MUTUAL ENTERPRISE RISK MANAGEMENT:

Shifting Investment Positions Amidst Growing Mutual Premiums

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SPEAKERS

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MEDIAN (PER MUTUAL) - PREMIUM GROWTH

"

Median Growth of Mutual Net Premiums* *(YE-21 to YE-22)*:

6.05%

"

Max: **99.4%** | Min: **-250.6%** | Average: **3.98%**

*Source: S&P Global – Mutual Insurance Companies with at least $1M Net Premiums (YE-2022)

MEDIAN (PER MUTUAL) – SURPLUS DECLINE

“

Median Decline of Mutual Surplus* *(YE-21 to YE-22)*:

-4.25%

”

Max: **43.7%** | Min: **-182.3%** | Average: **-7.46%**

*Source: S&P Global – Mutual Insurance Companies with at least $1M Net Premiums (YE-2022)

OPERATING LEVERAGE: TOTAL

“

Median Mutual Operating Leverage* *(YE-22)*:

73.46%

”

Average: **109.57%**

*Source: S&P Global – Mutual Insurance Companies with at least $1M Net Premiums (YE-2022)

RISK ASSETS – TO – SURPLUS: PER MUTUAL

“

Median Mutual Risk Assets – to – Surplus* *(YE-22)*:

34.68%

”

Max: **375.35%** | Min: **0%** | Average: **42.19%**

*Source: S&P Global – Mutual Insurance Companies with at least $1M Net Premiums (YE-2022)

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CHANGE IN INVESTMENT REGIME & EXPECTATIONS

- 18 months ago, mutuals were operating in an environment conditioned by previous 13 years of low interest rates.
- THAT script has been completely flipped.

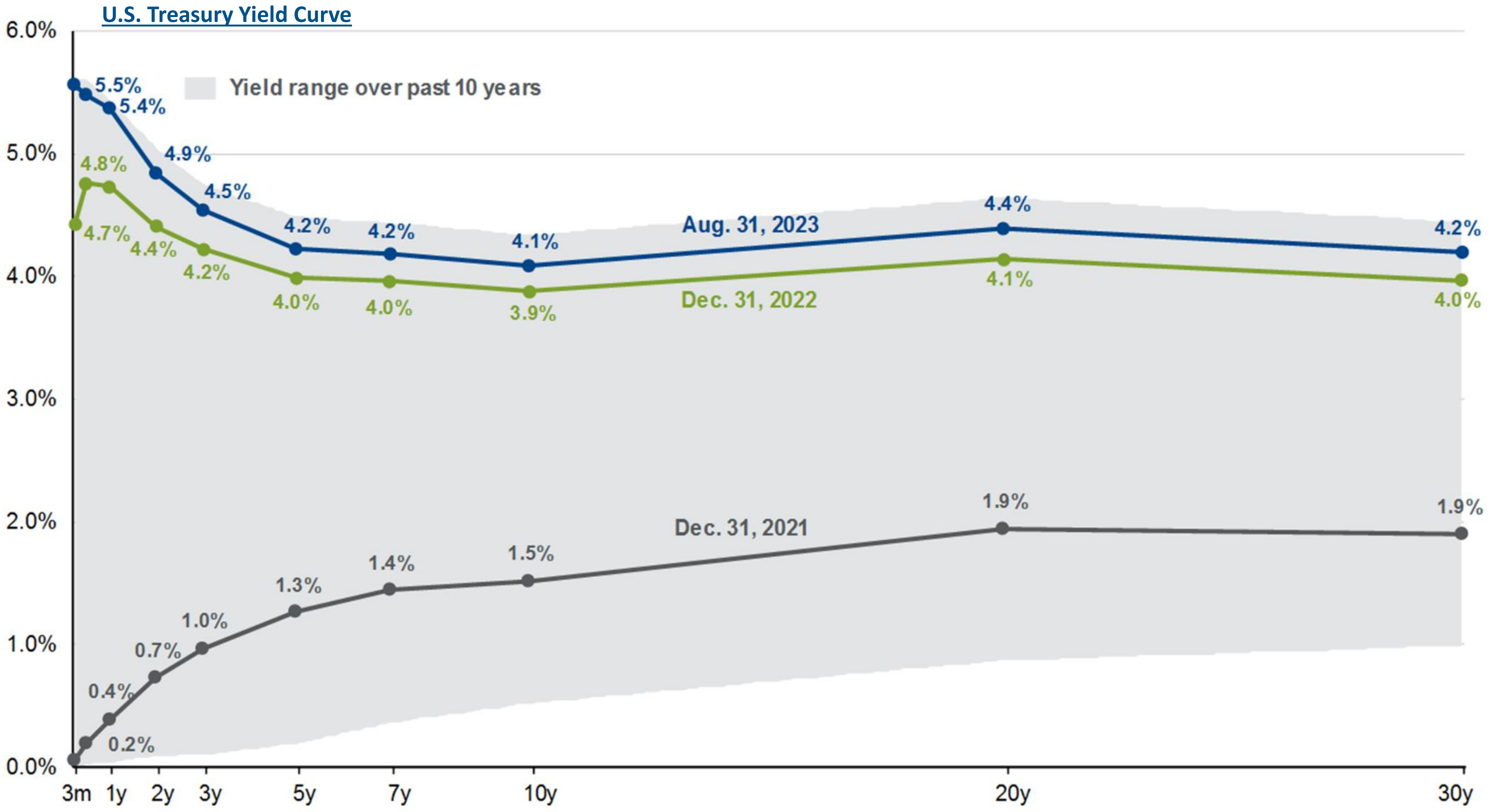
Index	YTW @ 12/31/2021	YTW @ 8/31/2023	Chg In YTW	YTW Multiple relative to 12/31/2021	Additional Annual Income per $10M $ 10,000,000
Aggregate	**1.75%**	**4.97%**	**3.22%**	**2.84**	**$ 322,000**
Intermediate Aggregate	**1.55%**	**4.96%**	**3.41%**	**3.20**	**$ 341,000**
U.S. Treasury	1.23%	4.51%	3.28%	3.67	$ 328,000
U.S. 3-Month Treasury	0.05%	5.45%	5.40%	109.00	$ 540,000
U.S. 2-Yr Treasury	0.73%	4.85%	4.12%	6.64	$ 412,000
U.S. 5-Yr Treasury	1.26%	4.24%	2.98%	3.37	$ 298,000
U.S. 10-Yr Treasury	1.50%	4.10%	2.60%	2.73	$ 260,000
U.S. 30-Yr Treasury	1.89%	4.20%	2.31%	2.22	$ 231,000
U.S. Agency MBS	1.98%	5.02%	3.04%	2.54	$ 304,000
ABS	1.13%	5.49%	4.36%	4.86	$ 436,000
CMBS	1.88%	5.79%	3.91%	3.08	$ 391,000
U.S. Credit	2.25%	5.53%	3.28%	2.46	$ 328,000
A-Rated Corporates	2.11%	5.45%	3.34%	2.58	$ 334,000
BBB-Rated Corporates	2.55%	5.87%	3.32%	2.30	$ 332,000
Municipal Bond	1.11%	3.79%	2.68%	3.41	$ 268,000
Taxable Municipal Bond	2.33%	5.23%	2.90%	2.24	$ 290,000
U.S. High Yield	4.21%	8.41%	4.20%	2.00	$ 420,000
Global Agg. (USD)	1.31%	3.91%	2.60%	2.98	$ 260,000

Source: Strategic Asset Alliance, Bloomberg

INVESTMENT CONSIDERATIONS #1: LIQUIDITY

Maturity	Ask Yield
10/3/2023	5.37%
10/31/2023	5.41%
11/30/2023	5.42%
1/2/2024	5.50%
2/29/2024	5.51%
8/8/2024	5.40%

