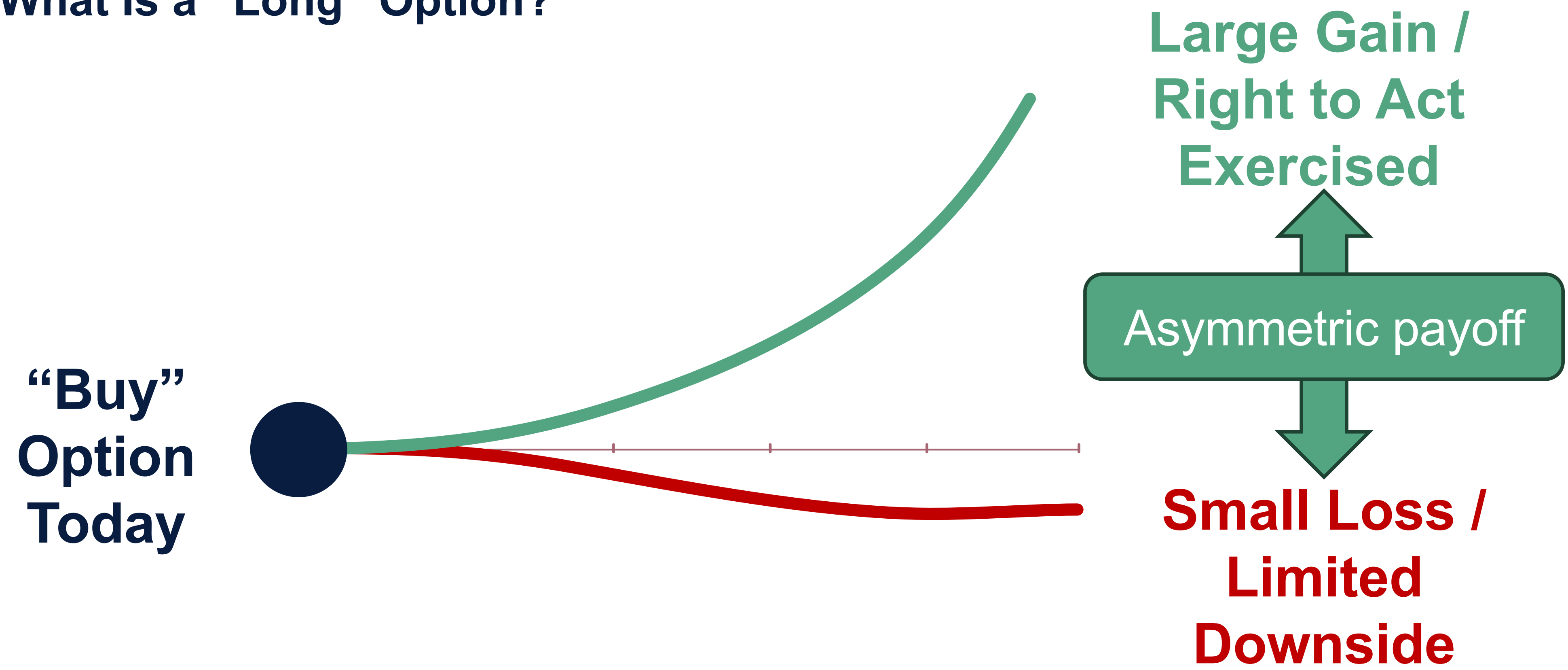

| | -200 | -100 | Unch | 100 | 200 |
|---|---|---|---|---|---|
| Asset A | 4.24 | 2.97 | 1.78 | 0.54 | (0.68) |
| Asset B | 1.38 | 1.60 | 1.73 | 0.74 | (0.46) |

Source: Performance Trust Analytics; US Treasury; Bloomberg

All options have value. I would welcome being paid in options in lieu of cash at a fair price.

-Warren Buffett

## What Is a "Long" Option?

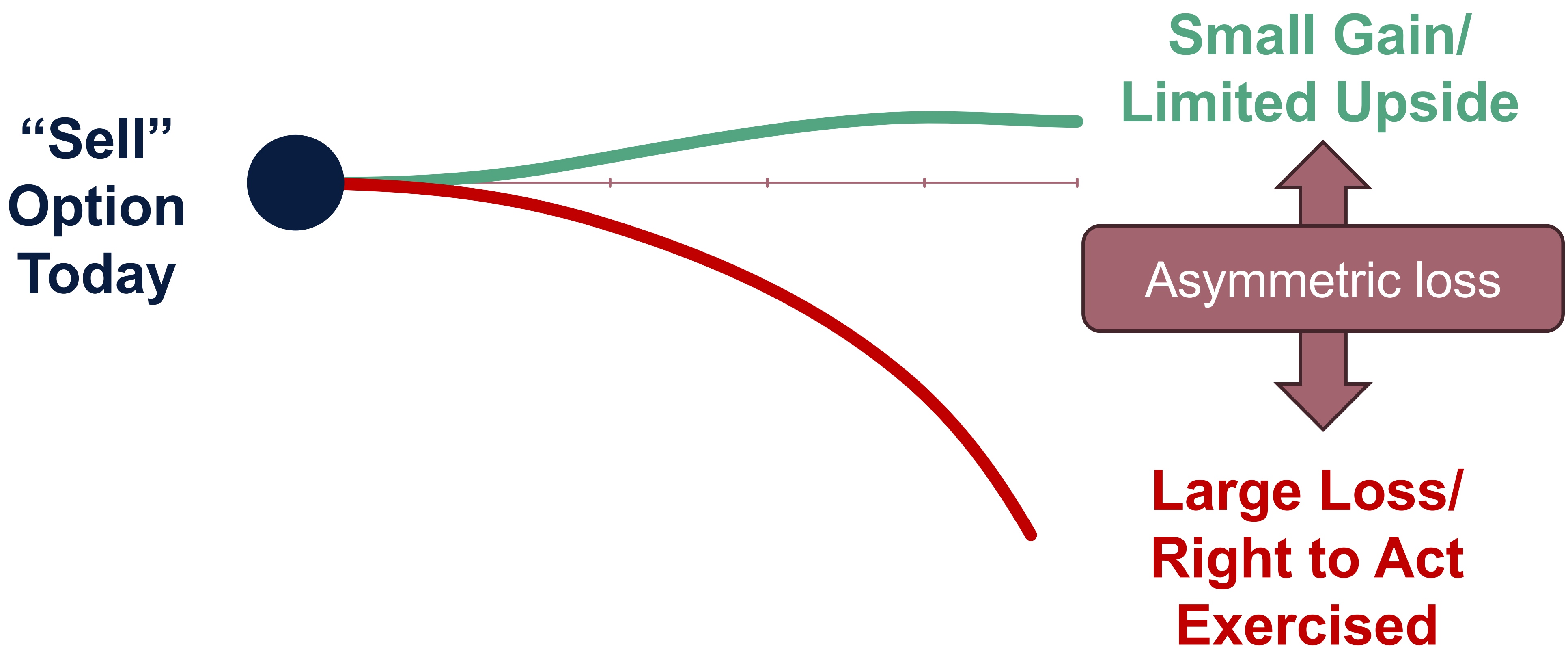



Optionality is the *ability*, not the obligation, to act



Source: Performance Trust Analytics

## What Is A “Short” Option?



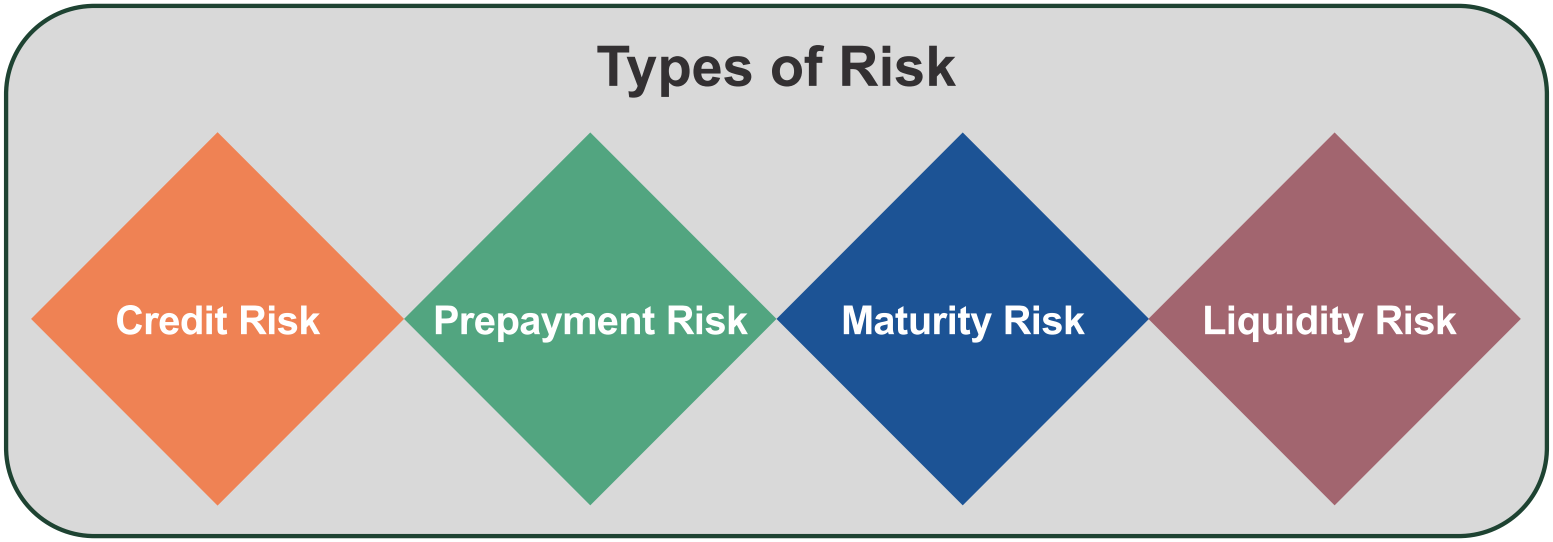

We “sell” options ALL THE TIME



Source: Performance Trust Analytics


THE ADVANCED COURSE®
June, 2018
Life as a Regulated Option Writer
Brian Leibfried, CFA
Vice President

