How Your Most Important Investment Decision Is Changing

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STRATEGIC ASSET ALLIANCE
THE INSURANCE INVESTMENT SPECIALIST

THE SET UP


TOLERANCE
APPROACH
PERIOD
PLANNING
COST
BONDS
COMMODITIES
BRINSON
TRADITIONAL
EXPLAINED
INCLUDED
GOVERNMENT
STUDIES
SERIES
ACTUAL
INDEX
LARGE-CAP
CLASSES
RETURN
ASSET
QUARTILE
FINANCIAL
FUND
EXPLAIN
BASED
DIFFERENT
REAL
CASH
MARKET
RETURNS
ONE
VERSUS
QUARTERLY
WHY
VALUE
STOCKS
DRIB
IMPORTANT
STRATEGIES
ALLOCATION
INVESTOR
EXPECTED
INVESTMENT
STOCK
EVEN
PENSION
FUNDS
FUTURE
ASSETS
SEE
STILL
VARIANCE
BALANCE
TYPES
STRATEGY
STUDY
ESTATE
STRATEGIC
PERFORMANCE
TIME
PORTFOLIO
DIVERSIFICATION
HOOD
TACTICAL
RISK
FRONTIER
SHARED

Basic Portfolio Risks

1. **Investment Risk**
   - MAY LOSE MONEY
   - Volatility of Assets (Short Term)

2. **Inflation Risk**
   - MAY LOSE PURCHASING POWER
   - Long Term Erosion of Value

Risk is the permanent loss of capital, never a number.

INVESTMENT INCOME:

Is a **cornerstone** to the risk transfer business model, and maximizing investment income can mean the difference between remaining competitive or losing members to aggressive pricing.

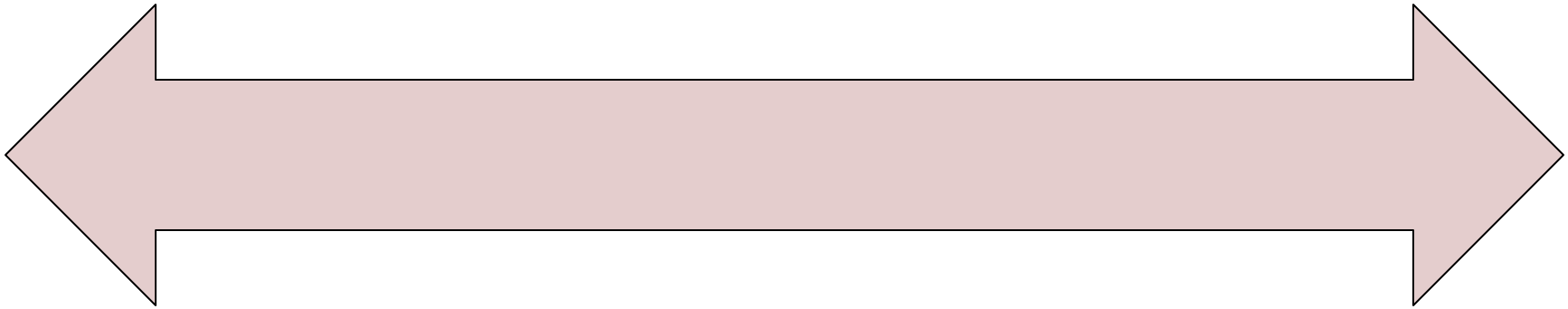
1) **How much can you expect to earn?**

- ***Relative to…***

2) **How much risk are you willing to prudently take?**

Investment Performance Objectives

Where do you fall on this objective continuum and why?



