



MANAGING INVESTMENT RISK

The Key to Investment Outperformance

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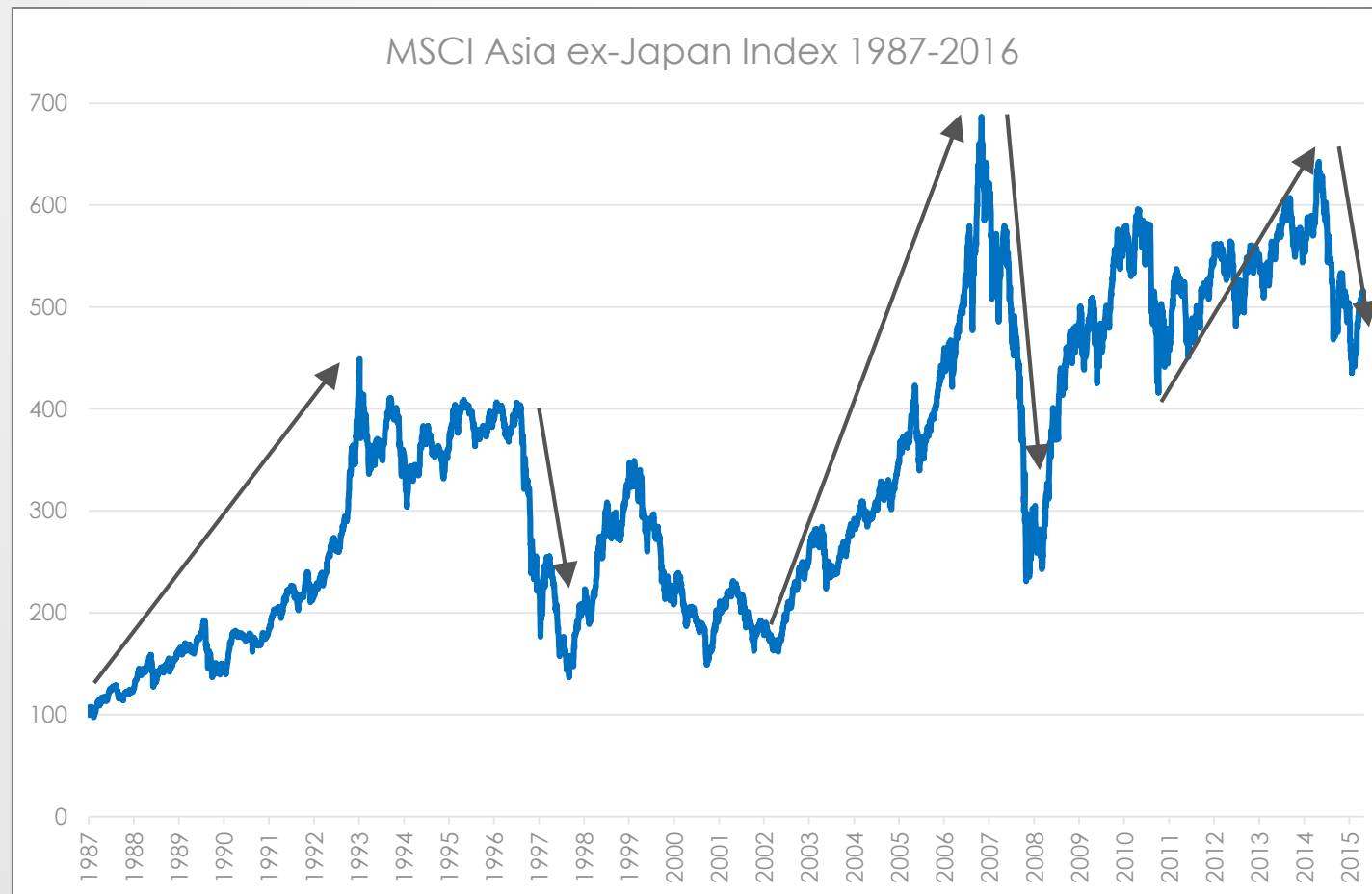
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AGENDA