# What Types Of Options Do We Write?




**We write options to collect premiums (income)**



Source: Performance Trust Analytics

# What Kind Of Premiums Do We Write?

**Borrower**
*Prepayment/Extension*
*Default/Credit Option*

**Issuer**
*Prepayment/Extension*
*Liquidity Option*
*Call Dates*
*Caps*

## Assets

Loans

Securities/Derivs

## Liabilities & Net Worth

Shares & Deposits

Net Worth

**Depositor**
*Flight Risk*
*Funding Advantage Risk*
*Puttable Advances*
*Death Puts on term CDs*

**Regulatory**
*Net Worth requirements*
*(Margin Call Risk)*

**We generate income (collect premiums) by being SHORT options**



Source: Performance Trust Analytics

# Are We Ever "Long" Options?

**Lender**
*Floors*

**Derivatives**
*Caps/Floors*

## Assets

Loans

Securities/Derivs

## Liabilities & Net Worth

Shares & Deposits

Net Worth

**Credit Union**
Callable Brokered CDs

**Credit Union**
*Deployable Excess Net Worth*



Source: Performance Trust Analytics

# Are We More Short Or Long Options?

## When We Are Short Options

**Borrower**

*1. Prepayment/Extension*
*2. Default/Credit Option*

**Issuer**

*3. Prepayment/Extension*
*4. Liquidity Option*
*5. Call Dates*
*6. Caps*

**Depositor**

*7. Flight Risk*
*8. Funding Advantage Risk*
*9. Puttable Advances*
*10. Death Puts on term CDs*

**Regulatory**

*11. Net Worth requirements (Margin Call Risk)*

## When We Are Long Options

**Lender**

*1. Floors*

**Derivatives**

*2. Caps/Floors*

**Credit Union**

*3. Callable Brokered CDs*

**Credit Union**

*4. Deployable Excess Net Worth*

***Notional Short >>>>>Notional Long***

***11 > 4***



Source: Performance Trust Analytics

## What Is Our Track Record Regarding Options?

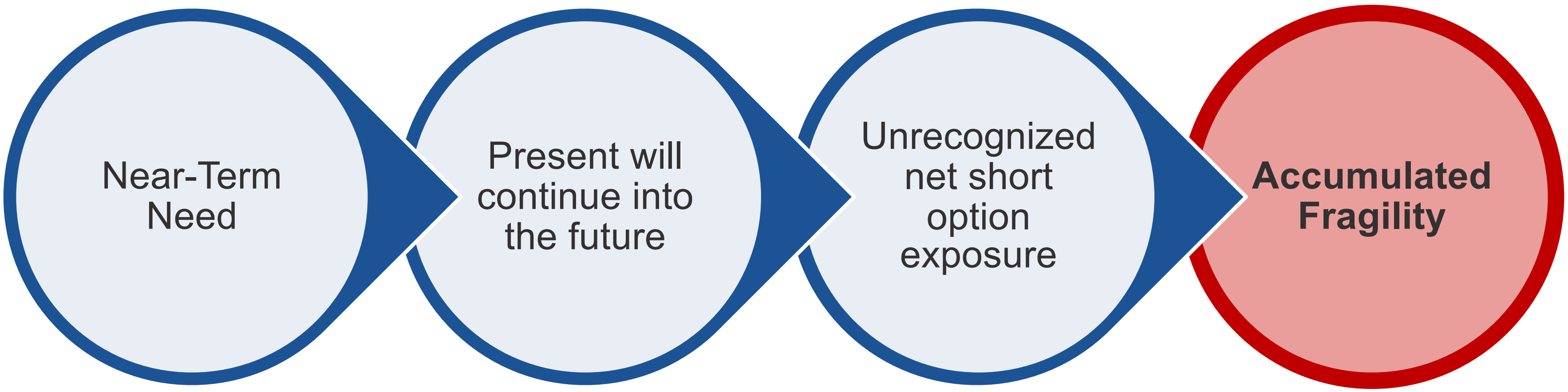
Sell Too Cheaply

Fail to Acquire When Cheap

Source: Performance Trust Analytics

# Why Are We So Short Options?

***Not fear or greed, but NEED***




- Competitors' behavior
- Budget targets
- Loan growth pressure
- Board philosophy

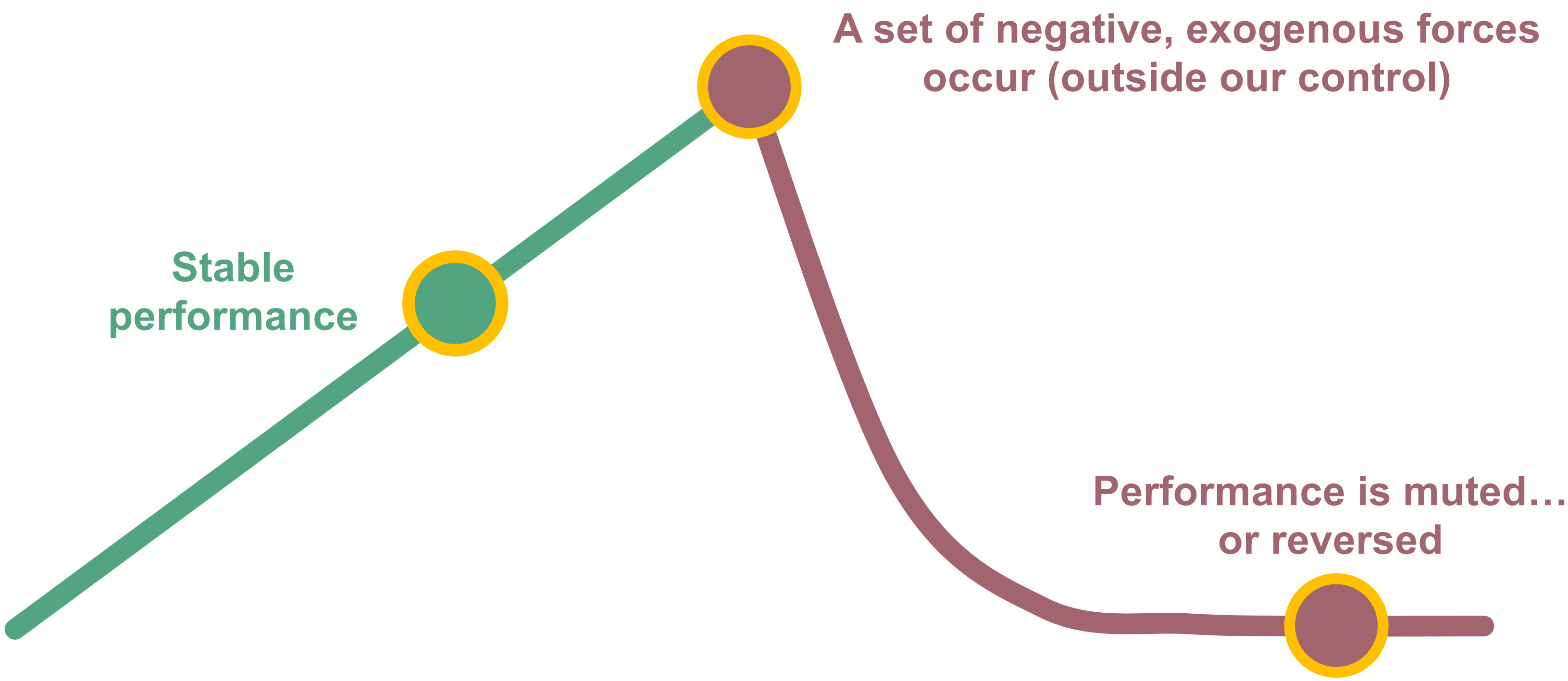
- Single-scenario thinking
- Recency bias
- Assumes present conditions will persist