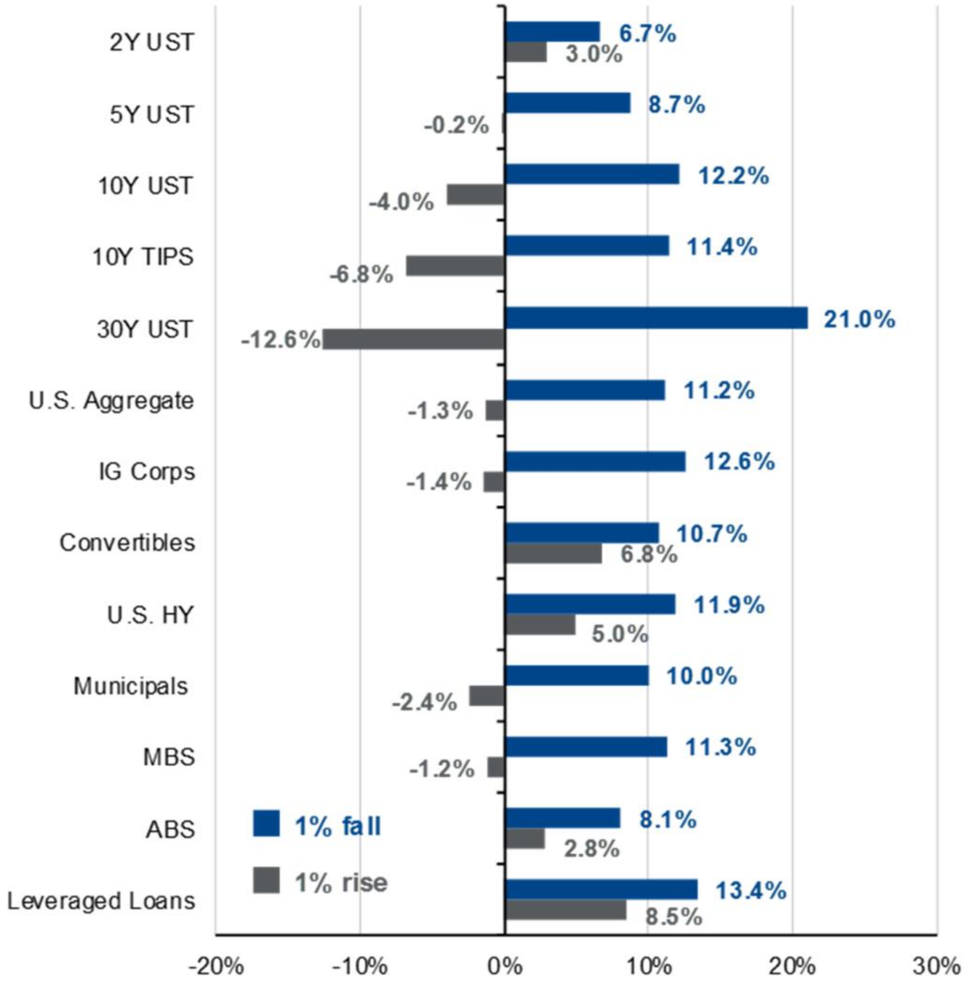
Despite market noise, can manage liquidity in 2023/2024 and get paid for it



Source: Yield Curve - JP Morgan, 8/31/23; Active T-bills - Bloomberg Terminal 9/5/23

INVESTMENT CONSIDERATIONS #2: DURATION

Interest Rate Risk (Total Return w/ 1% change in rates)



Impact of a 1% rise or fall in interest rates

Total return, assumes a parallel shift in the yield curve

…what about shifting some core fixed income to equity?

Long IG Credit	**Long IG**	**Cash**	**Portfolio**
Allocation	**100%**	**0%**	100%
Yield	5.47	5.34	**5.47**
6M Volatility	13.89	0.23	**13.89**
Carry/Vol	0.39	22.95	**0.39**

Barbell	**SPW (E/P)**	**Cash**	**Portfolio**
Allocation	**50%**	**50%**	100%
Yield	6.34	5.34	**5.84**
6M Volatility	17.11	0.23	**8.67**
Carry/Vol	0.39	22.95	**0.69**

Source: JP Morgan, 8/31/23; BlackRock 7/19/23

INVESTMENT CONSIDERATIONS #3: REALIZED LOSSES

1) STAT vs GAAP/GASB

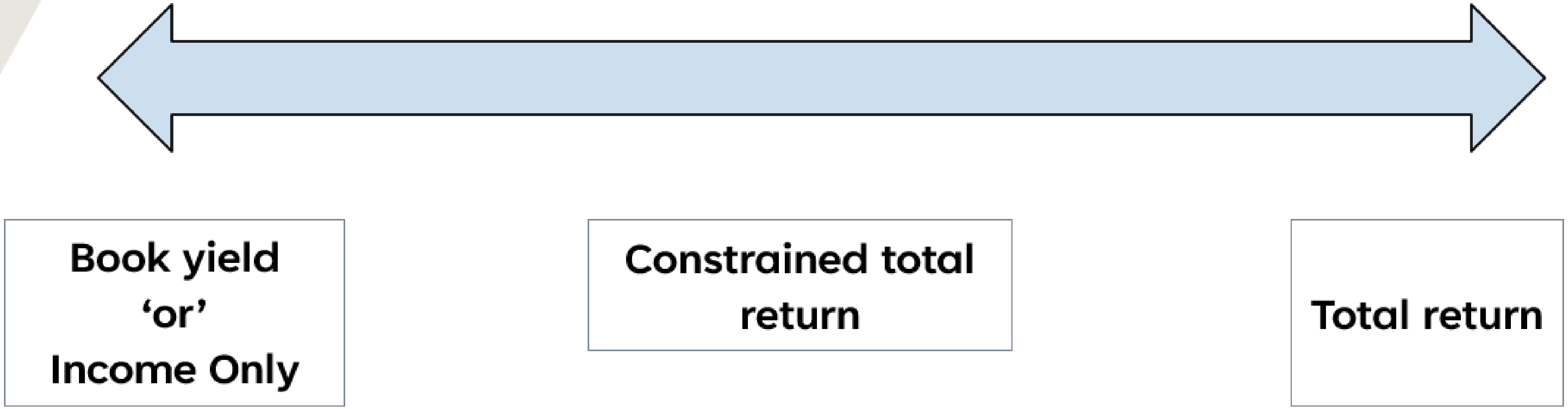
2) Optic Issues with Regulators/Boards & AM Best ramifications

3) Shortening payback periods

4) Other tax considerations

INVESTMENT OBJECTIVES

Where do you fall on this objective continuum and why?



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INVESTMENT OBJECTIVES

Where do you fall on this objective continuum and why?