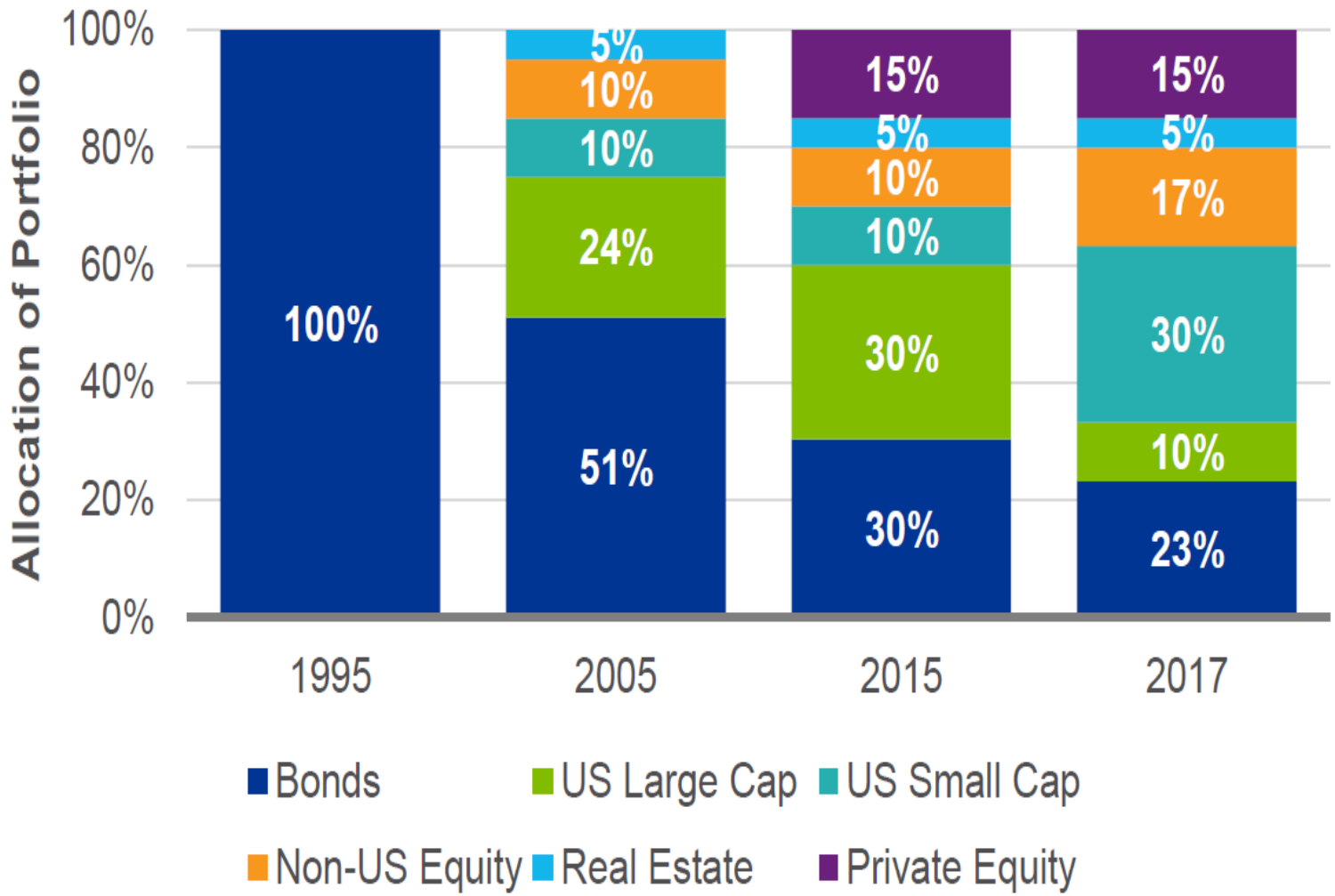
Book yield 'or' Income Only

Constrained total return

Total return

Most Risk Pools & Insurers

Allocation to Achieve - 7.5% Annualized Expected Return



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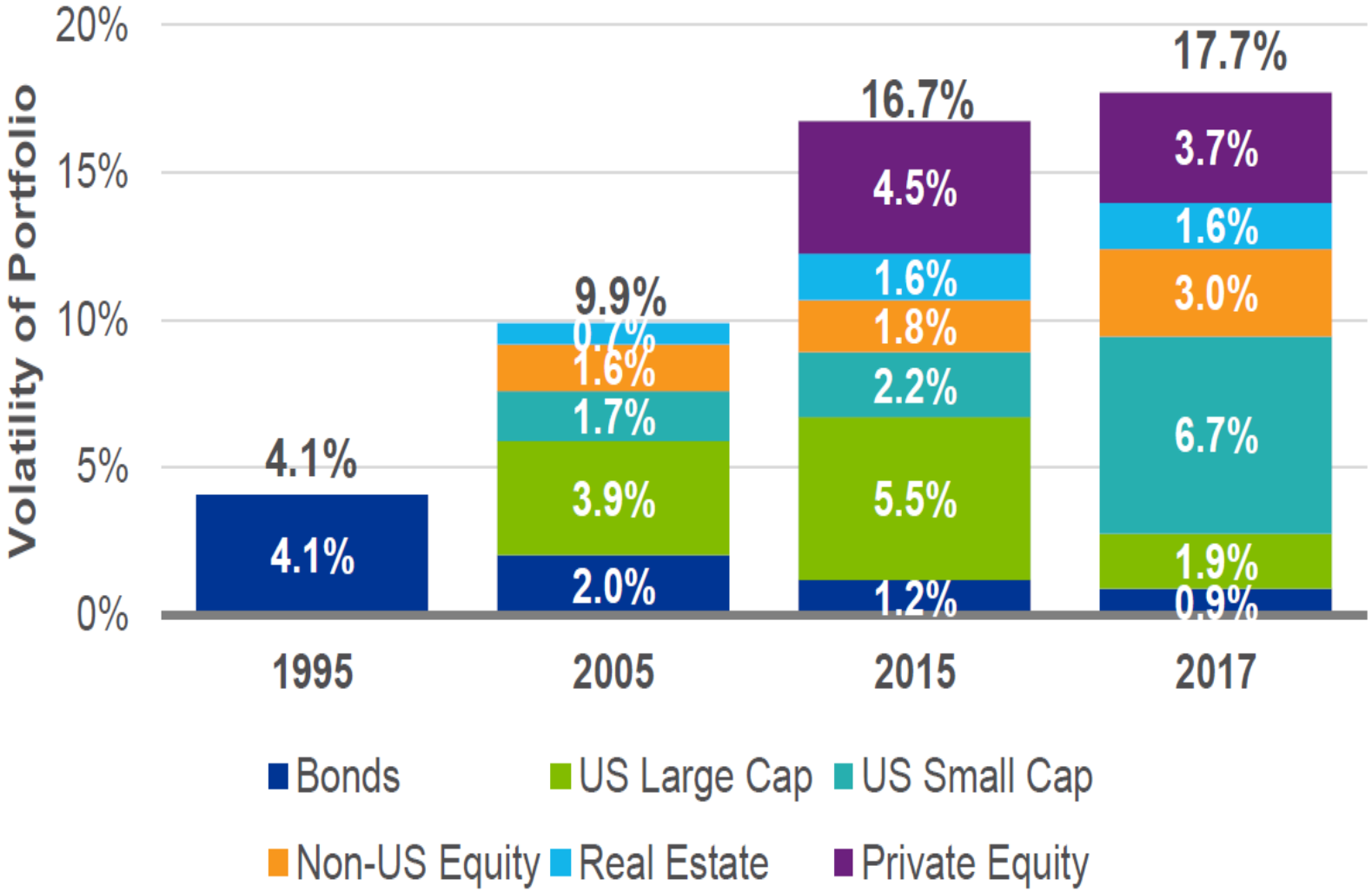
Source: BlackRock