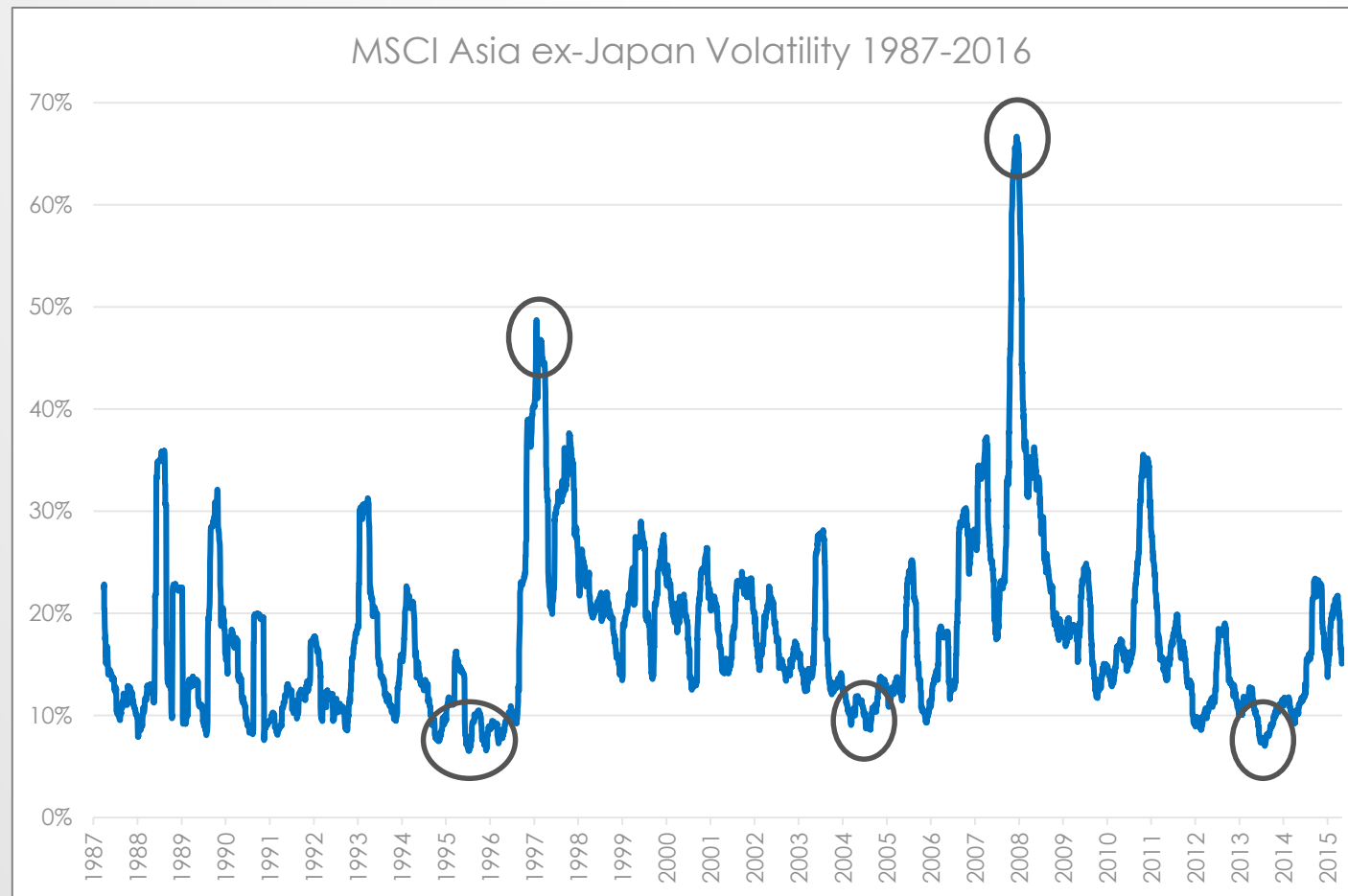
- The Challenge
- What is Risk? What is Risk Management?
- Risk-focused Investment Management
- Examples: Asian Equity Index