Book yield
'or'
Income Only

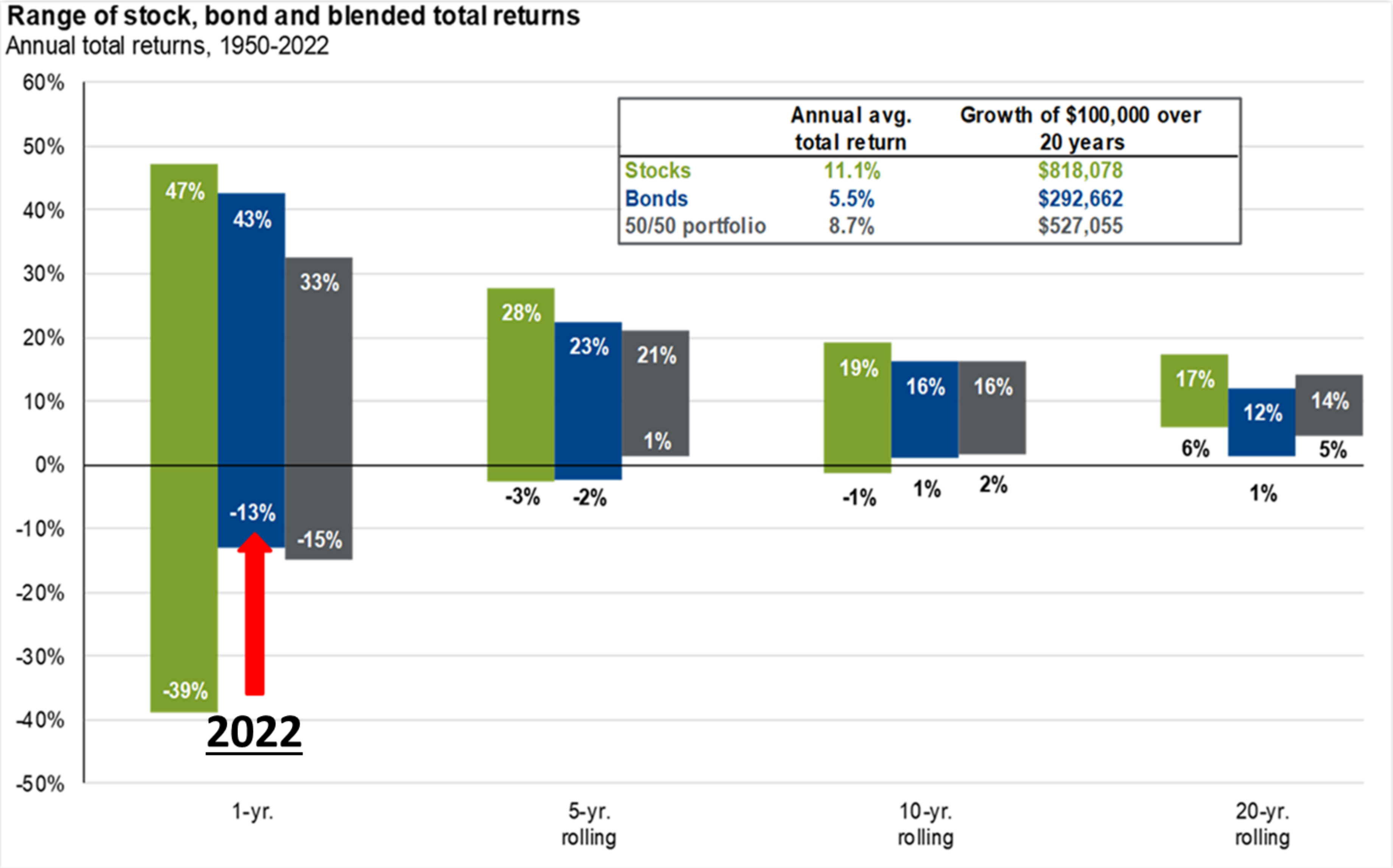
Constrained total return

Most Mutuals & Insurers

Total return

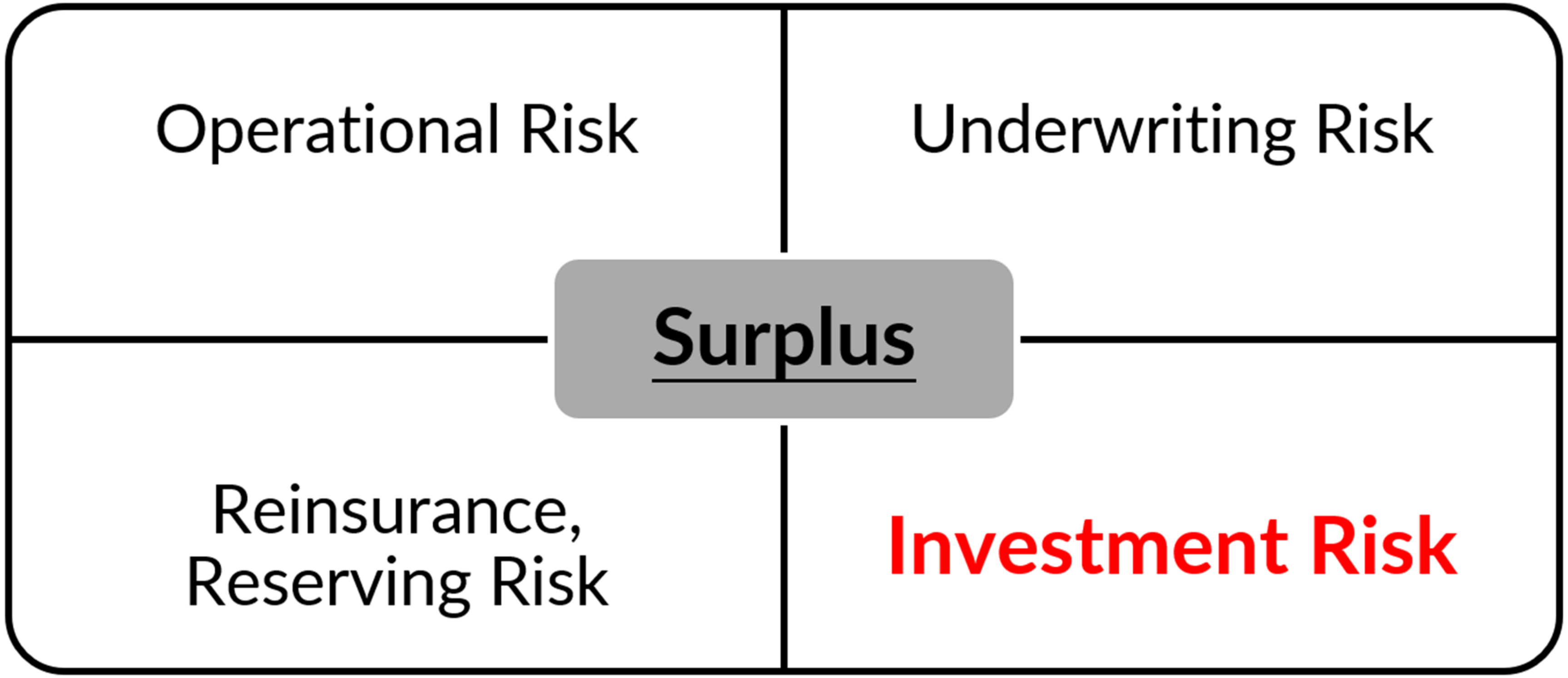
LONG TERM PERSPECTIVE – PATIENCE PAYS

- **Always consider the relationship between short-term pain (i.e., mark-to market risk) and expected long-term gain that is tolerable to your organization's enterprise goals and objectives.**



