2015 Annual Meeting

Is It Worth It?
Quantifying the Value of Risk-Managed Investing

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November 17, 2015

Today's Discussion

- **Gauging the economic value of risk management — in an investment context**
- **The "Portfolio Problem"**
  - Unique in the last 30 years
  - Most critical planning issue over the next several decades?
  - Diversification is not enough
- **Risk-Managed Investing (RMI)**
  - Potential solution?
  - Quantifying the value/cost of RMI
- **Implications for portfolio construction**

The Portfolio Problem

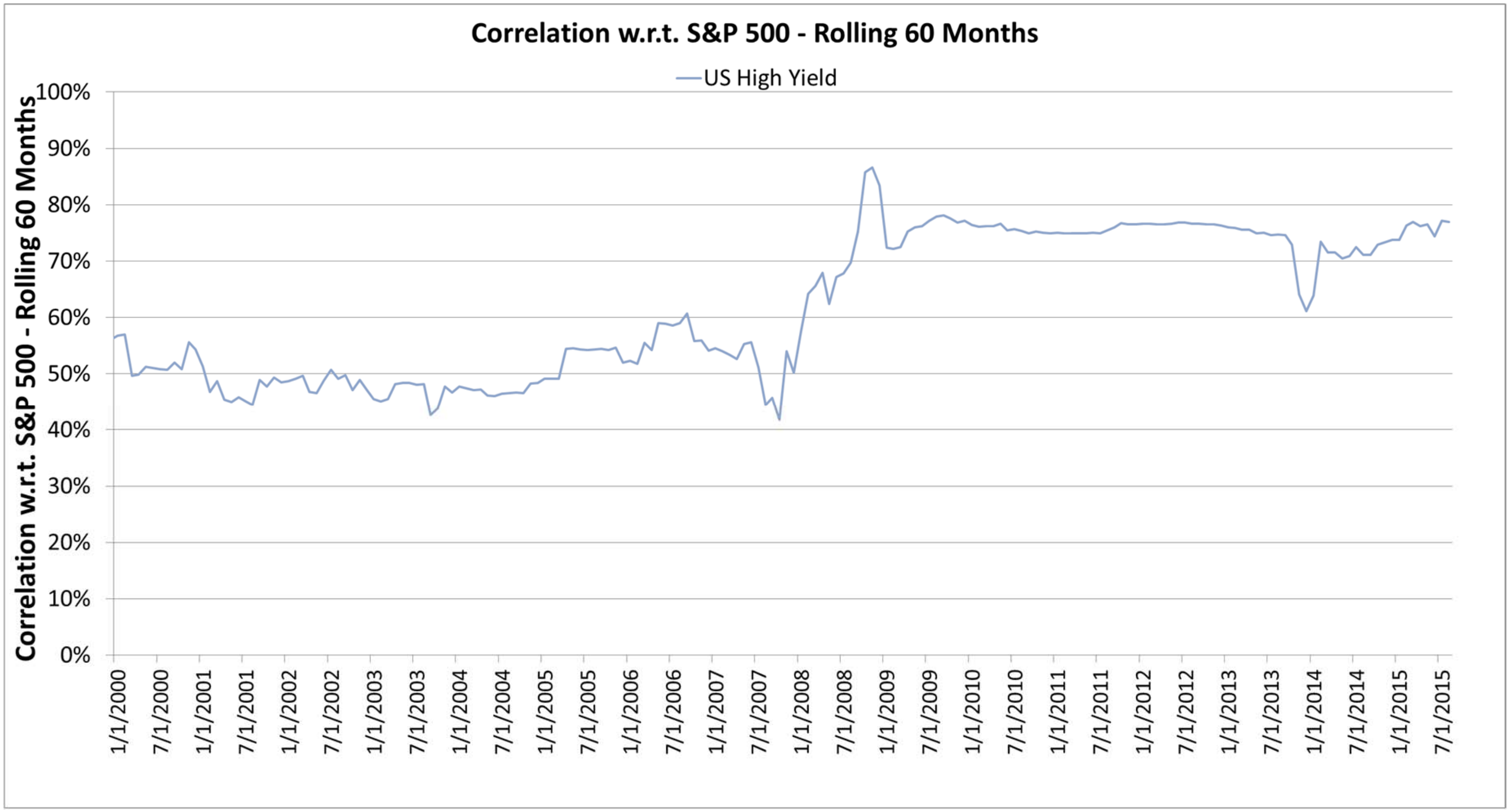
- **Investors need equities**
  - To guard against inflation
  - To reach their financial goals
- **Equities tend to be volatile, and subject to significant drawdowns**
- **Traditional approaches to managing equity risk will no longer work as well as they have**
  - I.e., diversification into non-equity asset classes
  - These classes are, and will remain, challenged