THE CHALLENGE: VOLATILE PRICES



Source: Bloomberg

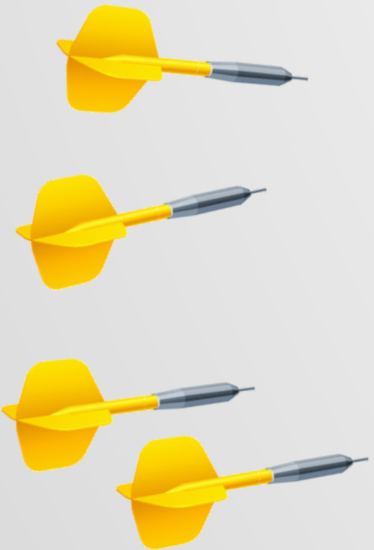
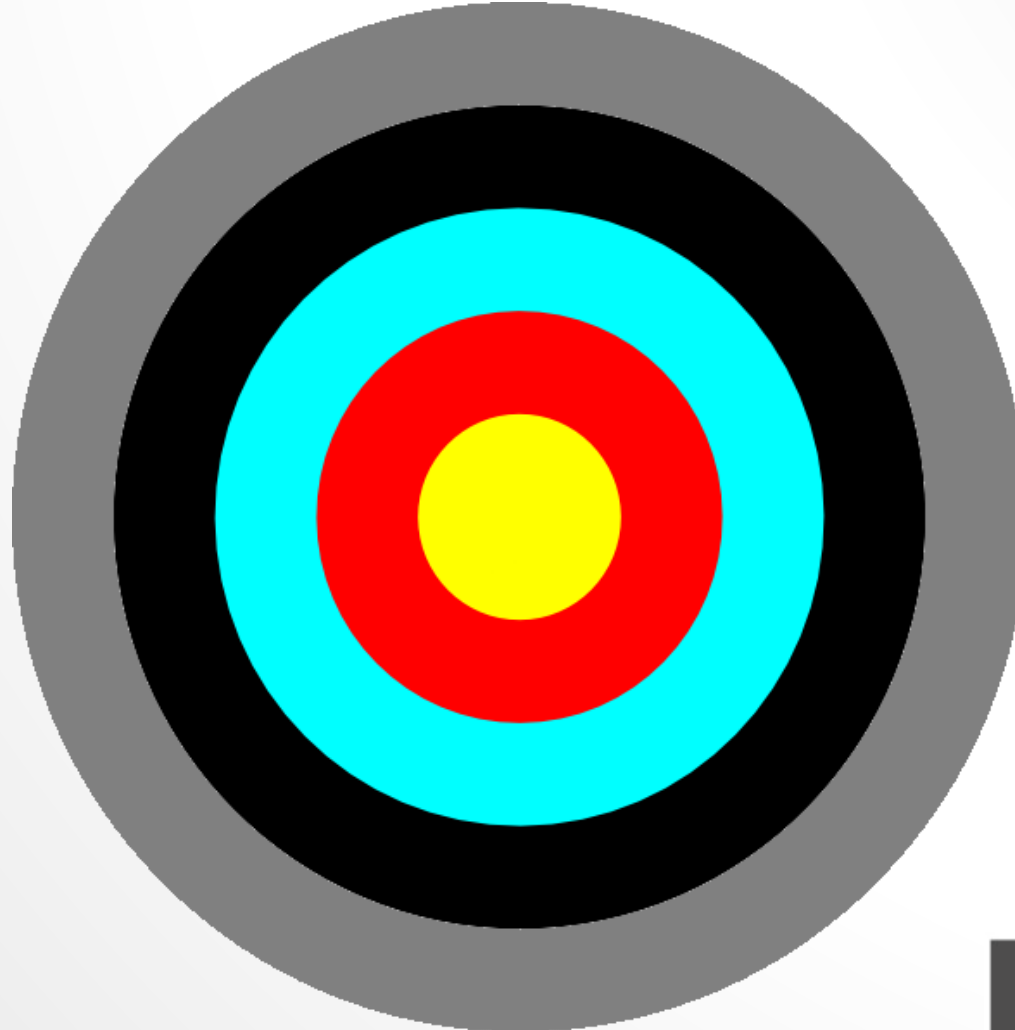
THE CHALLENGE: CHANGING RISK