- Giving away flexibility
- Failing to acquire inexpensive options

- Downside-exposure increases
- Payoff becomes asymmetric to the downside

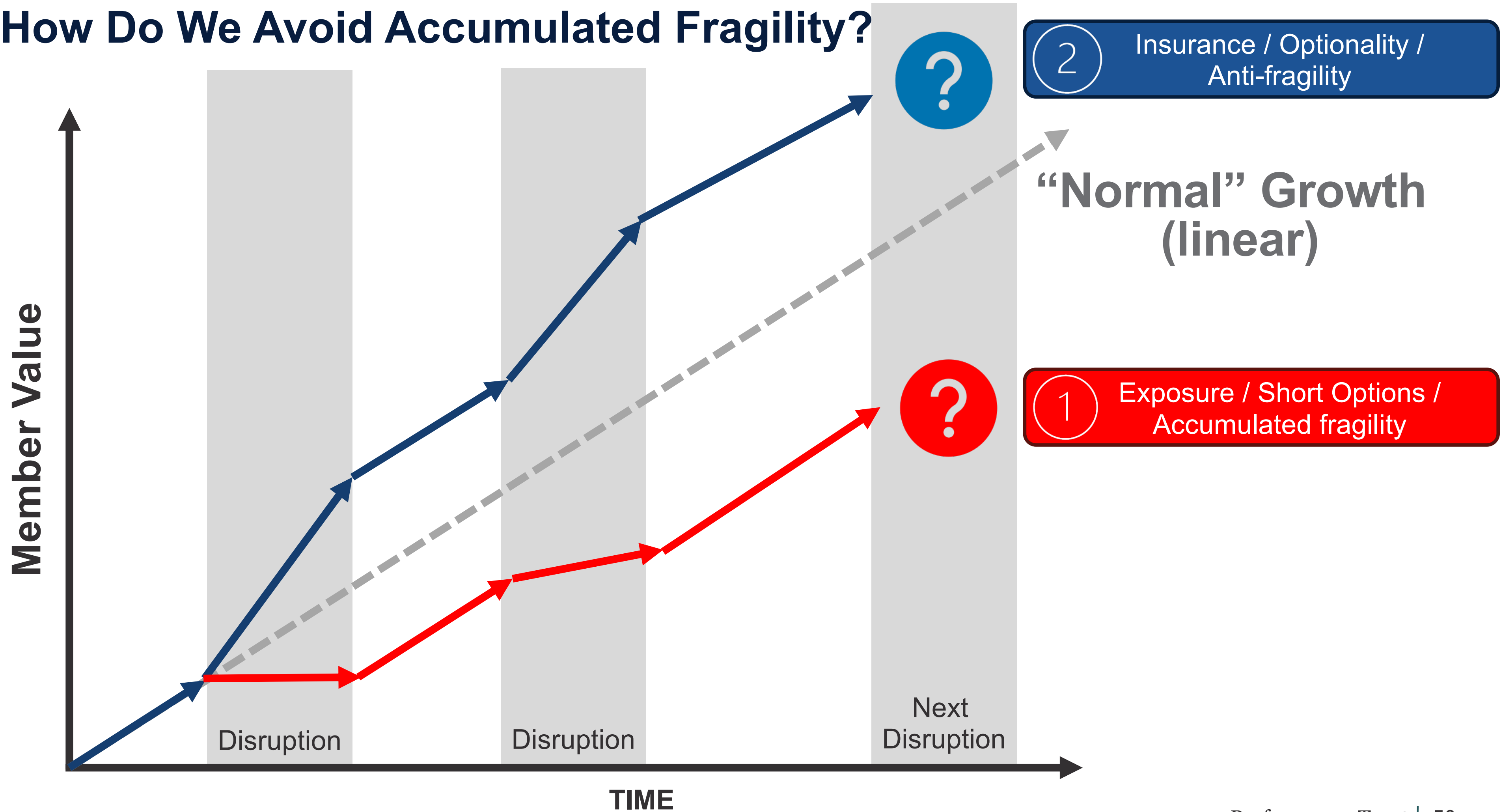
Source: Performance Trust Analytics

# What Does Accumulated Fragility Look Like?



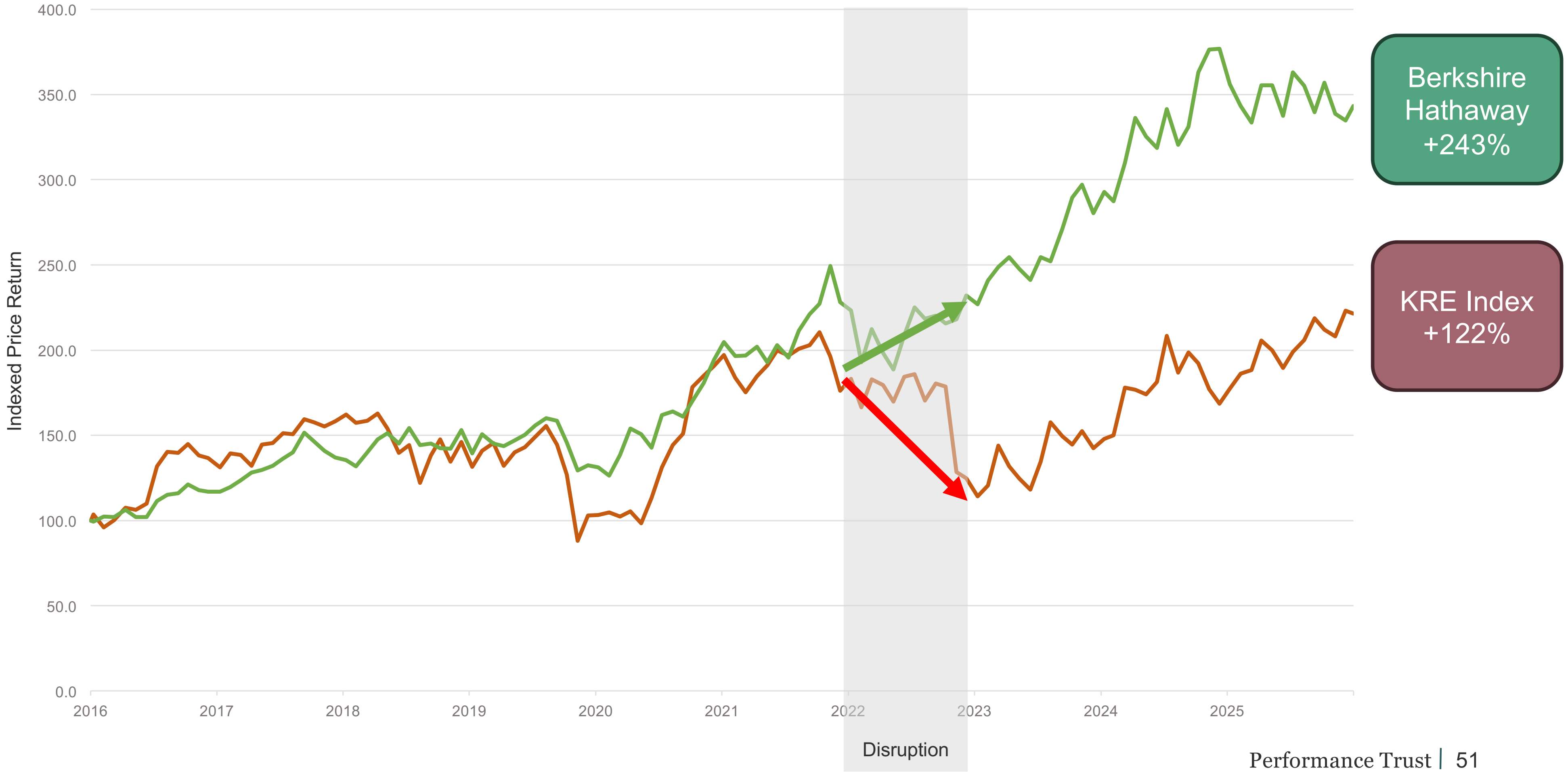

Source: Performance Trust Analytics

# How Do We Avoid Accumulated Fragility?




Source: Performance Trust Analytics. The chart is for illustrative purposes only and is not intended to represent an investment or strategy.