Source: JP Morgan Asset Management

IMPORTANCE OF CAPITAL EFFICIENCY

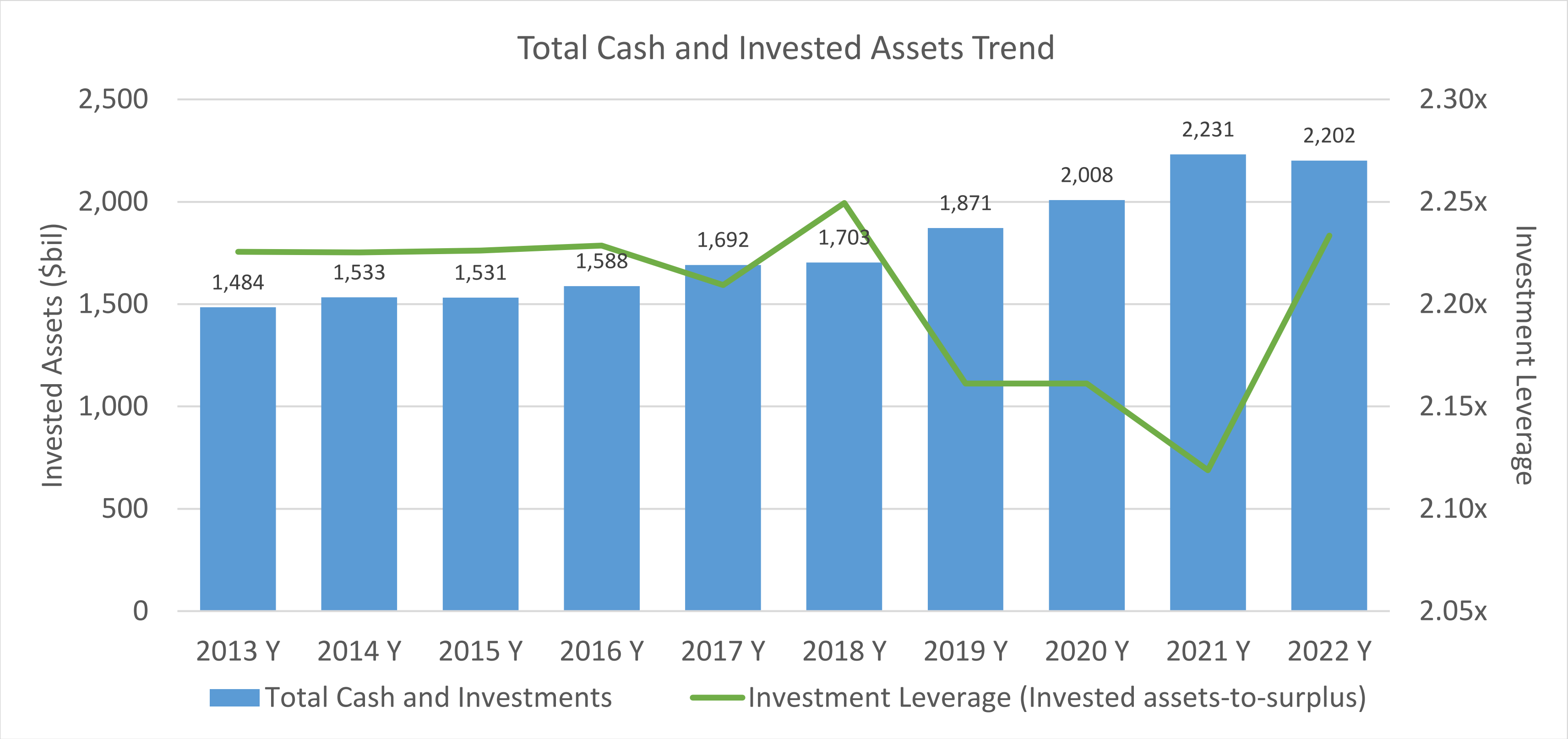


1) Portfolio designed to support everything going on with insurance operations
2) Reinsurance tightening up availability
3) How is surplus, utilization, capital efficiency evolving?
4) How is your investment portfolio going to support it?

Integrating Investments in Mutuals' Enterprise Risk

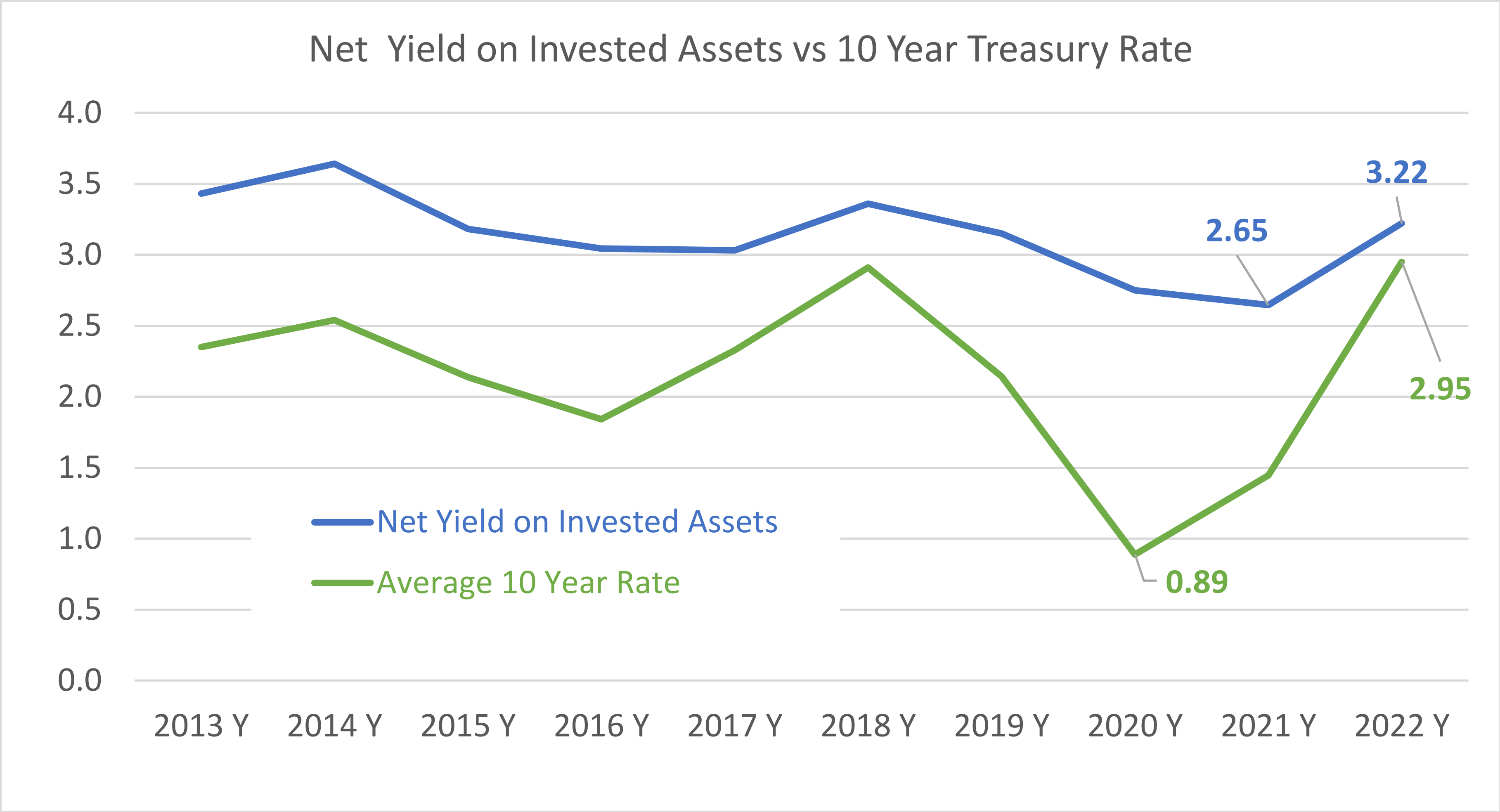
INVESTED ASSET GROWTH

Invested assets were down 1.3% in 2022 vs 2021. However, surplus was down over 6% for the period, raising investment leverage back to pre-pandemic levels.