Expected Volatility – 7.5% Annualized Expected Return



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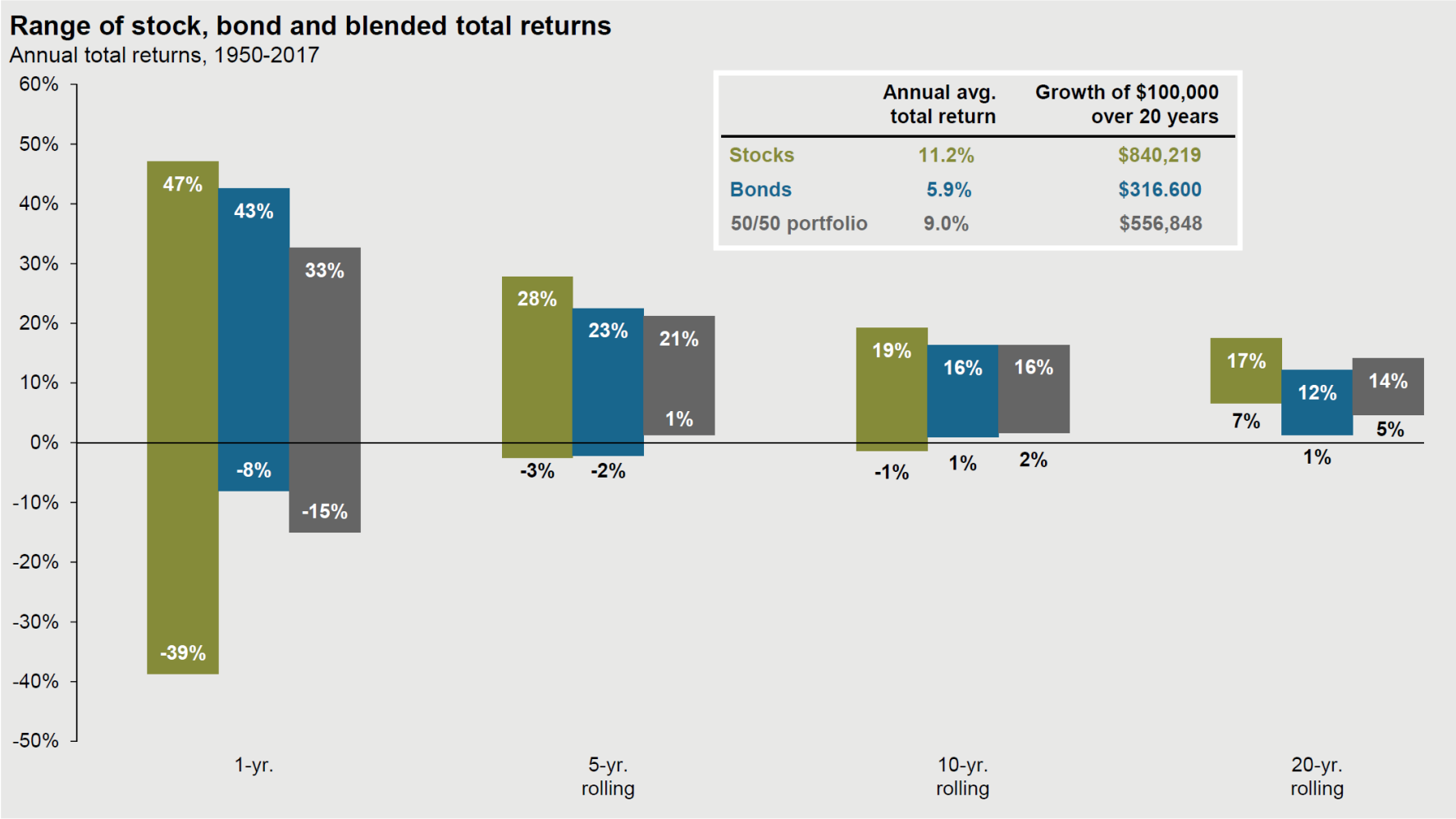
Source: BlackRock