# What Does Accumulated Fragility Look Like In Real Life?

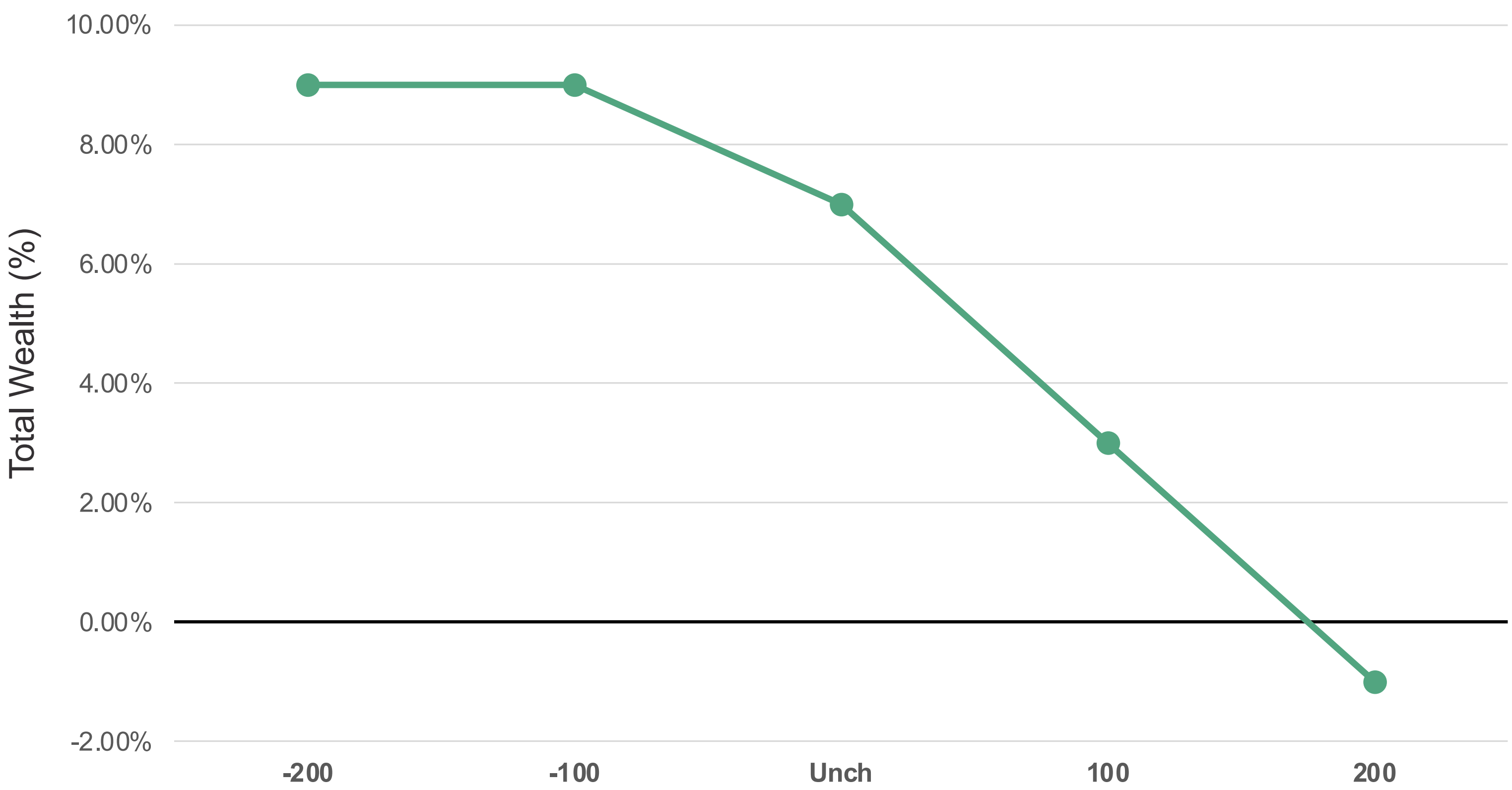



Source: Bloomberg. Past performance does not guarantee future results and there is no assurance this trend will continue. Not a recommendation or offer to buy or sell any securities.

What types of decisions are we making every day?

# What Is The Shape Of Loan We Make To Our Members?

## *5/20 CRE@7.00% (+250); 1 Year Horizon*




*Source: Performance Trust Analytics*

Do asset decisions exist in isolation?

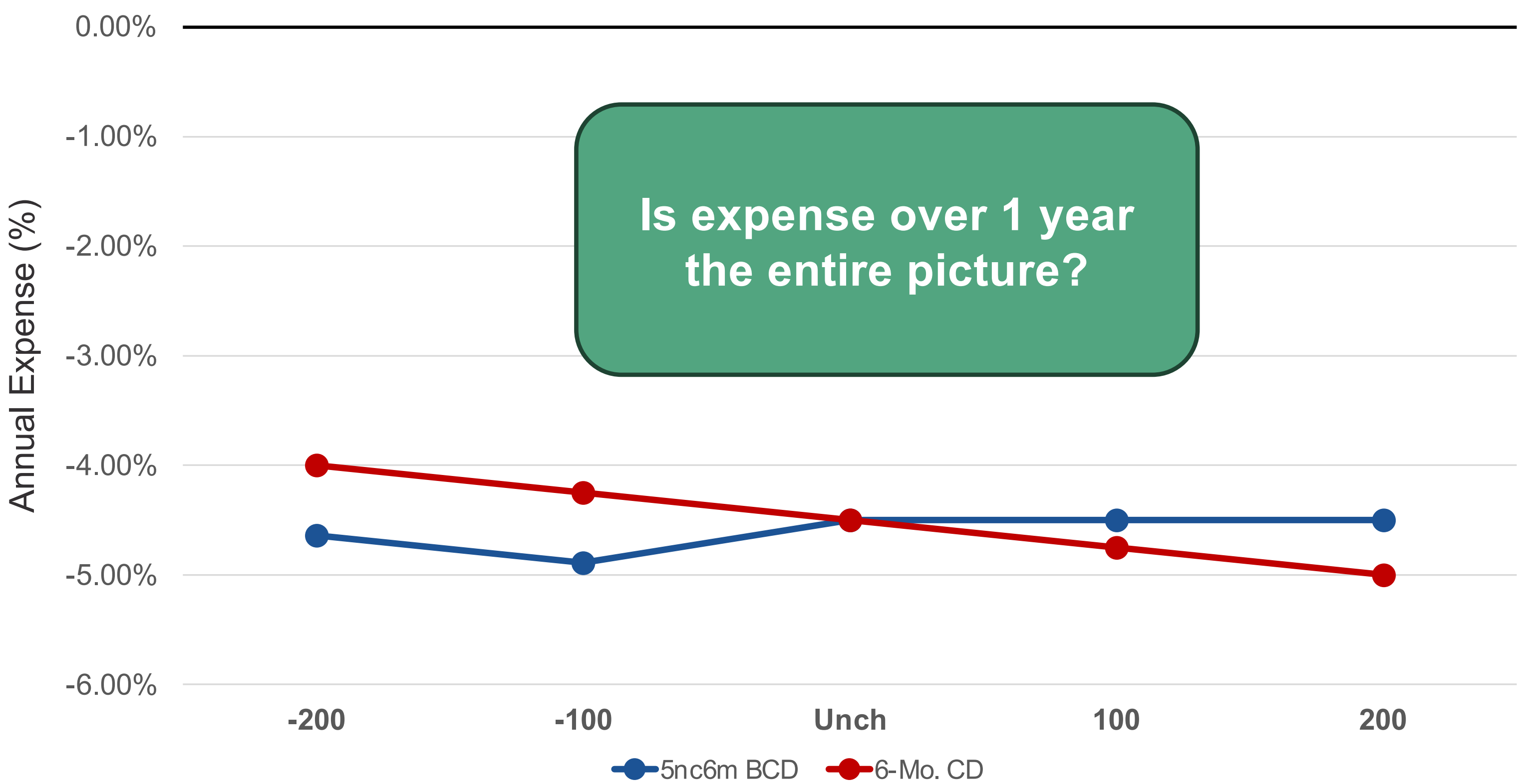
## How Do We Compare Funding Options?

| | 6-Mo. Retail CD | 5-Yr. NC 6-Mo. Brokered CD |
|---|---|---|
| Issue Price | 100 | 99.25 |
| Coupon | 4.50% | 4.35% |
| All-In Cost | 4.50% | 4.50% |