Fixed Income

- **Coming off 30-year bull market as interest rates fell**
- **Mathematically impossible to repeat that performance over next decade+**
- **Efforts to boost yield are problematic**
  - Increase risk beyond mandate
  - Compromise diversification benefit

Fixed Income

Reaching for yield compromises diversification



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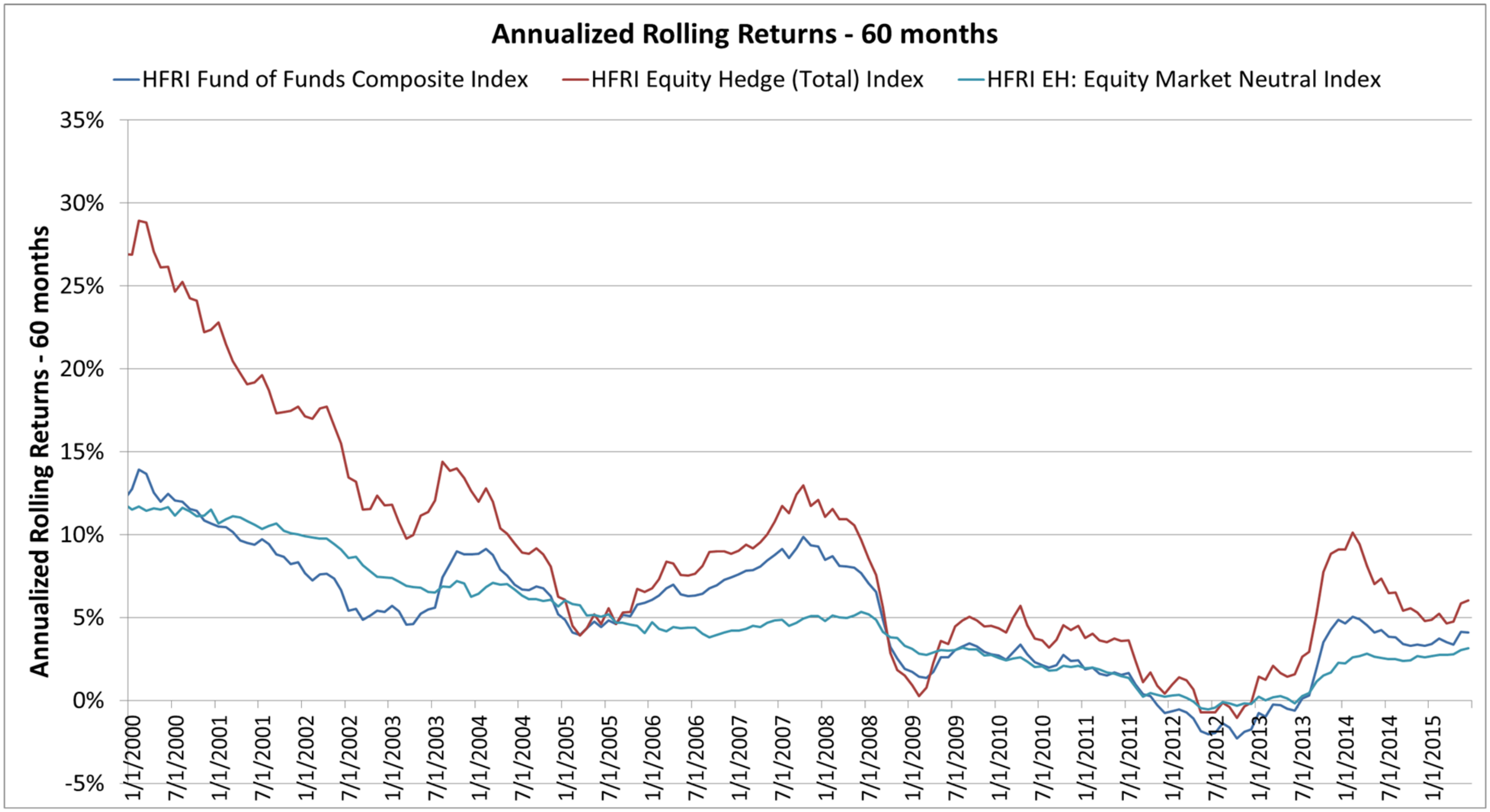
Liquid Alternatives