VOLATILITY AND RISK

ARE NOT THE SAME THING…

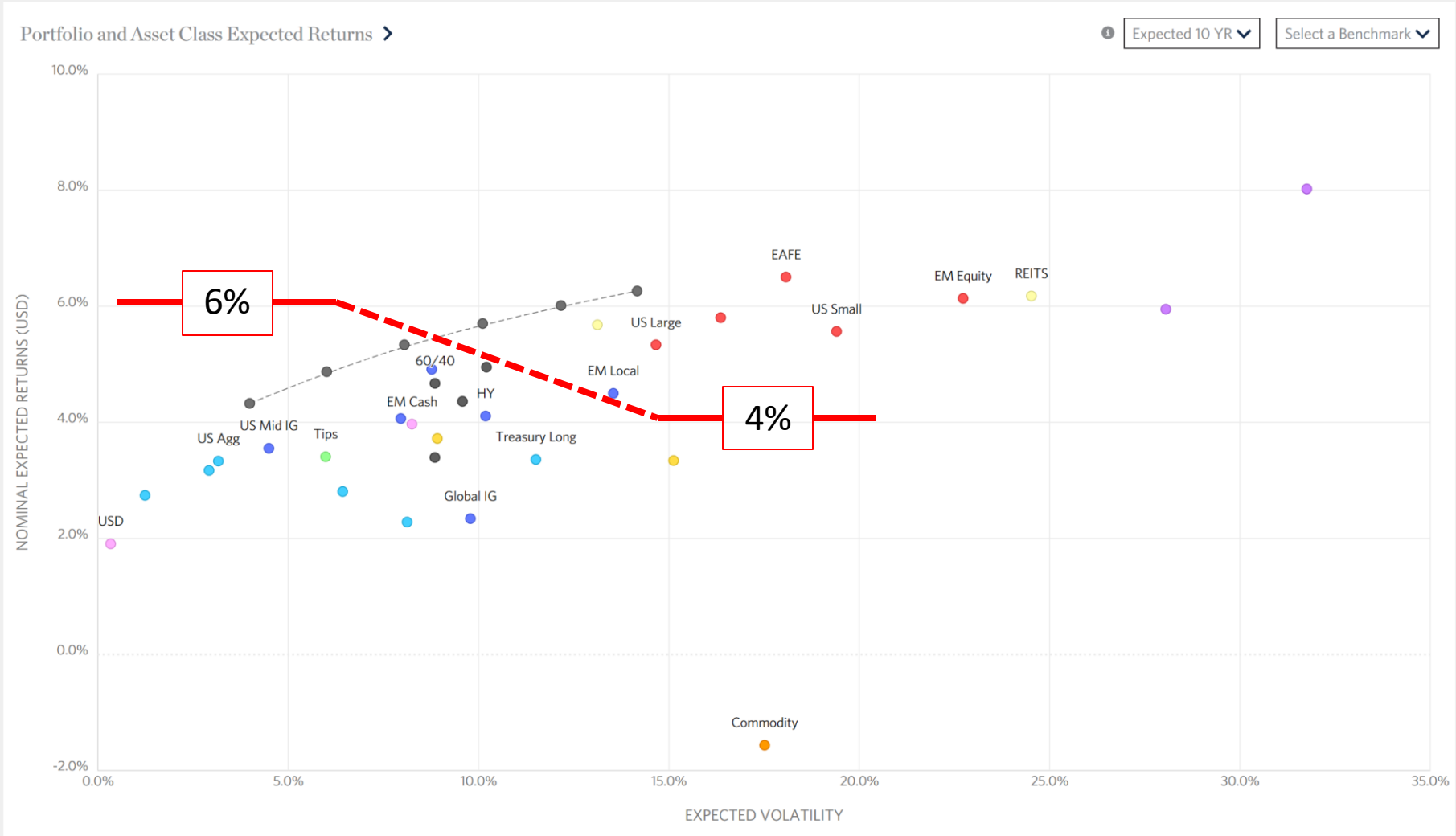
Time, diversification and the volatility of returns



	Annual avg. total return	Growth of $100,000 over 20 years
Stocks	11.2%	$840,219
Bonds	5.9%	$316.600
50/50 portfolio	9.0%	$556,848

Source: Barclays, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management.
Returns shown are based on calendar year returns from 1950 to 2017. Stocks represent the S&P 500 Shiller Composite and Bonds represent Strategas/Ibbotson for periods from 1950 to 2010 and Barclays Aggregate thereafter. Growth of $100,000 is based on annual average total returns from 1950 to 2017.