*Source: Performance Trust Analytics*

# Which Liability Is More Valuable To Us?

***1-Year Horizon***

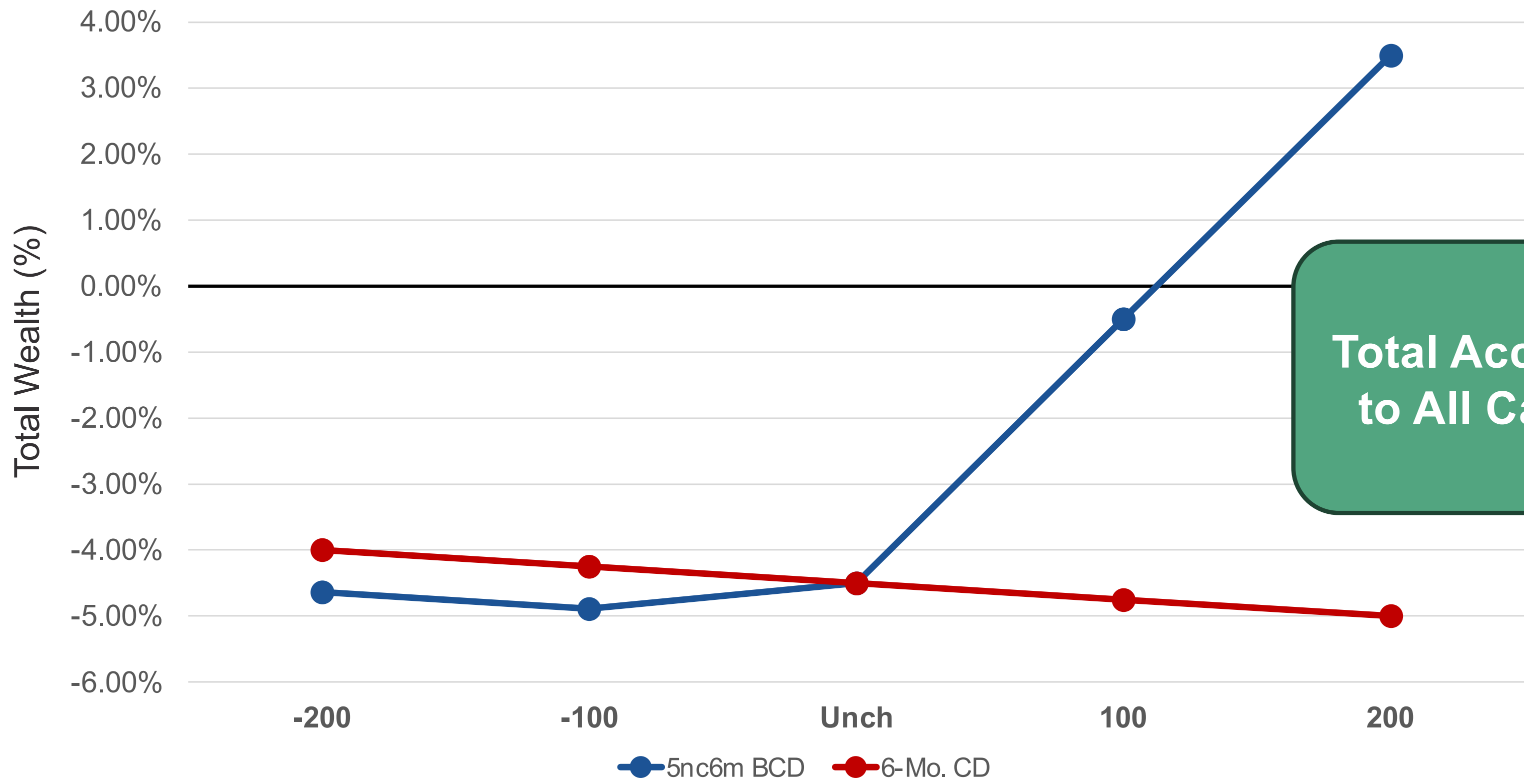




*Source: Performance Trust Analytics*

# Which Liability Is More Valuable To Us?

***1-Year Horizon***




**Total Accountability to All Cash Flows**

*Source: Performance Trust Analytics*

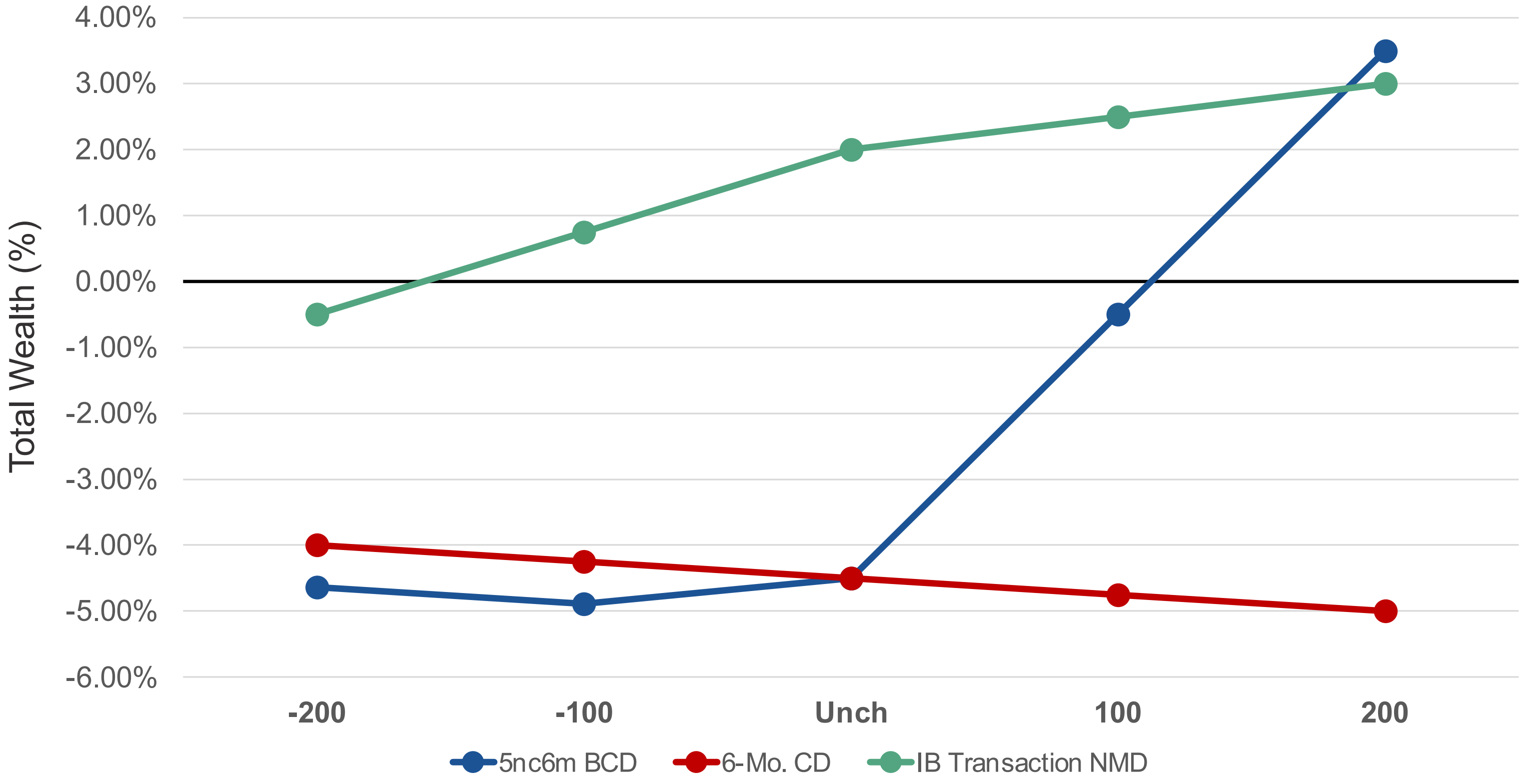
## How Do We Compare Funding Options?

| | 6-Mo. Retail CD | 5-Yr. NC 6-Mo. Brokered CD | IB Non-Maturity Share |
|---|---|---|---|
| Issue Price | 100 | 99.25 | 100 |
| Coupon | 4.50% | 4.35% | 2.00% |
| All-In Cost | 4.50% | 4.50% | 2.00% |