Performance trending toward mediocrity



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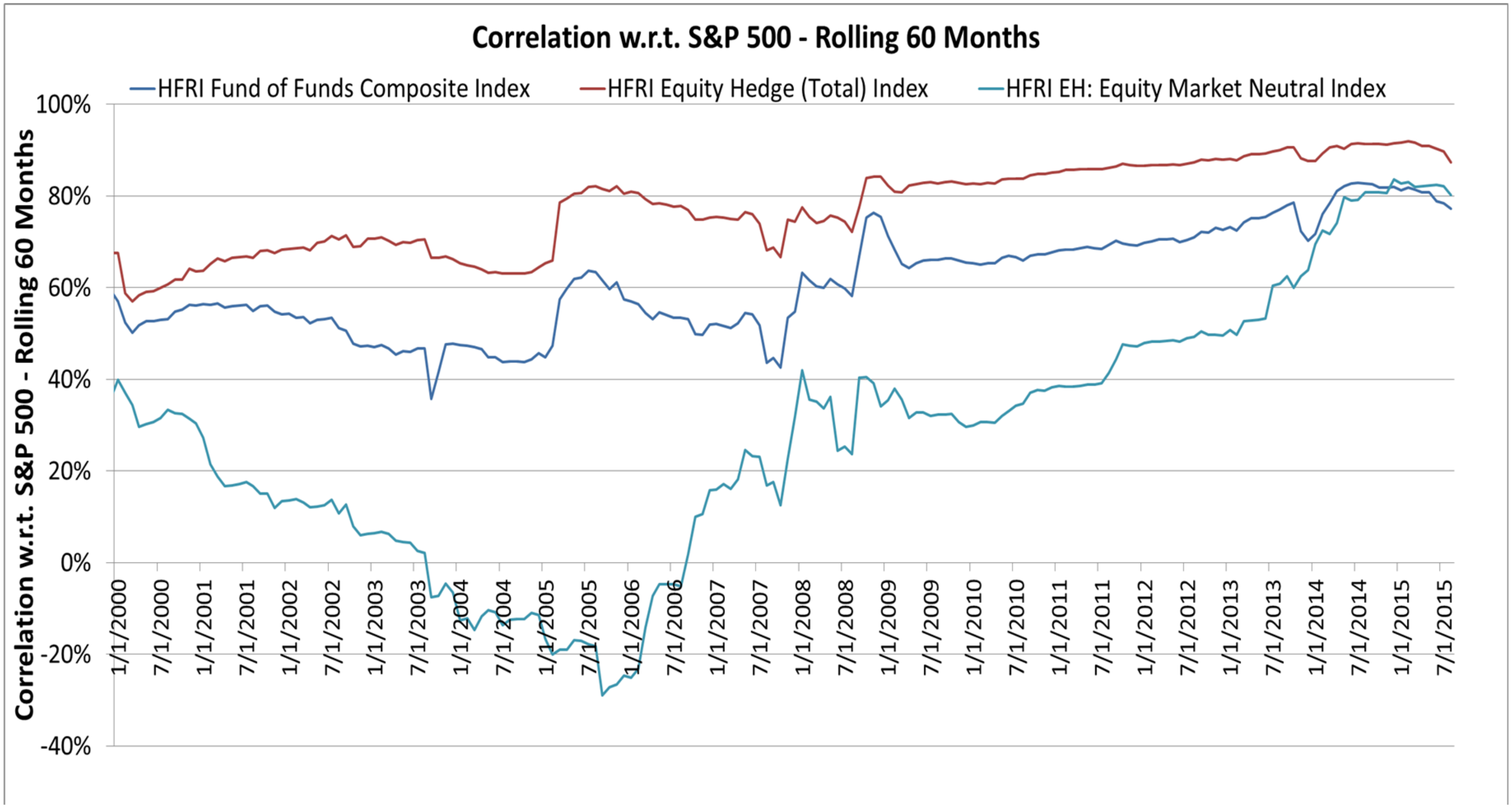
Liquid Alternatives