Today's Return Expectations - Tough to Make A Buck



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Source: Research Affiliates

THE HOOK - EVERYBODY HAS A MODEL…

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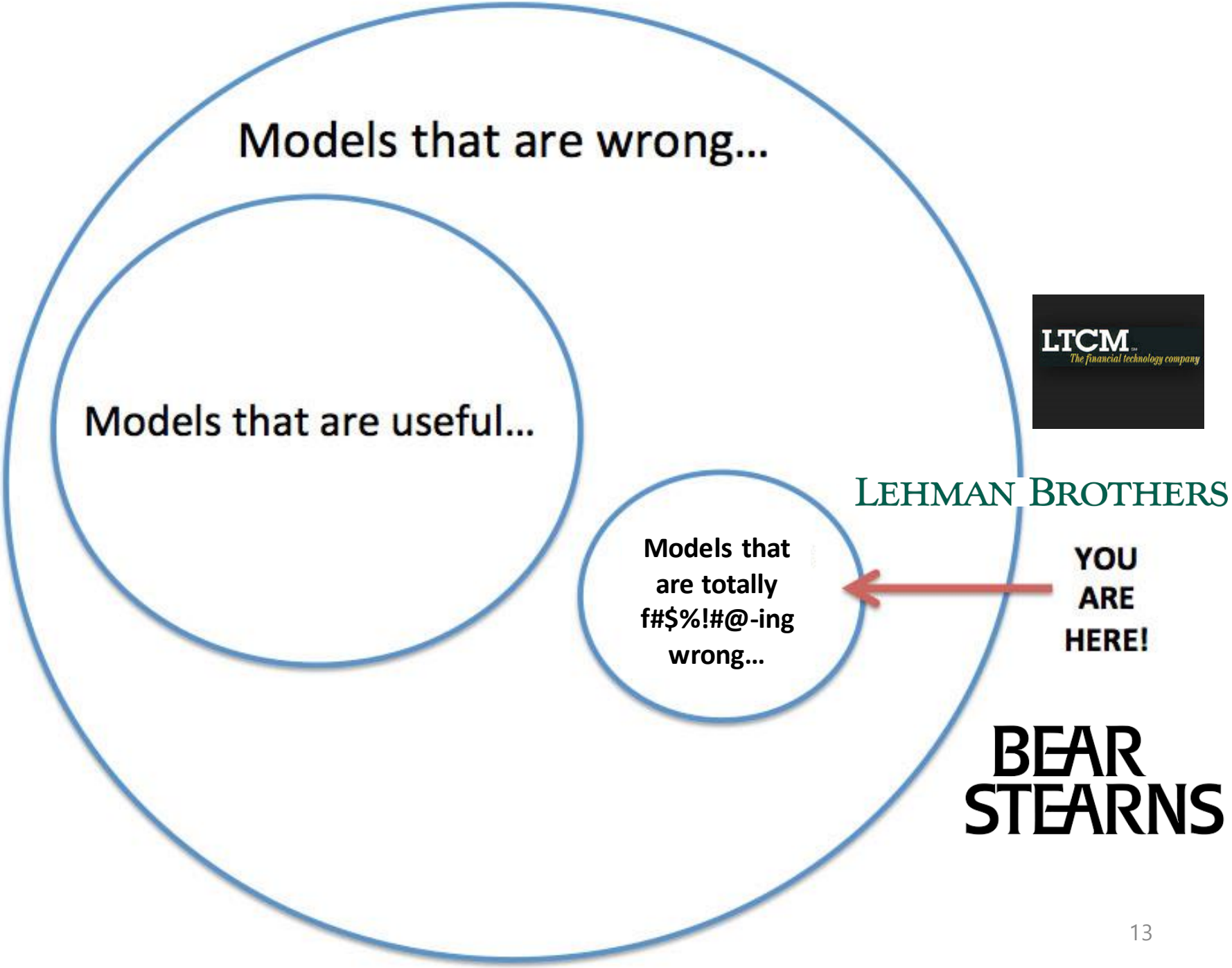
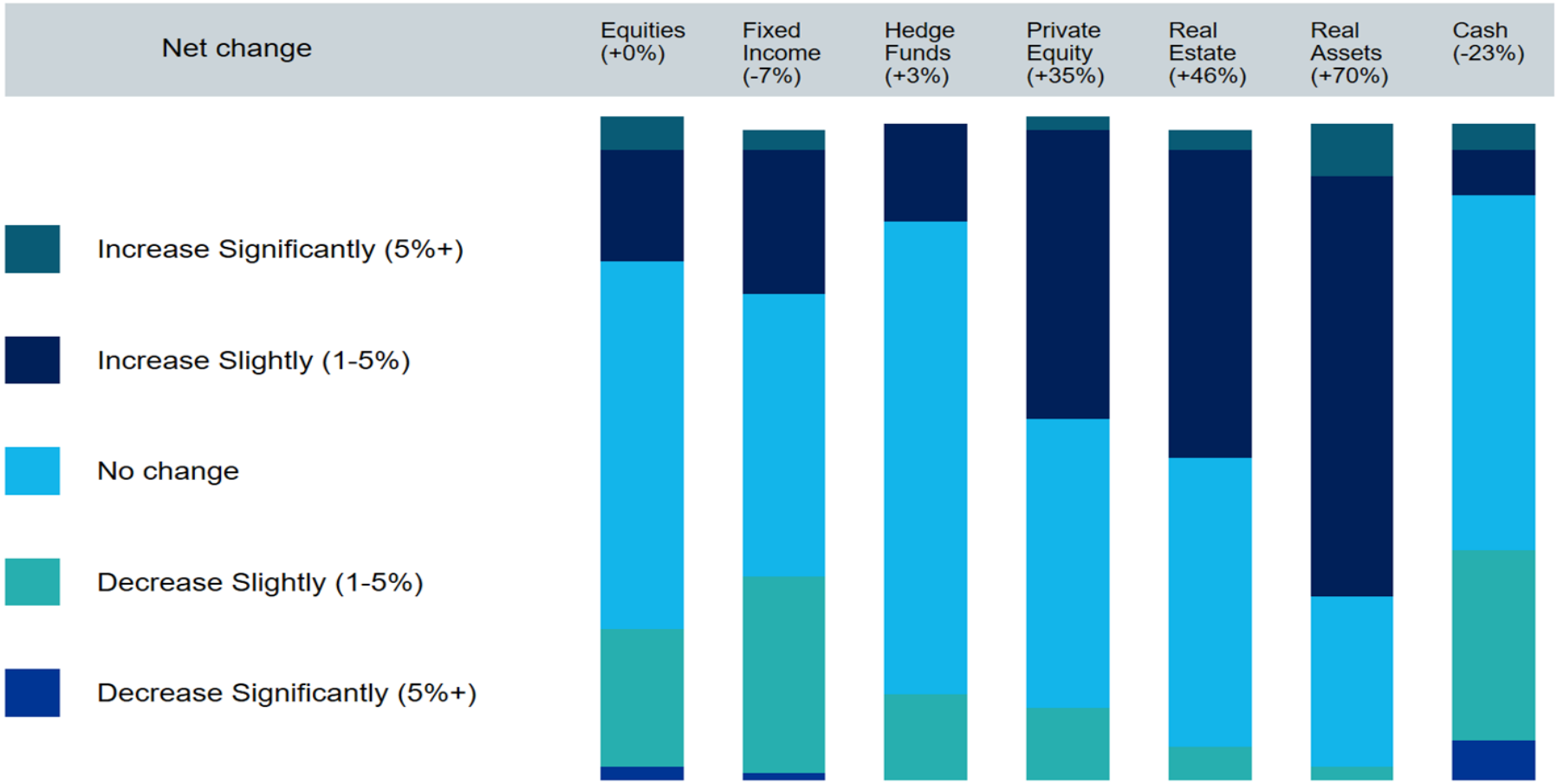