*Source: Performance Trust Analytics*

# How Do We See The True Value Of Core Shares?

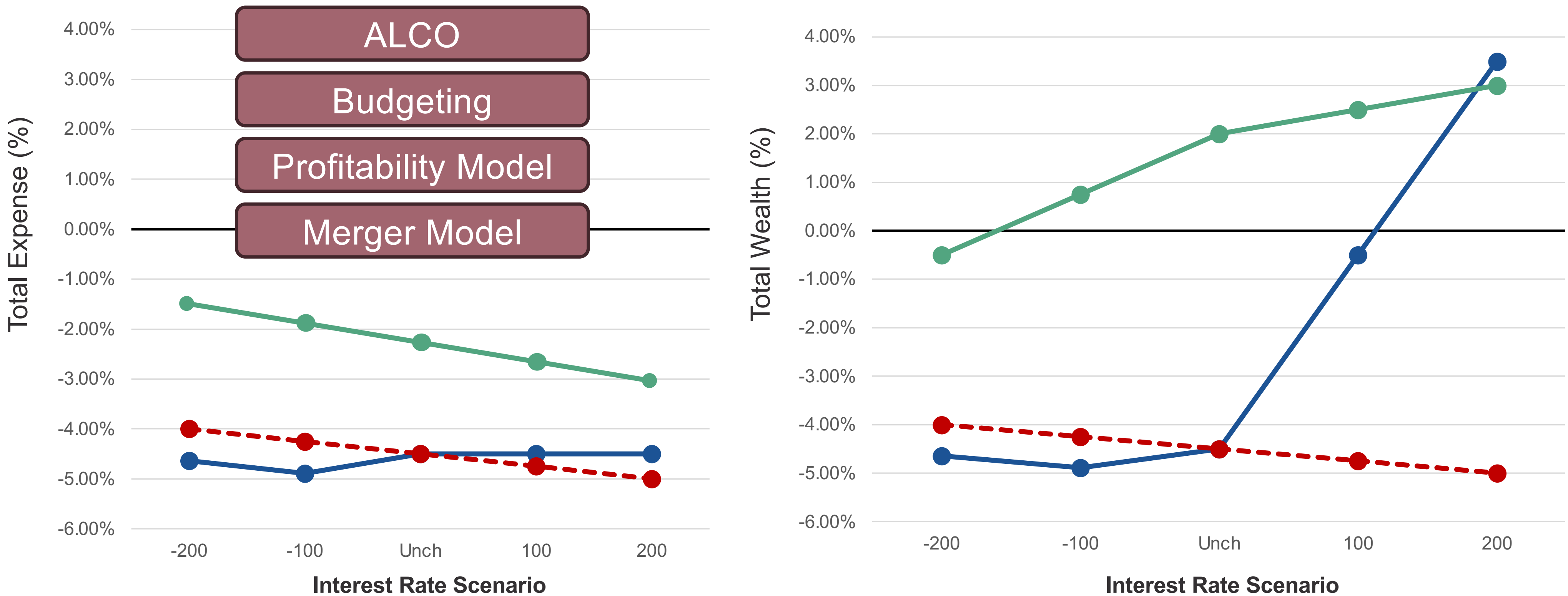
***1-Year Horizon***




*Source: Performance Trust Analytics*

# Which shows the TRUE value creation of core shares?

*1-Year Horizon*



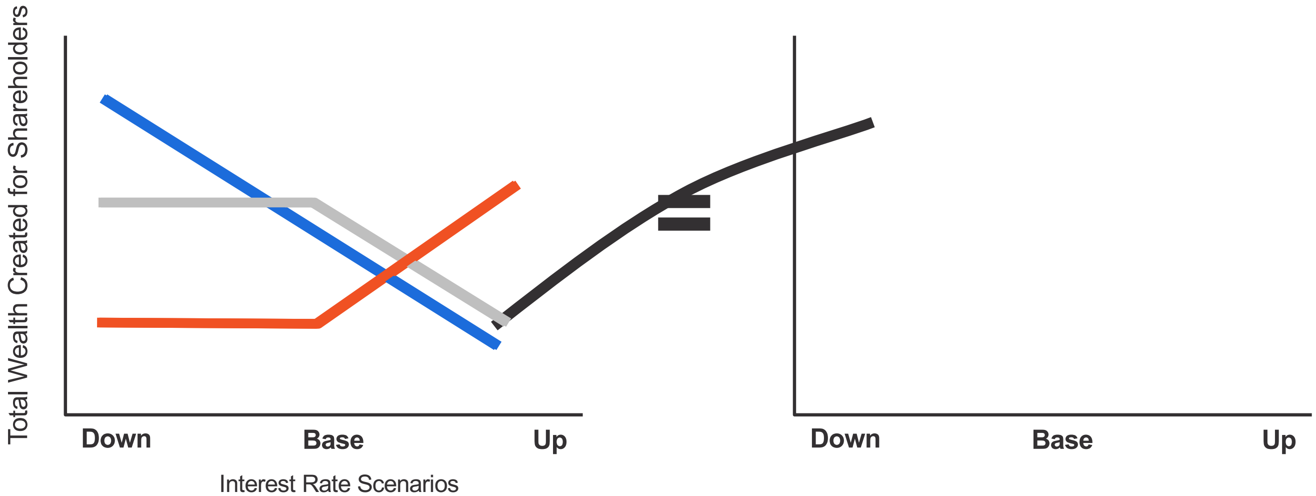

*Source: Performance Trust Analytics*

# Net Shapes

*The Power of Combinations*

# How Do We Add This All Up?

***(dollar-weighted)***

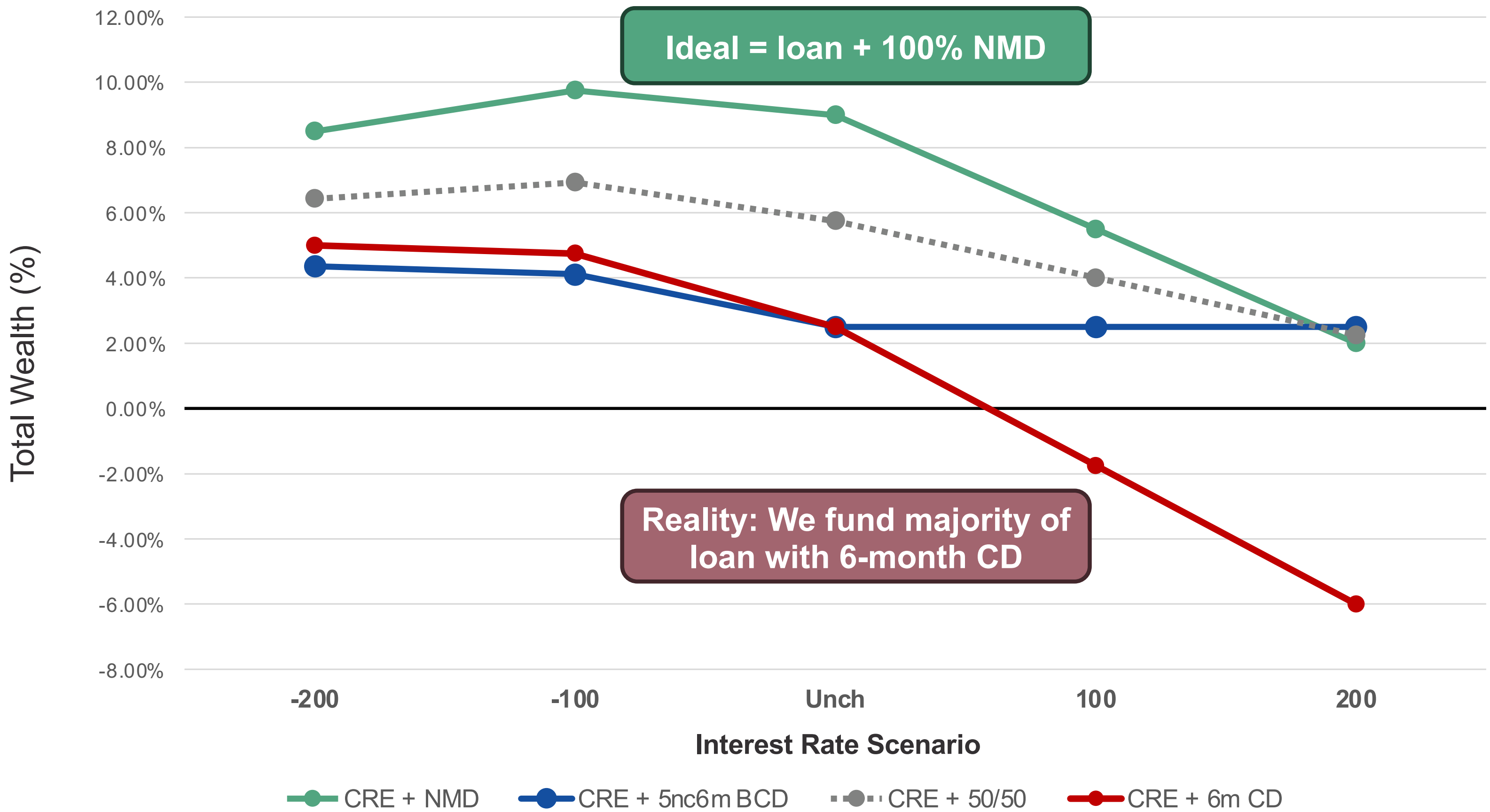



**Like fractions with a common denominator,
Shape calculations are additive**

*Source: Performance Trust Analytics*

# How Can We See The Value Of Funding The SAME Loan?

*1-Year Horizon*




*Source: Performance Trust Analytics*

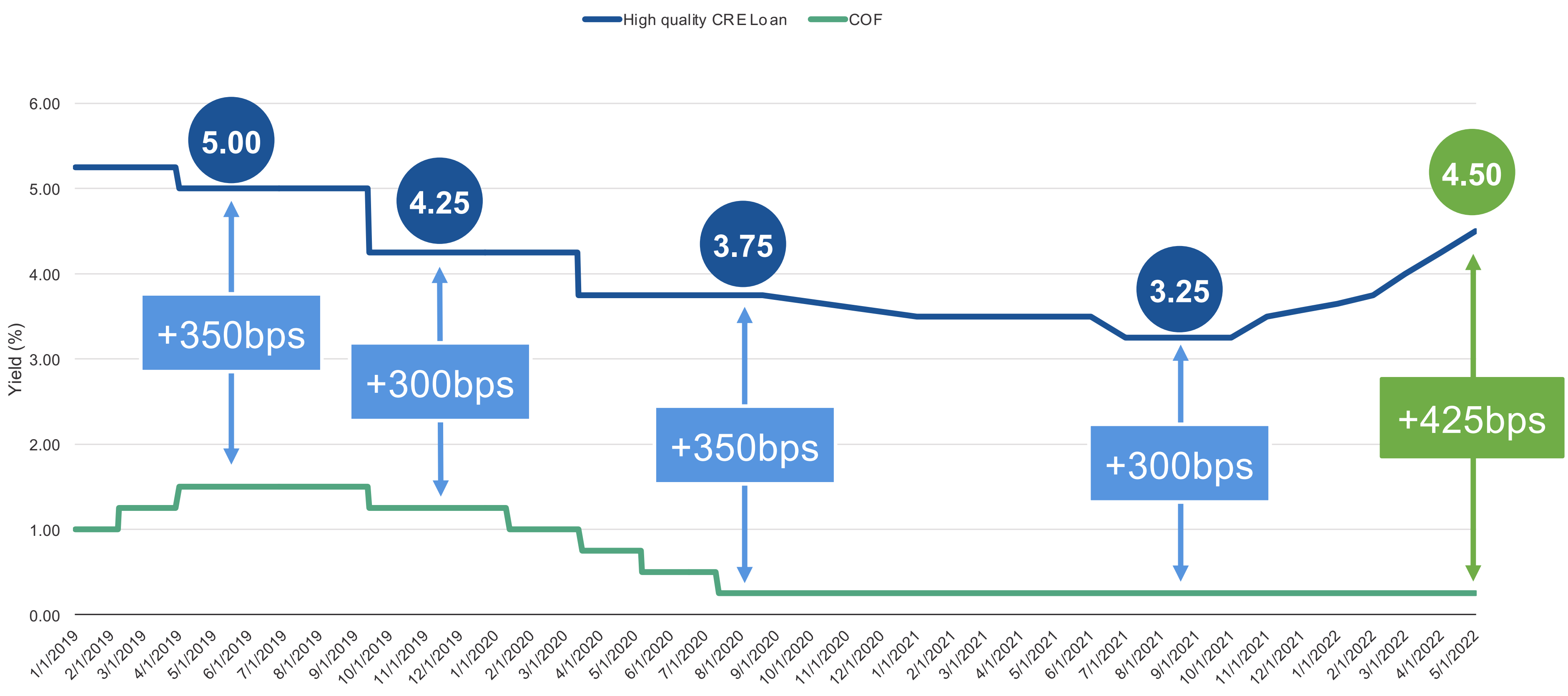
## Another Potential Combination:

## *Shapes Applied to Derivatives*

How should we think about allocating net worth to lending?

# How Should We Think About Allocating Net Worth To Lending?

***High-quality 5/20 CRE lending rates vs cost of funds ("COF")***

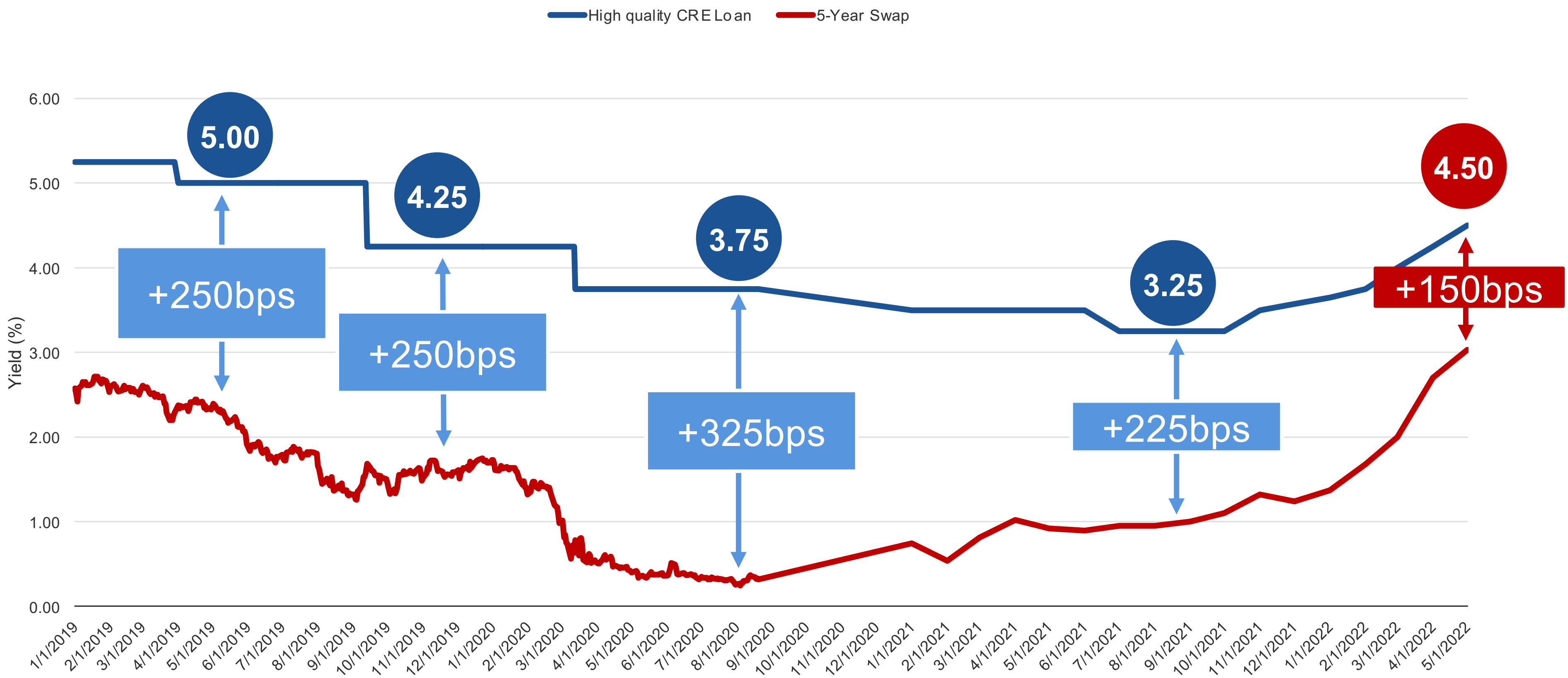





Source: Performance Trust Analytics

# How Should We Think About Allocating Net Worth To Lending?

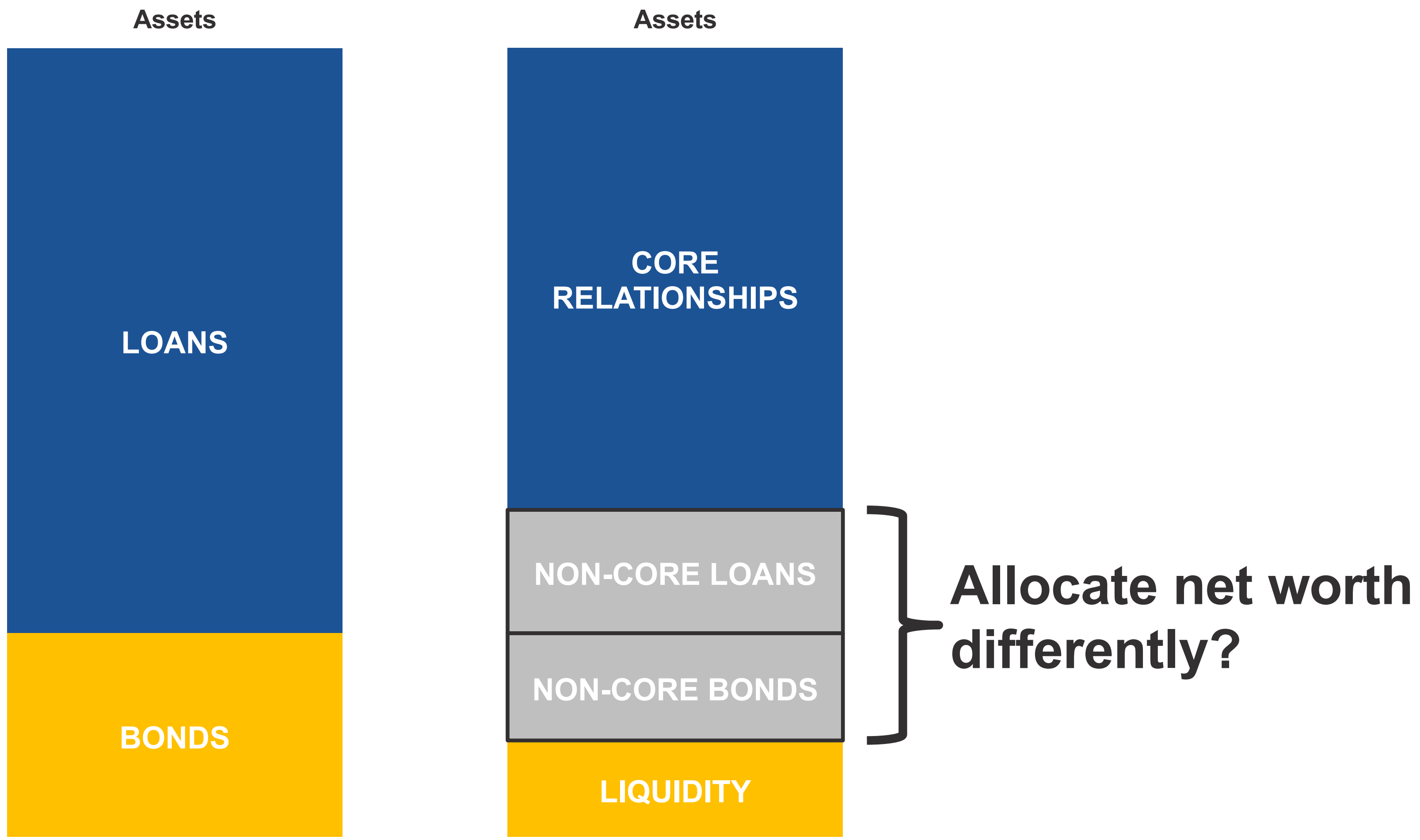
***High-quality 5/20 CRE lending rates vs 5-year swap***