Source: Bloomberg

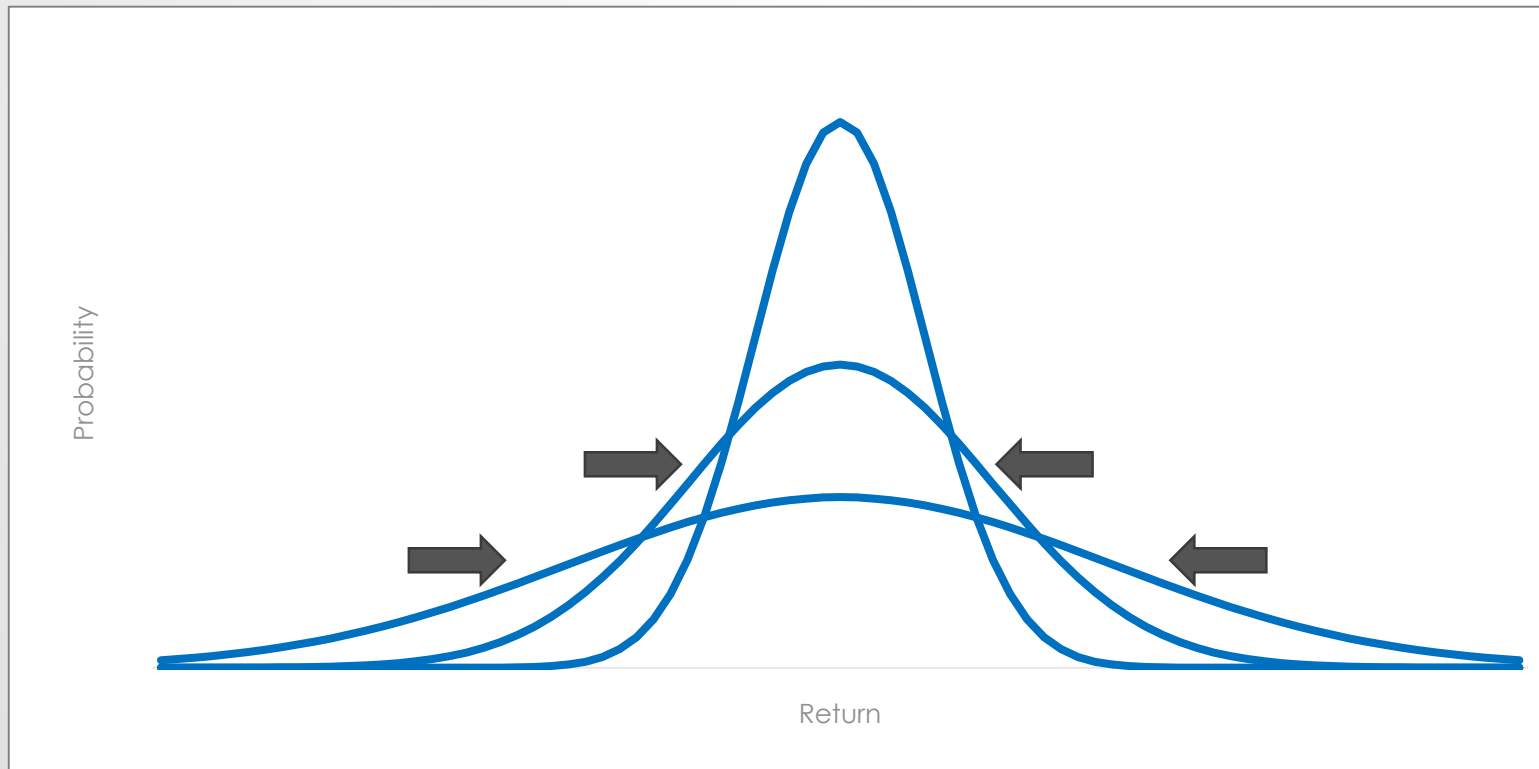
WHAT IS RISK?