Models that are wrong...
Models that are useful...
Models that are totally f#$%!#@-ing wrong...
LTCM
The financial technology company
LEHMAN BROTHERS
YOU ARE HERE!
BEAR STEARNS

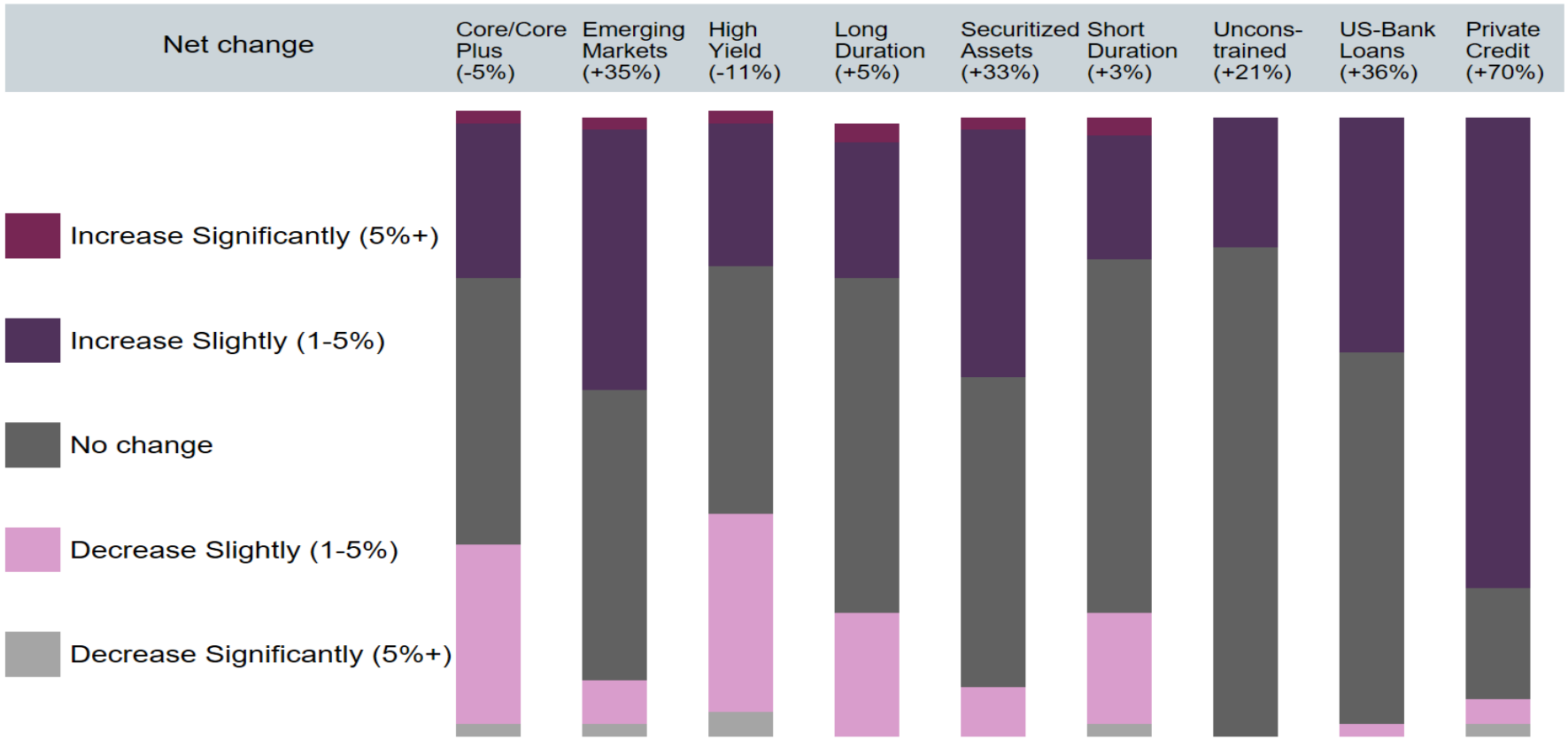
BlackRock - 2018 Global Institutional Rebalancing Survey