Increasing correlation with equities



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RISK-MANAGED INVESTING

Liquid Alternatives

- **Performance trending toward mediocrity**
- **Increasing correlation with equities**
- **Client fatigue with underperformance of hard-to-explain investments**

Annuities

- **Variable annuities**
  - Complex, expensive
  - Low IRR
- **Fixed annuities**
  - May be appropriate for some older clients
    - With regular and reliably known future expenses
    - With low legacy needs
  - Essentially bonds with maturity determined at death
  - At historically high prices in today's low-interest environment

Diversification Itself Is Unreliable

- **And always has been**
- **Diversification benefits are not guaranteed**
- **Diversification “fails” when you most need it to succeed**
- **In times of stress, correlations “go to one”**
- **Diversification/asset allocation/rebalancing**
  - Still a prudent portfolio construction approach
  - Not designed to manage extreme market risk and contagion
  - And now, its component asset classes are losing appeal

So, What To Do?

?

A Potential Solution

- **Embed downside risk management directly within the equity investment (RMI)**
- **Rationale**
  - Satisfies the portfolio’s essential need for equities
  - Addresses the risk at its source
  - Diminishes the reliance on diversifying asset classes
  - Does not disrupt the tenets of asset allocation

Viable RMI Solutions in the Market

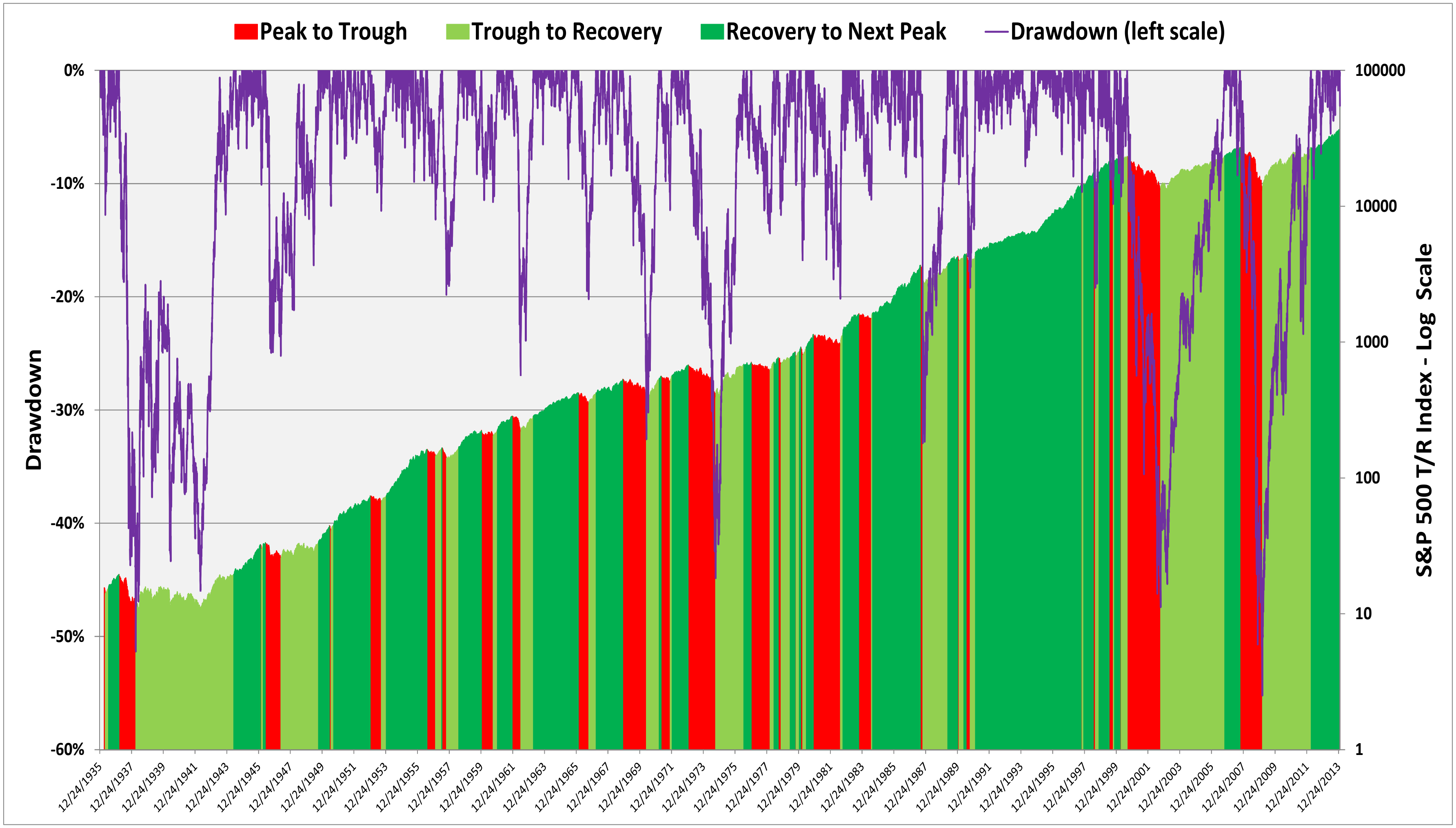
- "Low vol" equity strategies
- Tactical sector/region rotation strategies
- Hedged equity strategies
- Combinations