- Risk – uncertainty of investment returns
- Investor categories
 - Low risk
 - Medium risk
 - High risk



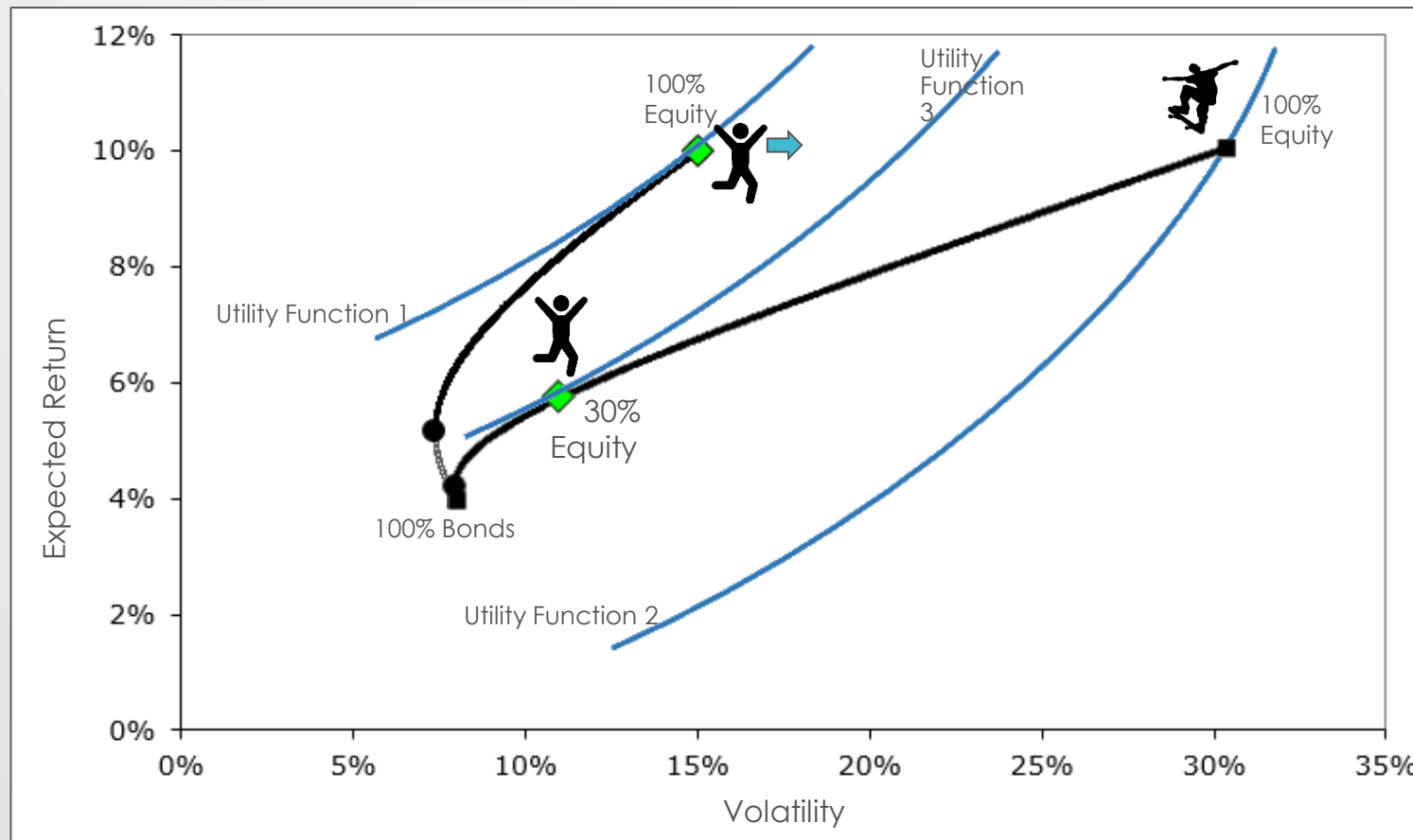
WHAT IS RISK MANAGEMENT?