Global | US/Canada | EMEA | Continental Europe | Global insurance | Global corporate pension

BlackRock - 2018 Global Institutional Rebalancing Survey

Fixed income chart



Global | US/Canada | EMEA | Continental Europe | Global insurance | Global corporate pension

Strategic Asset Allocation

- **Explains 90%+ of investment of volatility and returns over time…**
- **Some Approaches…**
  - The Endowment Model
    - (Alternatives, Alternative, Alternatives…)
  - The Risk Parity Approach
  - Liability-Driven Investment
- **Basic Philosophies**
  - Traditional Diversification
  - Risk Budgeting
  - Goal Driven

Enterprise-Based Financial Modeling

- Sophisticated, analytical frameworks to reflect institutional knowledge and to merge and model underwriting, investment, and reserving uncertainty:
  - Enterprise Risk Modeling ("ERM")
  - Asset/Liability Modeling ("ALM")
  - Dynamic Financials Analysis ("DFA")

- **Stress Testing Is Key – Downside Risk Management**
  - The benefits of 2008/2009 and investment "worst case" scenarios;
  - Assume implausible (but realistic) scenarios and shock test the enterprise to evaluate the potential for permanent capital losses.

Financial Model Shortcomings & Mindfulness

1) Computational Irreducibility
2) Emergent Phenomena
3) Radical Uncertainty
4) Ergodicity
5) Heuristics

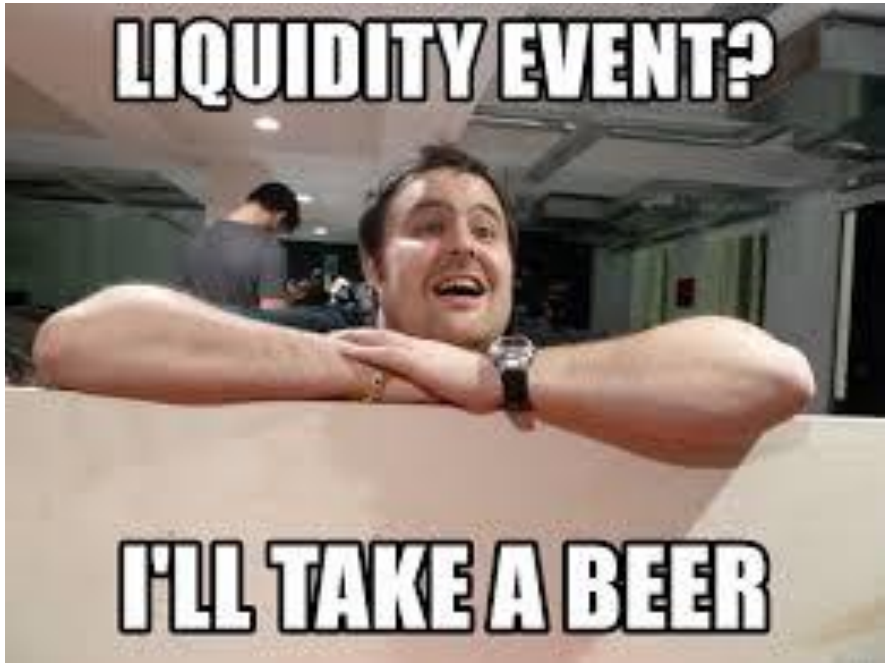
- *"The End of Theory" by Richard Bookstaber*

Computational Irreducibility

- No mathematical shortcuts; the system must run its course to see the outcome (i.e. financial markets, weather…)

Emergent Phenomena

- Individual rules work well generally and sensibly but lead to unexpected chaos at the systems level (i.e. asset price levels; liquidity events…)



Radical Uncertainty

- Outcomes or events that are unanticipated, that cannot be put into a probability distribution because they are outside our list of things that might occur.
- Self-referential models (based on human experience)
  - How we learn what we cannot know?