- The key is the downside protection potential

Evaluating the RMI Solutions

- **Three relevant metrics**
  - *At what point* is downside protection provided? (How deep a drawdown does it respond to?) — call this metric D
  - *To what degree* is protection provided? (What percentage of damage is mitigated?) — call this metric p
  - *How much* does it cost? (What is the performance drag when protection isn't needed?) — call this metric C
- **The economic value of protection is a function of the first two metrics, i.e., EV = f(D,p)**
- **Cost is "tolerable" if $C < f(D,p)$; or $C_T(D,p) = f(D,p)$**
- **Can we derive the critical function C_T?**

Some Market History (D = -10%)



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Some Market History — Highlights

- **Average compound annual return (GMR): +11%**
- **Define "episodes" as non-overlapping periods of drawdown plus subsequent bull market**
- **Take D = -10%, for example**
  - 29 episodes in 78 years (Dec 1935 – Dec 2013)
  - Average frequency: once every 2.7 years (32 months)
- **Representative episode**
  - Drawdown: -21%
  - Duration of drawdown: 8 months
  - Subsequent bull market cumulative return: +68%
  - Duration of subsequent bull market: 24 months
  - Representativeness check: $((1-0.21)(1+0.68))^{(12/(8+24))} \approx 1.11$

A Simple Empirical EV = C_T(D,p) Model

- Apply RMI strategy to the typical market episode
- For our D = -10% example, assume p = 50%
- The -21% typical drawdown becomes -15.5%
- The subsequent bull market cumulative return needs to be only +57% instead of +68%
- Annualized, it needs to be 24% instead of 28%
- The difference is 410 basis points
  - This is our empirically-derived EV = C_T(D,p)
  - Thus, this is the “tolerable cost” of this RMI strategy

Generalizing the Results

	tolerable cost** (in bps)		
RMI downside impact*	-5% drawdown threshold	-10% drawdown threshold	-15% drawdown threshold
25%	395	210	145
50%	770	410	285
75%	1130	600	415

* portion of excess decline beyond threshold (-5%, -10%, or -15%) mitigated by RMI strategy,net of the cost of the strategy
** in terms of annual performance drag in bull markets

These estimates are conservative

- Ignores other quantitative benefits
- Ignores qualitative benefits

Why Is
Downside Protection So Powerful?

negative return	necessary offsetting positive return
-10%	+11%
-20%	+25%
-30%	+43%
-40%	+67%
-50%	+100%