- Risk management – managing (reducing) uncertainty of investment returns



RESPONDING TO CHANGES IN RISK

- What if equity risk doubles?



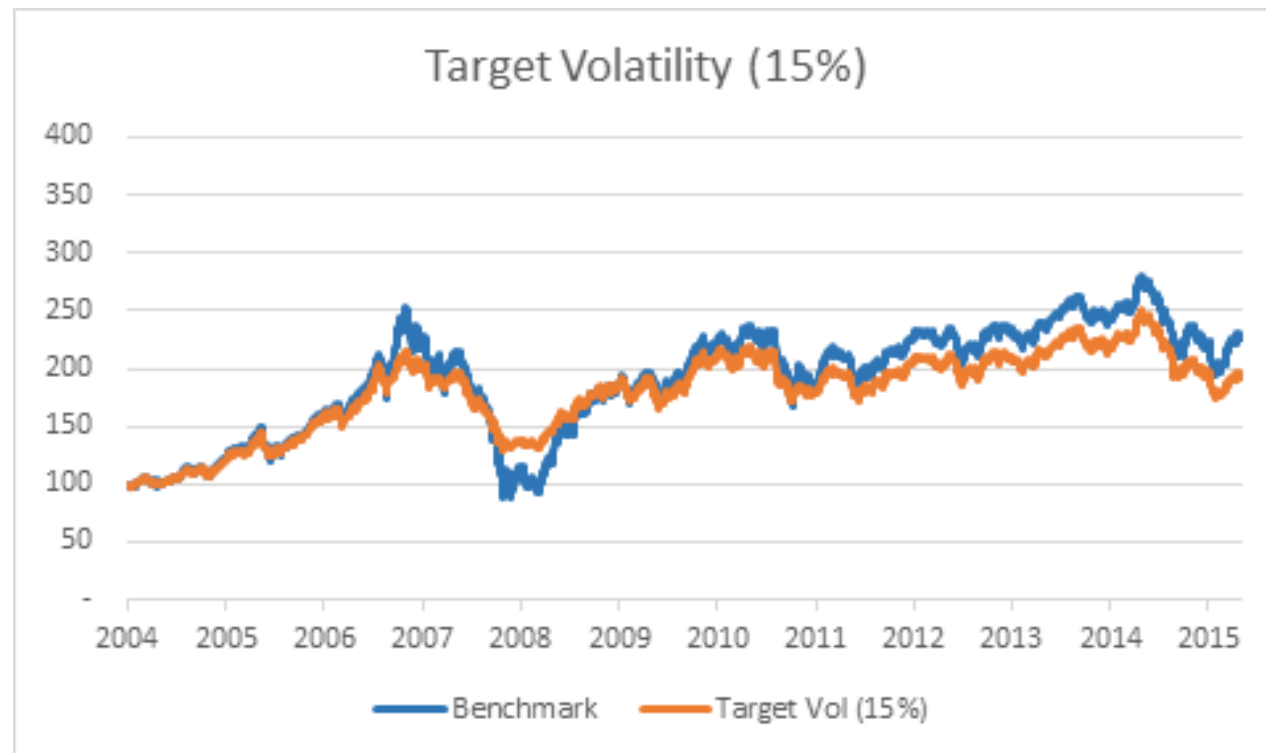
RISK-FOCUSED INVESTMENT MANAGEMENT

- Risk-focused investment management – investing with emphasis on managing risk to acceptable (optimal) levels
- Risk management tools include:
 - Dynamic asset allocation
 - Diversification
 - Hedging
 - Derivatives

EXAMPLE 1: TARGET VOLATILITY

- Systematically adjusting equity exposure to manage risk
- Improved return-risk ratio
- Dynamic asset allocation