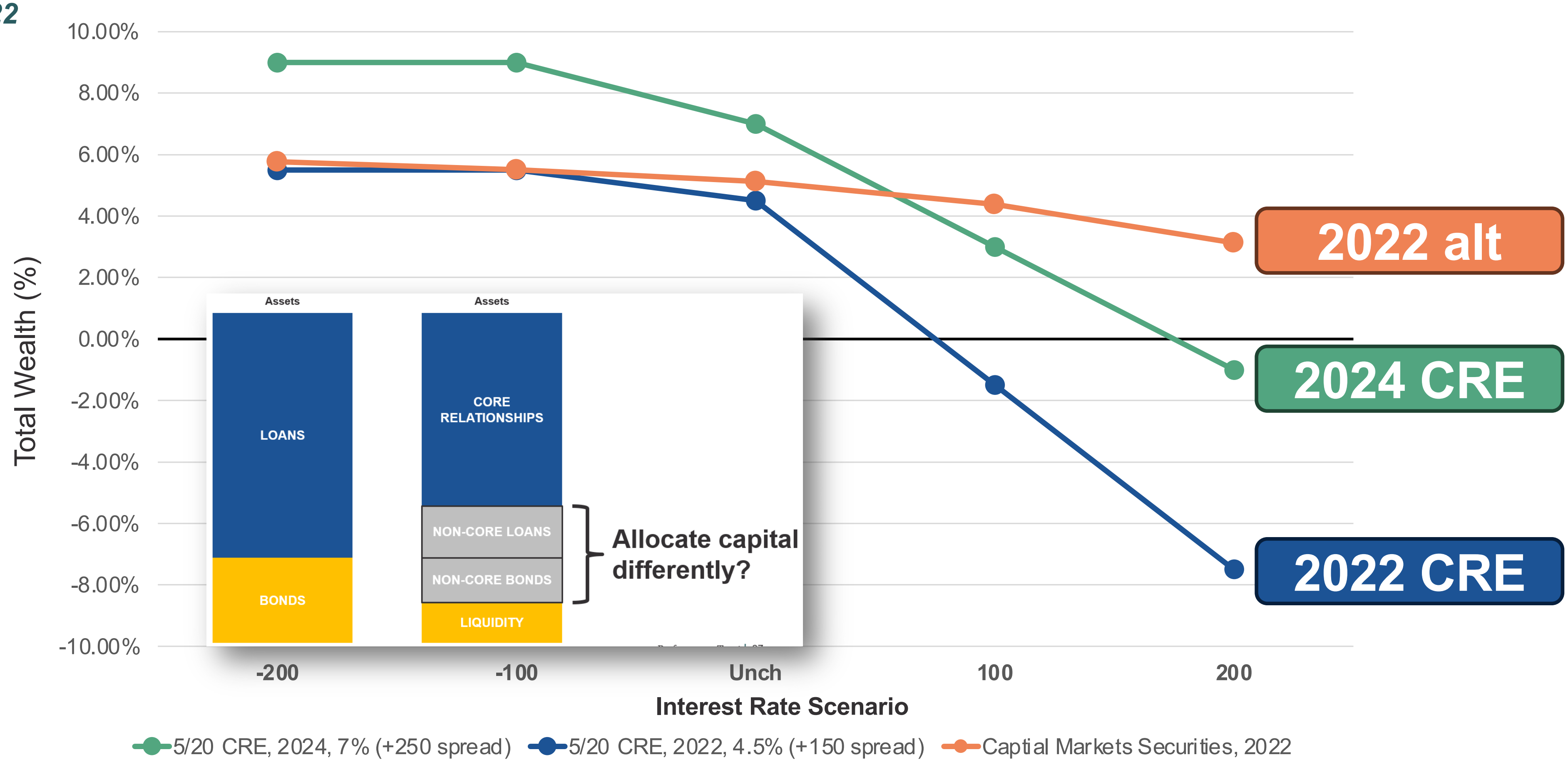

Source: Bloomberg; Performance Trust Analytics

# What Type Of Assets Do We Invite Onto Our Balance Sheet?



# Instead of Non-Core Assets, Can We Allocate Our Net Worth Differently?

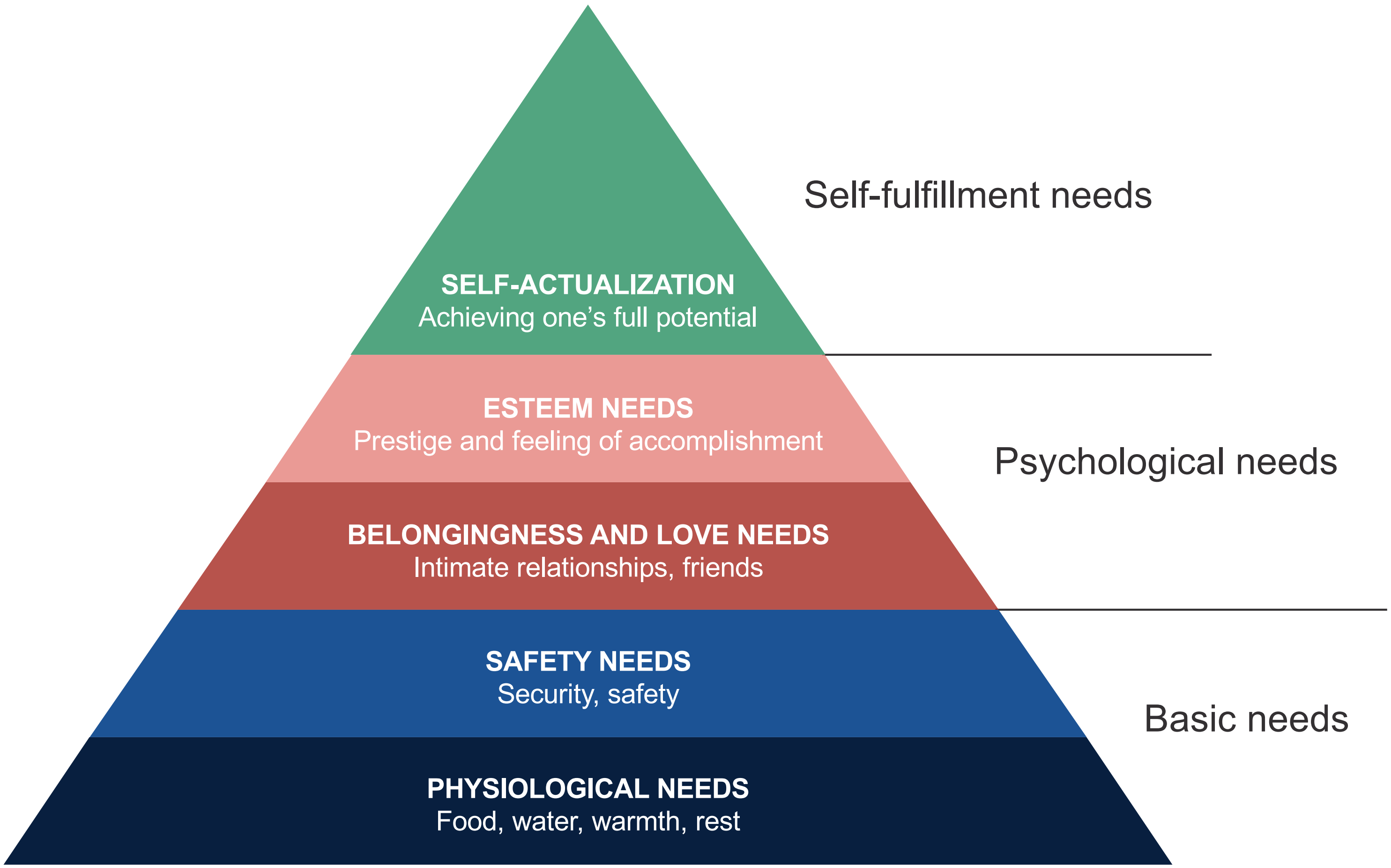
***2022***






Source: Performance Trust Analytics

# What Is Maslow's Hierarchy Of Human Needs?




Source: Abraham Maslow, Motivation and Personality, 1954

# What Is Your Credit Union's Hierarchy Of Needs?

# What Are The Core Functions Of Credit Unions?


Source: Performance Trust

# Without Margin, There Is No Mission


# RECAP

1. **To the extent we can eliminate beliefs & biases and replace them with data, your membership gains a clear advantage**

2. **We are regulated options writers**

   Make sure we are getting paid enough for being ‘short’ the option
   Look to add ‘long’ options

3. **Avoid accumulated fragility – minimize our blind spots**

   Understand the total wealth created by shares

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**Past performance is no guarantee of future results. Investing involves risks, including the potential for principal loss.**

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500 West Madison, Suite 450 | Chicago, IL 60661 | www.performancetrust.com

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