Sources: S&P Capital IQ Pro, NEAM

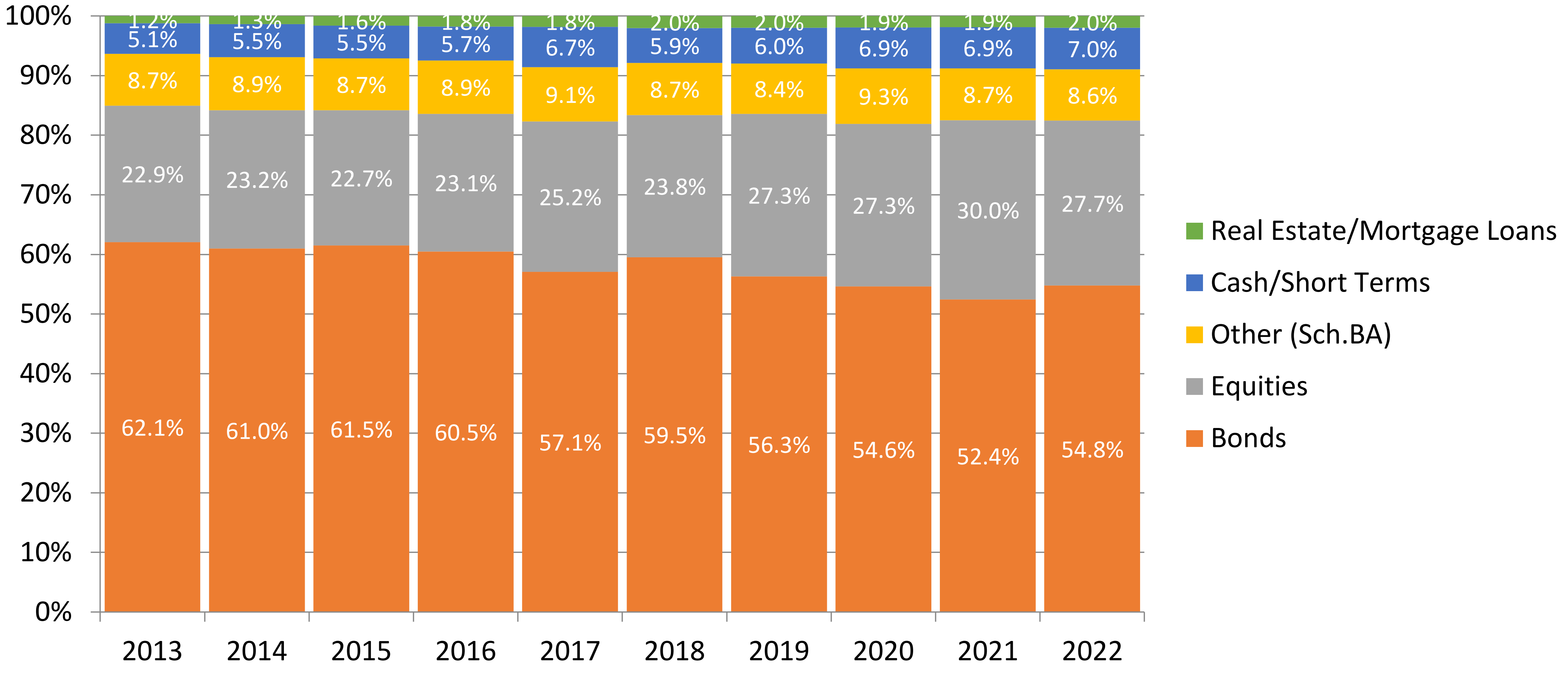
MARKET YIELD IMPACT ON INVESTED ASSETS



Sources: S&P Capital IQ Pro, Macrotrends.net, NEAM

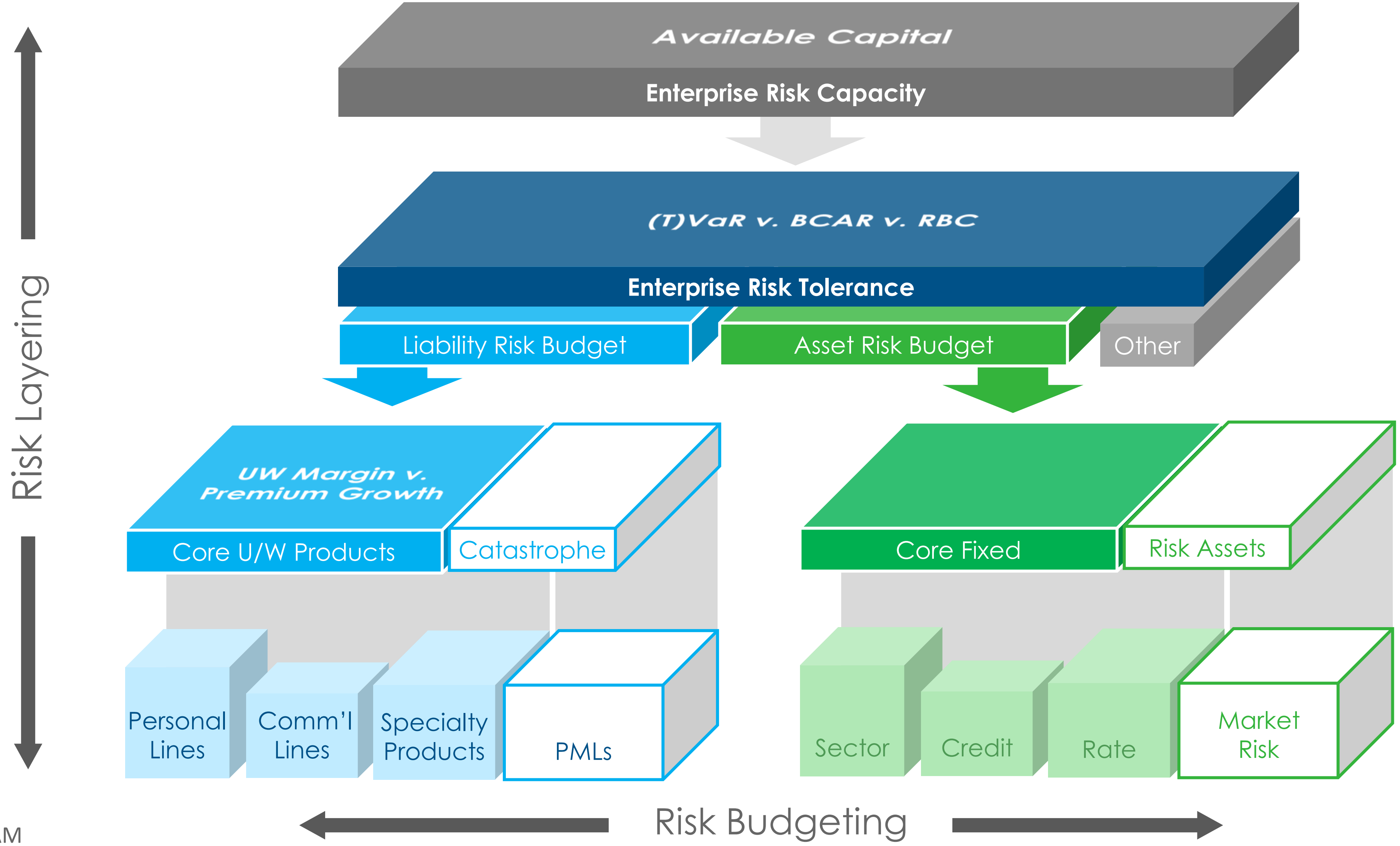
BONDS GROW / EQUITIES DO NOT

- Cash and short-term holds at 6.9-7.0%
- Bond and equity allocations back to 2020 levels