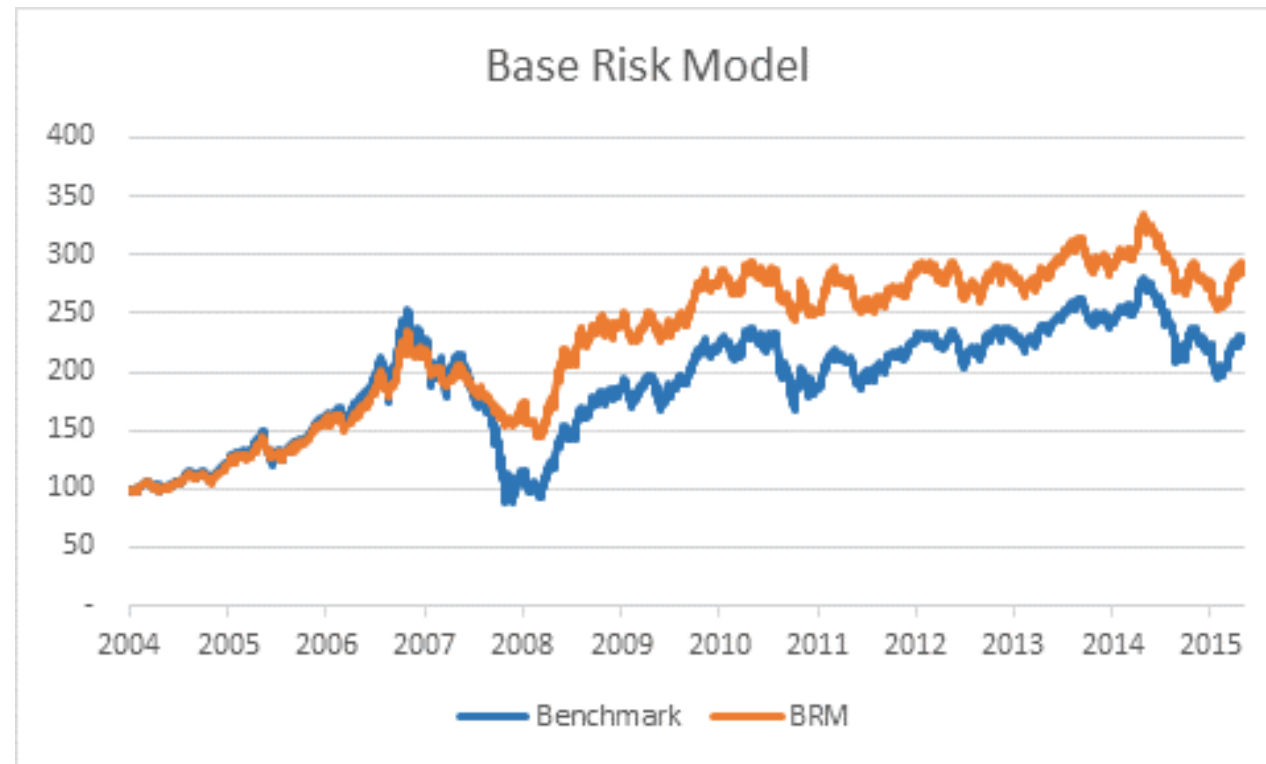
	Benchmark	Target Vol (15%)
Ann. Rtn	7.3%	6.1%
Ann. Vol	21.1%	13.5%
Info Ratio	0.34	0.46
Skew	(0.29)	(0.49)
Kurtosis	7.22	1.93
Max Drawdown	-65.5%	-39.8%



EXAMPLE 2: TARGET VOL 2.0

- Optimizing for risk characteristics of Asian equity market
- Higher returns with lower volatility, resulting in higher return-risk ratio

	Benchmark	Base Risk Model
Ann. Rtn	7.3%	9.2%
Ann. Vol	21.1%	14.4%
Info Ratio	0.34	0.64
Skew	(0.29)	(0.12)
Kurtosis	7.22	3.60
Max Drawdown	-65.5%	-38.9%