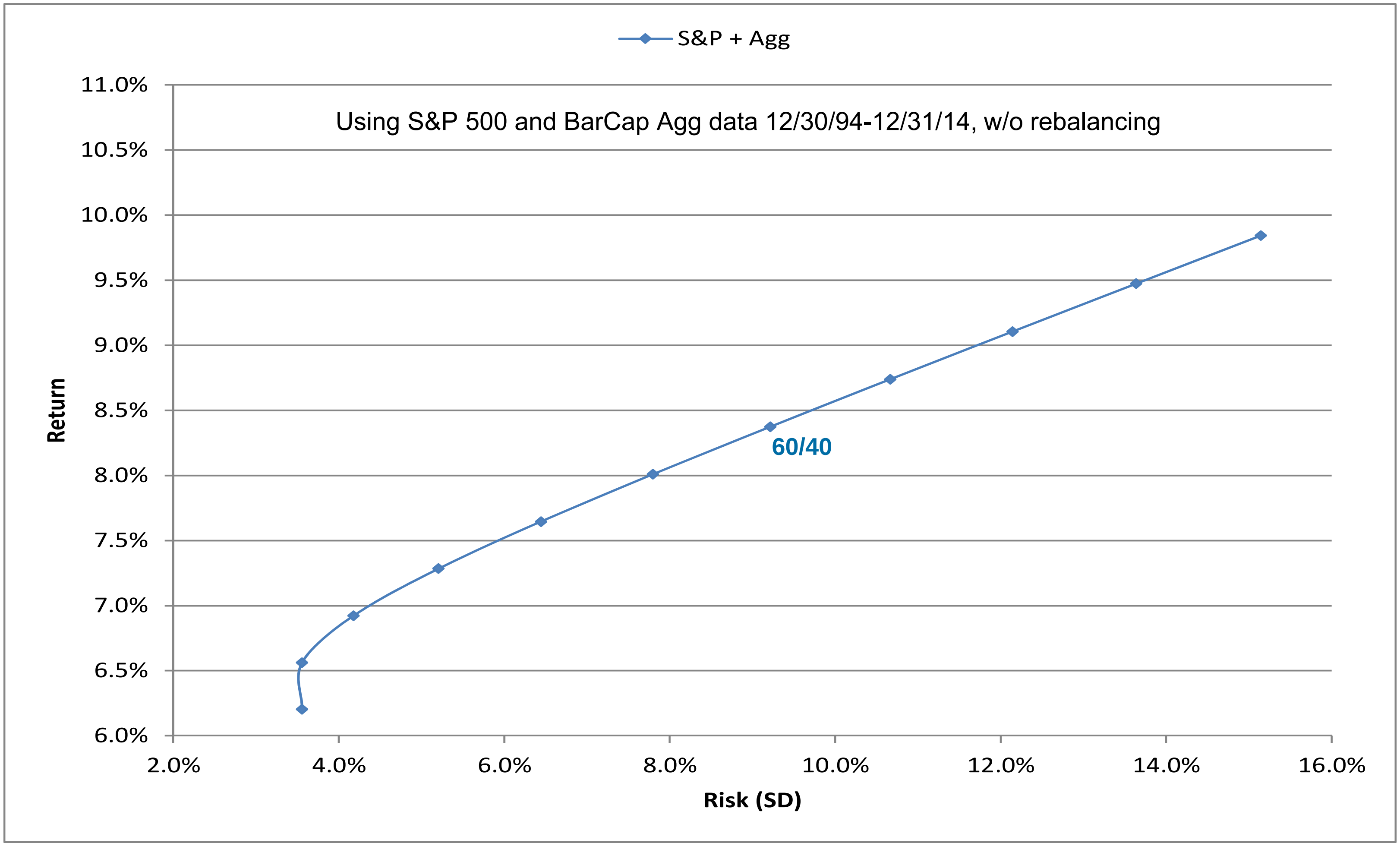
Avoiding a decline is the economic equivalent of capturing a gain of greater magnitude

A Potential Solution — Revisited

- **Embed downside risk management directly within the equity investment (RMI)**
  - Satisfies the portfolio's essential need for equities
  - Addresses the risk at its source
  - Diminishes the reliance on diversifying asset classes
  - Does not disrupt the tenets of asset allocation
- **Can raise the efficient frontier**
- **Can allow "re-risking" of portfolio**

Even at breakeven "tolerable cost"