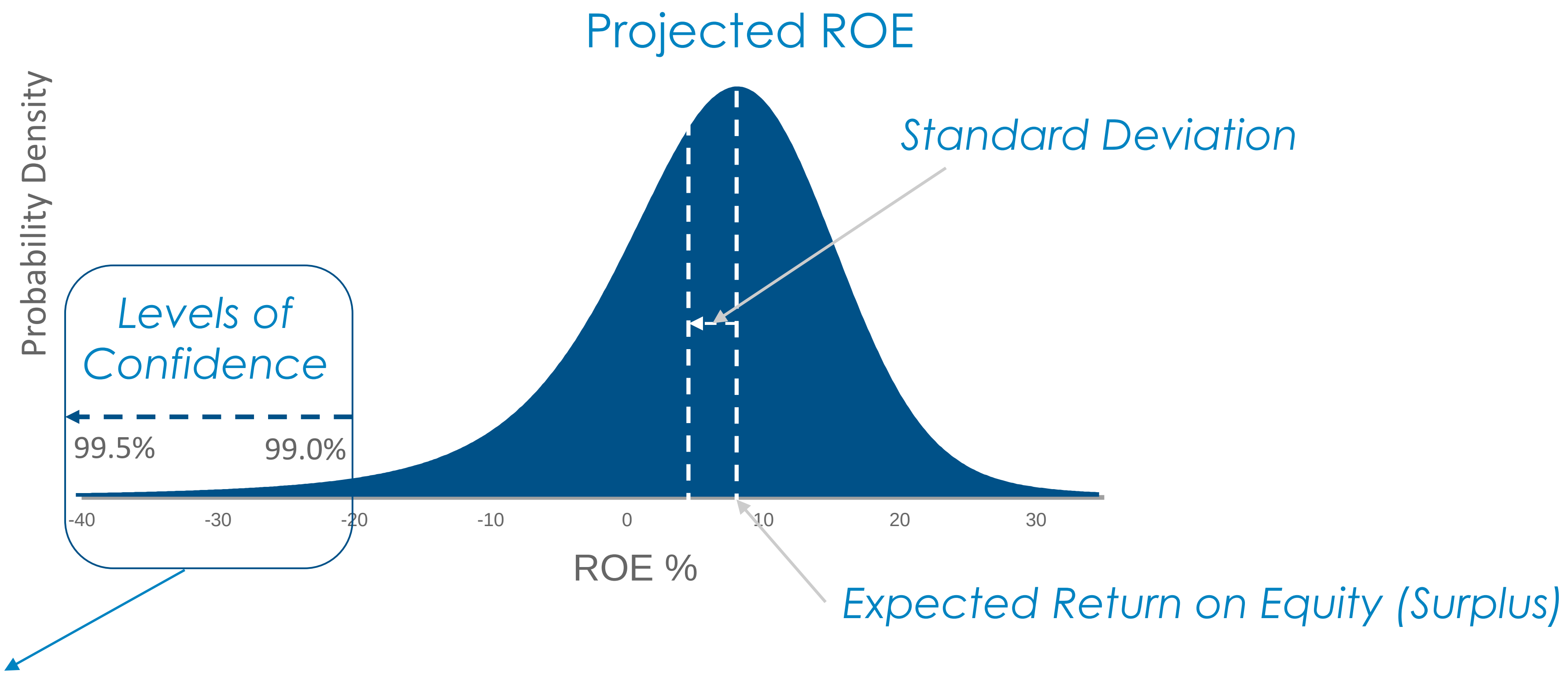
Sources: S&P Capital IQ Pro, NEAM

INVESTMENT RISK BUDGETING



Source: NEAM

QUICK REMINDER OF (TAIL) VALUE-AT-RISK



Extreme Downside Risk Measures

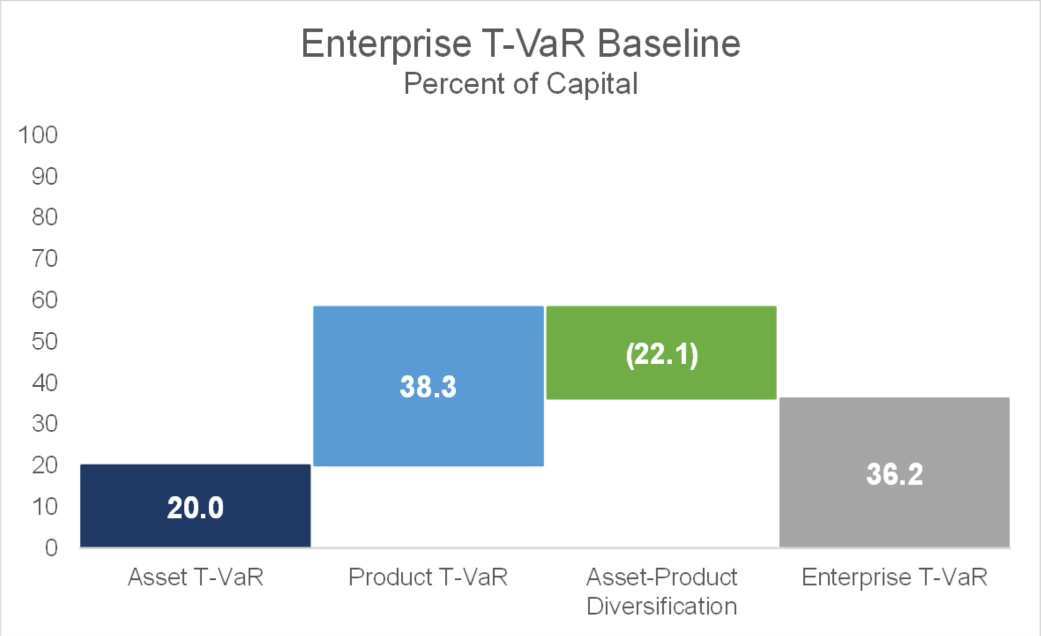
- Value at Risk (VAR) – maximum loss not to be exceeded with a certain confidence at a given time horizon
- Tail Value at Risk (T-VAR) – expected loss beyond the VaR level, or expected mean in the tail (also known as conditional VAR or conditional tail expectation)

ENTERPRISE RISK AND RETURN PROFILE

$$\text{Return on Equity} = \frac{\text{Earnings}}{\text{Equity}} = \left(\text{Premium Leverage} \times \text{U / W Margin}\right) + \left(\text{Investment Leverage} \times \text{Investment Returns}\right)$$

CONSIDERATIONS

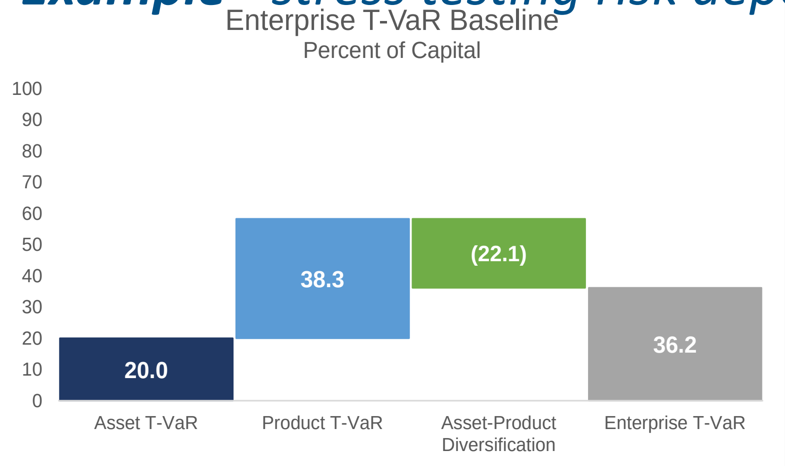
- What drives our risk tolerance – e.g., earnings, capital, financial strength rating, BCAR/RBC ratio?
- What is our ideal risk budget – e.g., how many ‘risk chips’ to allocate on investments vs insurance?

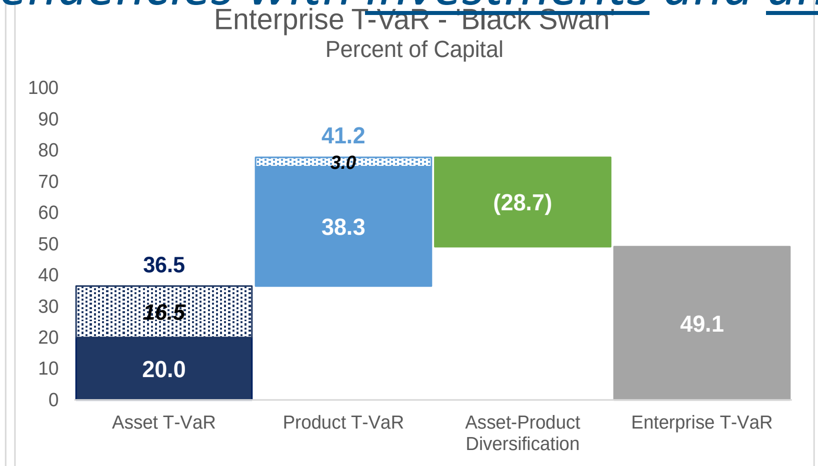


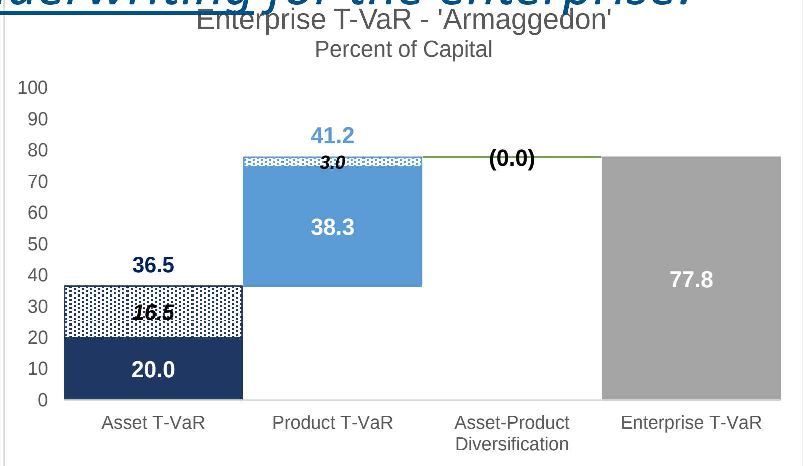
STRESS TESTING

- Assess the consequences of being wrong!
- Stress testing assumptions to validate the integrity of enterprise risk models and their estimates.