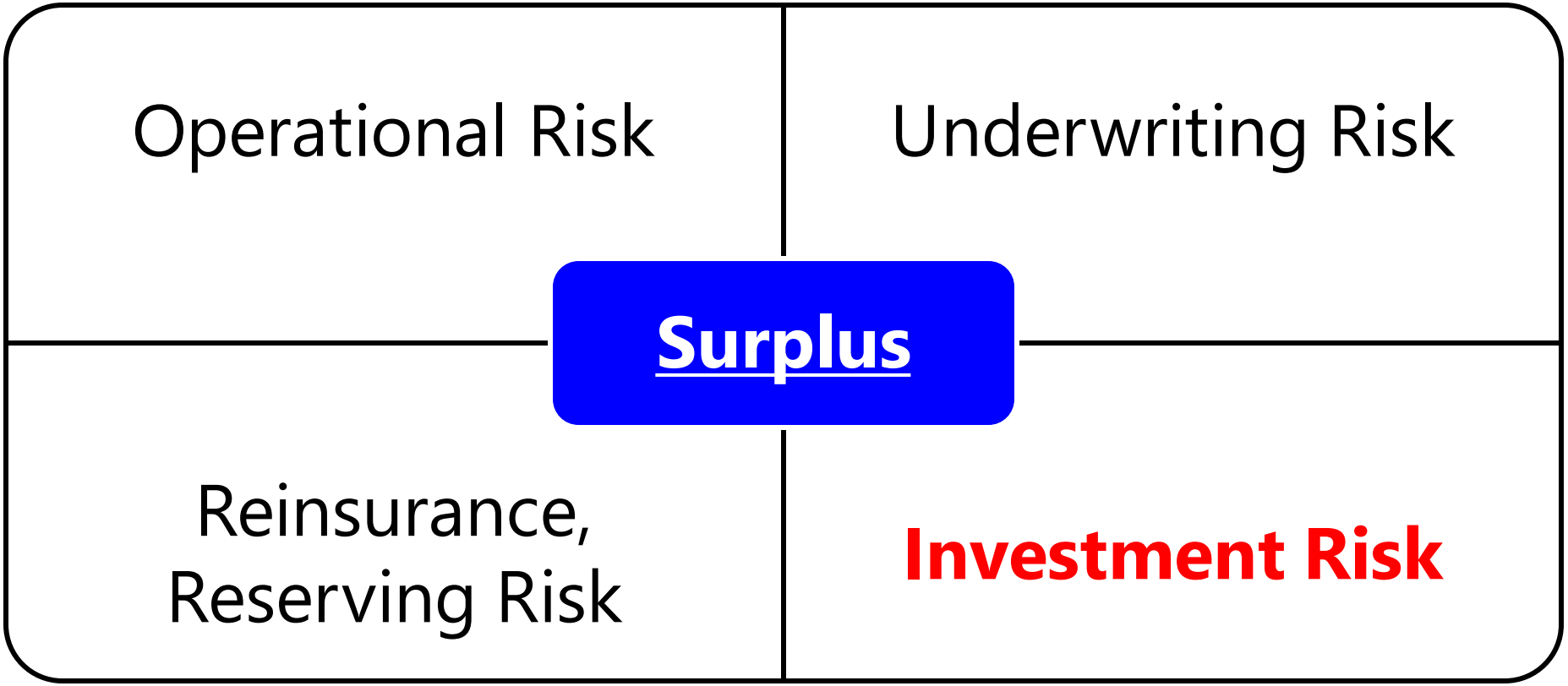
Ergodicity

- Economics assumes the world is ergodic.
  - Practically speaking, an ergodic process will look the same in terms of probability distribution a thousand years from now as it will today…

Heuristics

- Course, context-dependent rules rather than general, deductive solutions.
- Help not because the world is “simple” but a result of the world being “complex” and its risks unfathomable.
- What’s optimal in any given environment may not be optimal in the long-run…

Modeling Risk Is Everywhere…



MODELS:

"Essentially, all models are wrong, but some are useful."

"Remember that all models are wrong; the practical question is how wrong do they have to be to not be useful."

George E.P. Box

THE STING – KEY CONSIDERATIONS

Major Tangent - Smereck's Favorite Disney Villain

Forward-Looking Market Realities…

1) Asset are more correlated
2) Increased external shocks & today's instant communication
3) Equity risk dominates traditional asset allocation
4) Bond yield remain low globally
5) Expected returns of stock are lower
   - Accept "loss aversion" phenomenon (i.e. behavioral finance)
     - Studies suggest that the psychological pain investors feel from a loss is twice as strong as the joy they receive from a similar size gain; so how to find "negative correlation"

Some Key Questions – Asset Allocation

1) How are the expected risk/return/correlations estimated for asset classes and over what period of time?
   - What's unique about your organizations methodology?
2) What type of return probability distribution(s) are utilized for each asset class?
   - How does your model sample the distribution during simulation?
3) What's the current worst case scenario contemplated by the model?
   - For example 2008/2009, Dot-Com, etc.
   - And translate to VaR and TVaR results
4) What goal is the model trying to achieve?
   - Traditional MPT, Results-Driven, etc.
5) Is the asset model correlated to the underwriting/reserving model?
   - If yes, how so and to what degree?

- ***All responses must be in plain English and targeted to the appropriate audience – The Board.***