Pre-RMI Efficient Frontier



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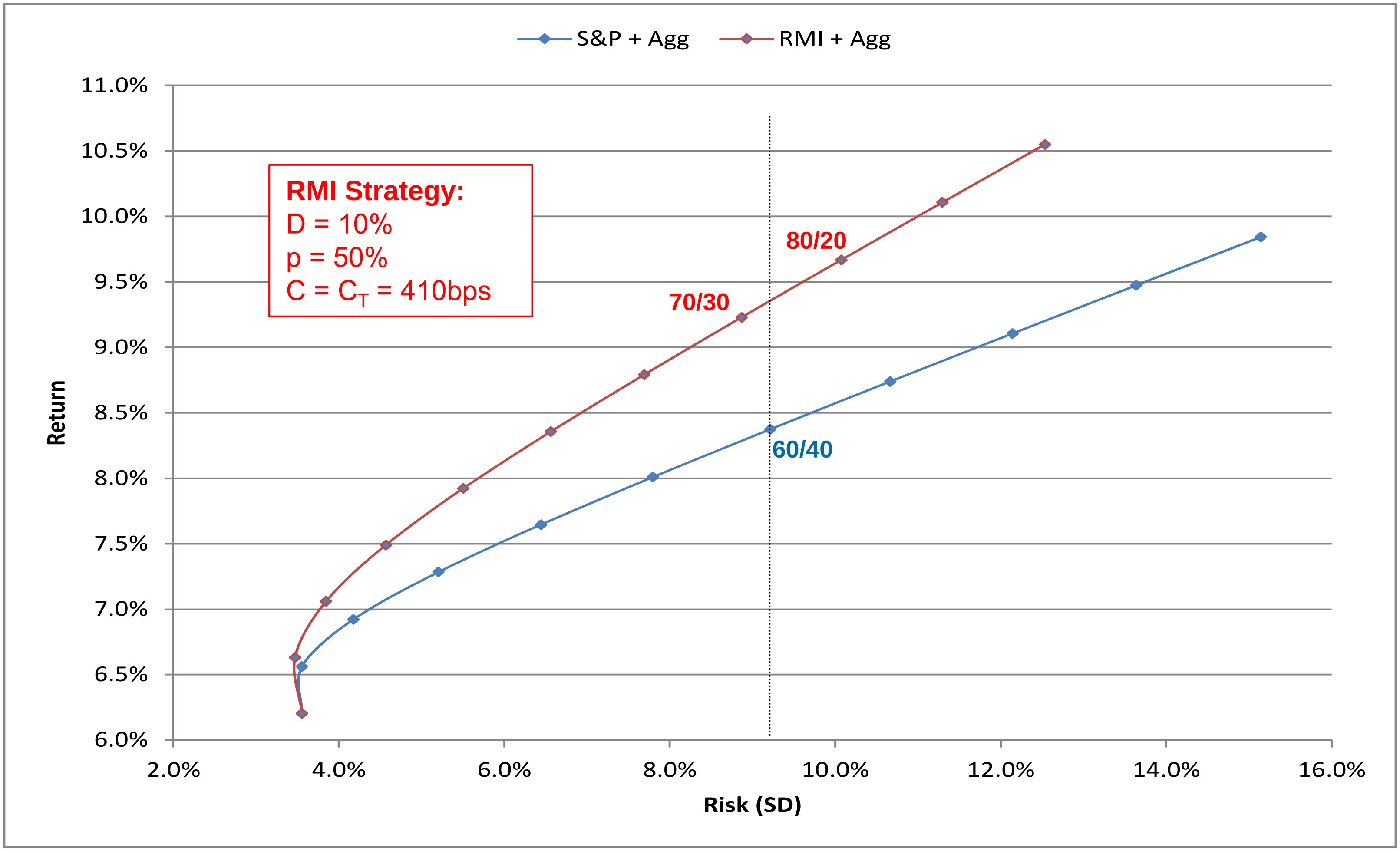
Could 75/25 Be the New 60/40?



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Wrap-up

- **Portfolio Problem**
  - Equities essential, but have significant downside risk
  - Non-equity asset classes becoming problematic
  - Diversification can only do so much
- **Potential Solution — RMI**
  - Embed downside RM directly in equity investment
  - Address portfolio problem at its source
- **Numerous RMI strategies available**

Wrap-up (cont'd)

- **Economic value of any RMI strategy can be assessed empirically**
- **Economic value, and thus tolerable cost, of RMI can be substantial**
- **Even at "breakeven" cost, RMI can:**
  - Raise the efficient frontier at portfolio level
  - Allow "re-risking" of portfolio
- **75/25 could be the new 60/40**

For More Information

- **Whitepaper:** ***Is It Worth It? Quantifying the Value of Risk-Managed Investing***
- **www.GiraldaAdvisors.com**
- **info@GiraldaAdvisors.com**
- **212-235-6801**

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