***Example** - stress testing risk dependencies with investments and underwriting for the enterprise:*







Baseline Assumption:

- *What impact does assumed diversification in our enterprise risk estimation?*

'Black Swan':

- *Begin to unwind assumed correlation benefits inherent to the enterprise.*
- *What is the impact to our surplus, rating, etc.?*

'Armageddon':

- *All enterprise diversification benefits are removed.*
- *Can we survive as a going concern?*

Illustration

FINAL THOUGHTS

Know the Evolution of the Stress.

- Hibernation > Emerging state of the stress event.
- Manifestation > Length of time for the stress to mature.
- Duration > Length of the stress' adverse impact to the organization.
- Contagion > Stresses feeding into other stresses.
- Recuperation > Time / effort it takes to return the organization to a pre-stress state.

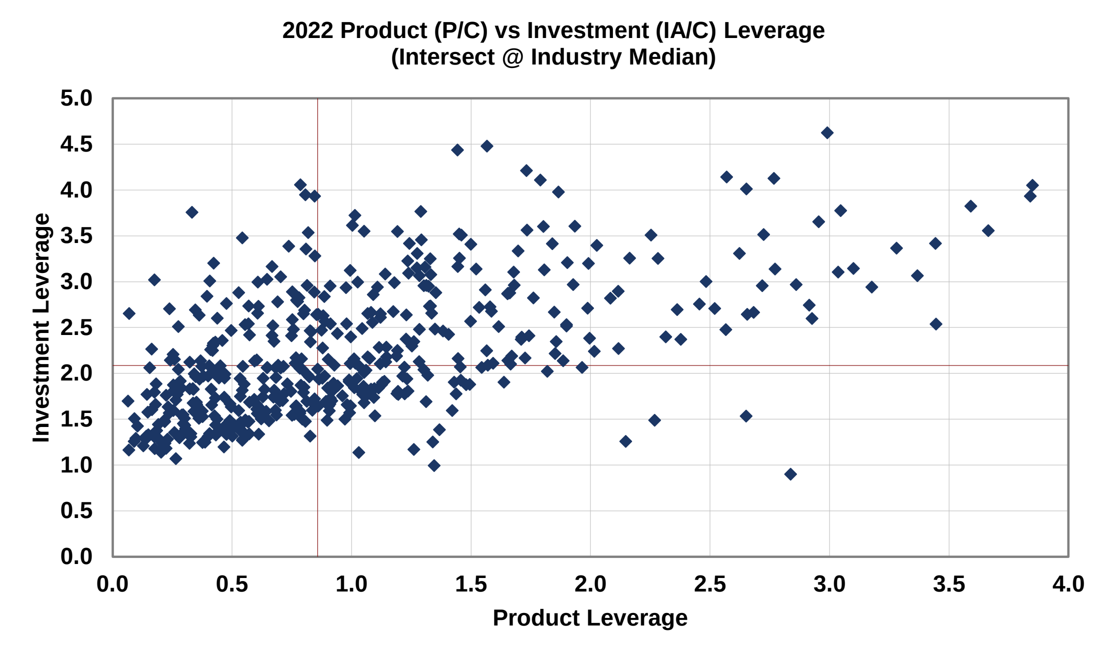
Risk Controls.

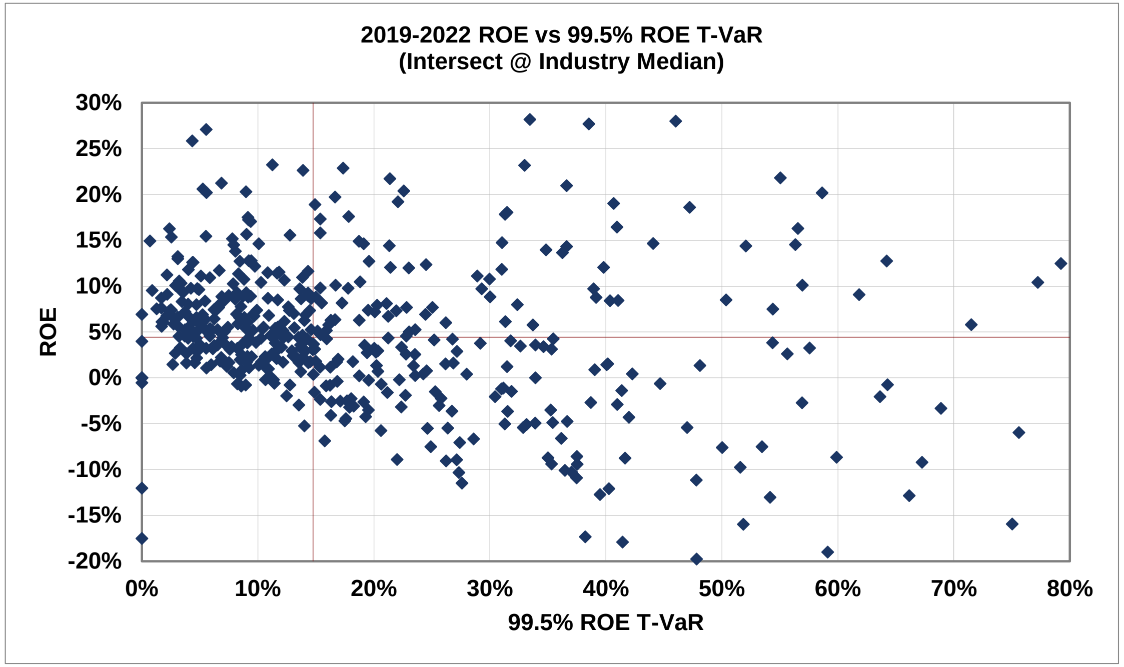
- Systems, people, tools, etc. to mitigate or eliminate the adverse impacts of stress events.

Risk Learning.

- Use intelligence gleaned from a stress test or event to improve future ERM.

DUPONT RETURN ON EQUITY (SURPLUS)





$$\text{Return on Equity} = \frac{\text{Earnings}}{\text{Equity}} = \left(\text{Product Leverage} \times \text{U / W Margin}\right) + \left(\text{Investment Leverage} \times \text{Investment Returns}\right)$$

Note: U.S P&C Industry Data Measured by 475-500 Consolidated U.S. P&C Insurers
Sources: S&P Capital IQ, NEAM

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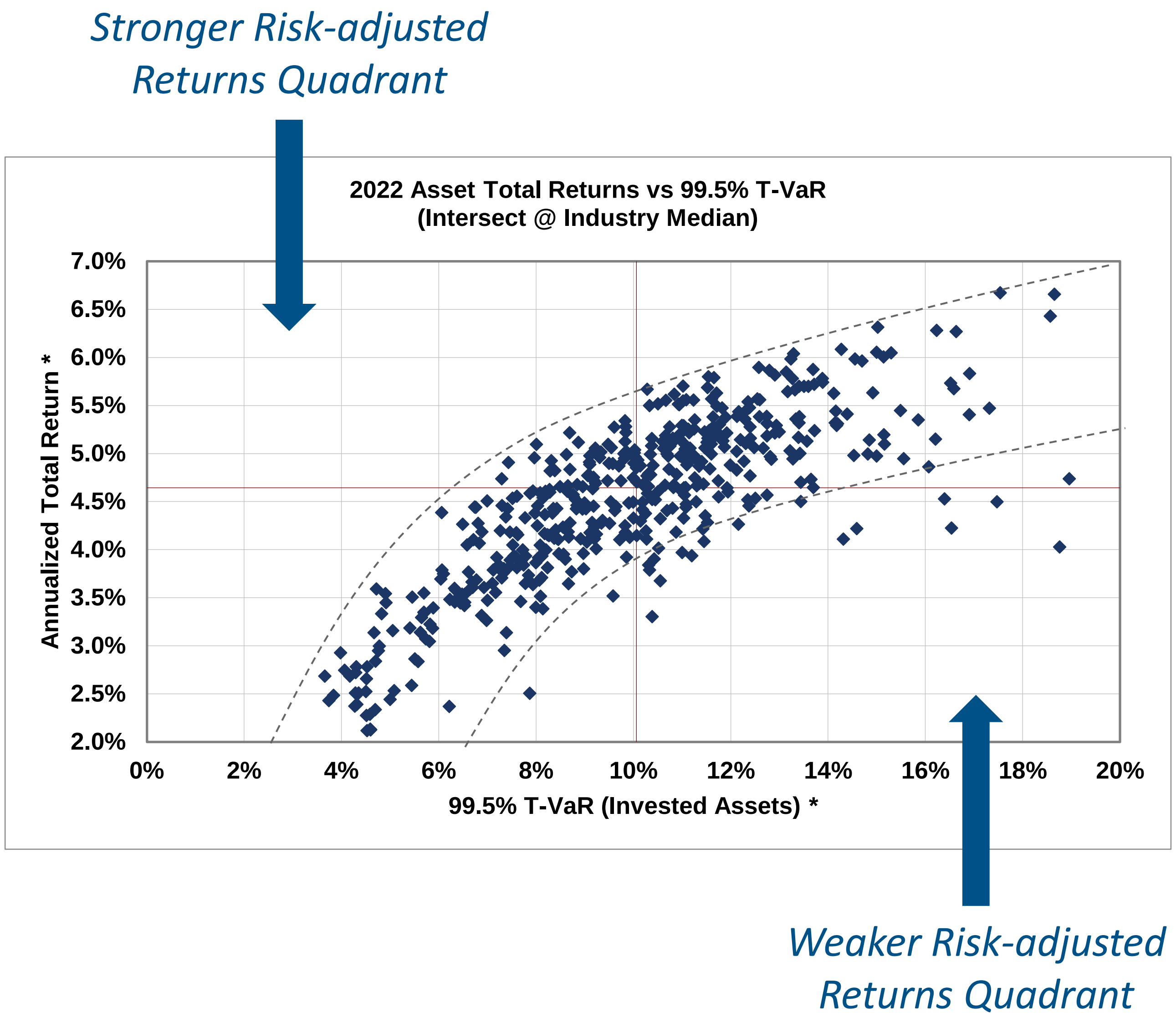
ASSET RETURNS AND ASSET T-VARS

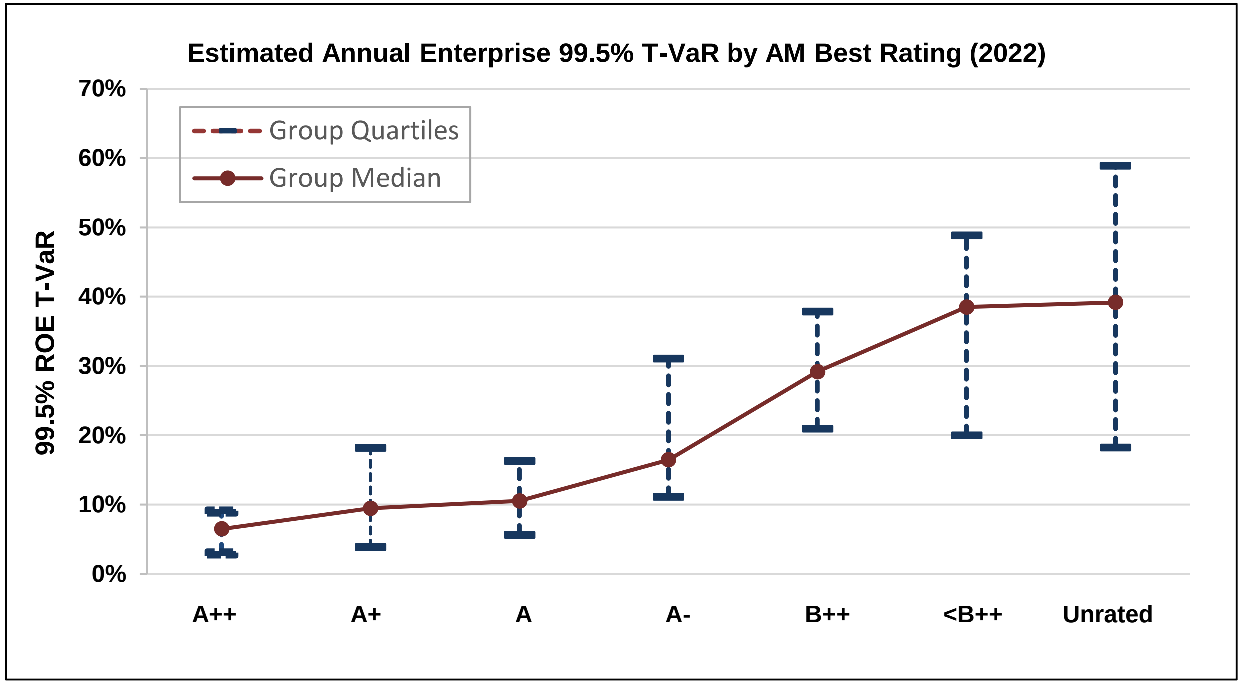
- U.S. P&C 2022 median returns and downside risk on invested assets:
  - ROA @ ~ 4.6%
  - ROA T-VaR @ ~10.1%
  - Return-to-Risk @ ~0.46
- Understand where you firm is relative to your peers or the broader industry.



Note: U.S P&C Industry Data Measured by 475-500 Consolidated U.S. P&C Insurers
Sources: S&P Capital IQ, NEAM

T-VAR LEVELS AND AMBEST

- Median ROE T-VaR levels show an anecdotal (inverse) relationship with AM Best financial strength ratings.
- We saw similar findings in prior years leading up to 2022.
- How does your organization compare?



99.5% Annual DuPont ROE T-VaR (2022)

AMB Rating	Count	Mean	Median	StDev
A++	8	17.3%	6.5%	33.5%
A+	44	13.8%	9.5%	14.8%
A	190	12.5%	10.5%	8.7%
A-	127	22.6%	16.5%	17.8%
B++	19	32.8%	29.2%	16.4%
<B++	12	37.0%	38.5%	17.3%
Unrated	93	41.7%	39.2%	26.6%
Total	493	21.8%	14.8%	20.2%

Note: U.S P&C Industry Data Measured by 475-500 Consolidated U.S. P&C Insurers
Sources: S&P Capital IQ, NEAM

FINAL THOUGHTS

- Investment risk and return profiles changed in 2022 – lower asset balances, higher investment leverage, more bonds.
- Understand your risk tolerances and risk preferences – enterprise versus underwriting versus investments.
- Downside risk measures such as T-VaR can be used to evaluate enterprise risk in a holistic way.
- Stress and scenario testing can be integral to effective ERM.
- Financial strength ratings and downside risk measures show an inverse relationship, which may help with setting or confirming risk tolerances.