*Benchmark: MSCI Asia Ex-Japan Index

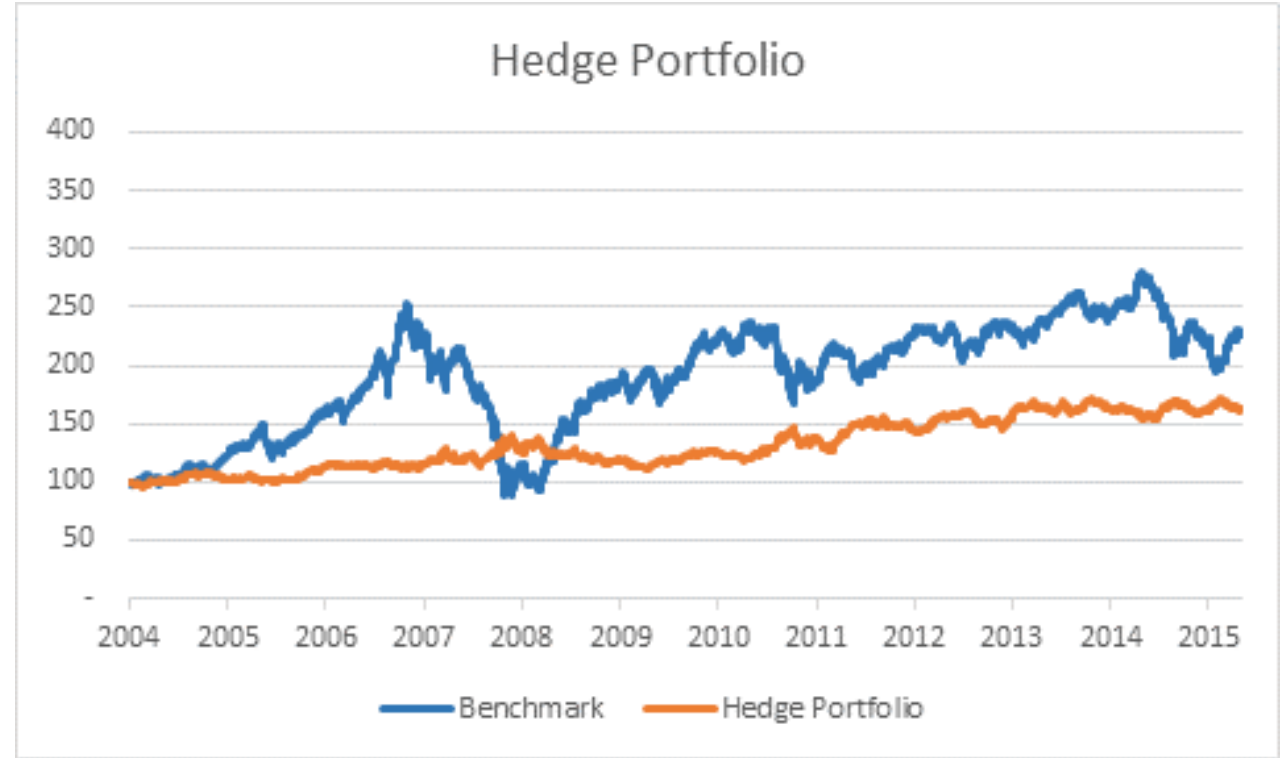
+Model returns are after management fees and transactions costs

Source: Bloomberg and Neo Risk Investment Advisors

EXAMPLE 3: EFFECTIVE HEDGING

- Risk-based diversifying hedge overlay
- Designed to be more effective as risk increases
 - Correlation with Benchmark **-65%**

	Benchmark	Hedge Portfolio
Ann. Rtn	7.3%	4.3%
Ann. Vol	21.1%	9.9%
Info Ratio	0.34	0.44
Skew	(0.29)	(0.06)
Kurtosis	7.22	3.11
Max Drawdown	-65.5%	-20.2%



*Benchmark: MSCI Asia Ex-Japan Index

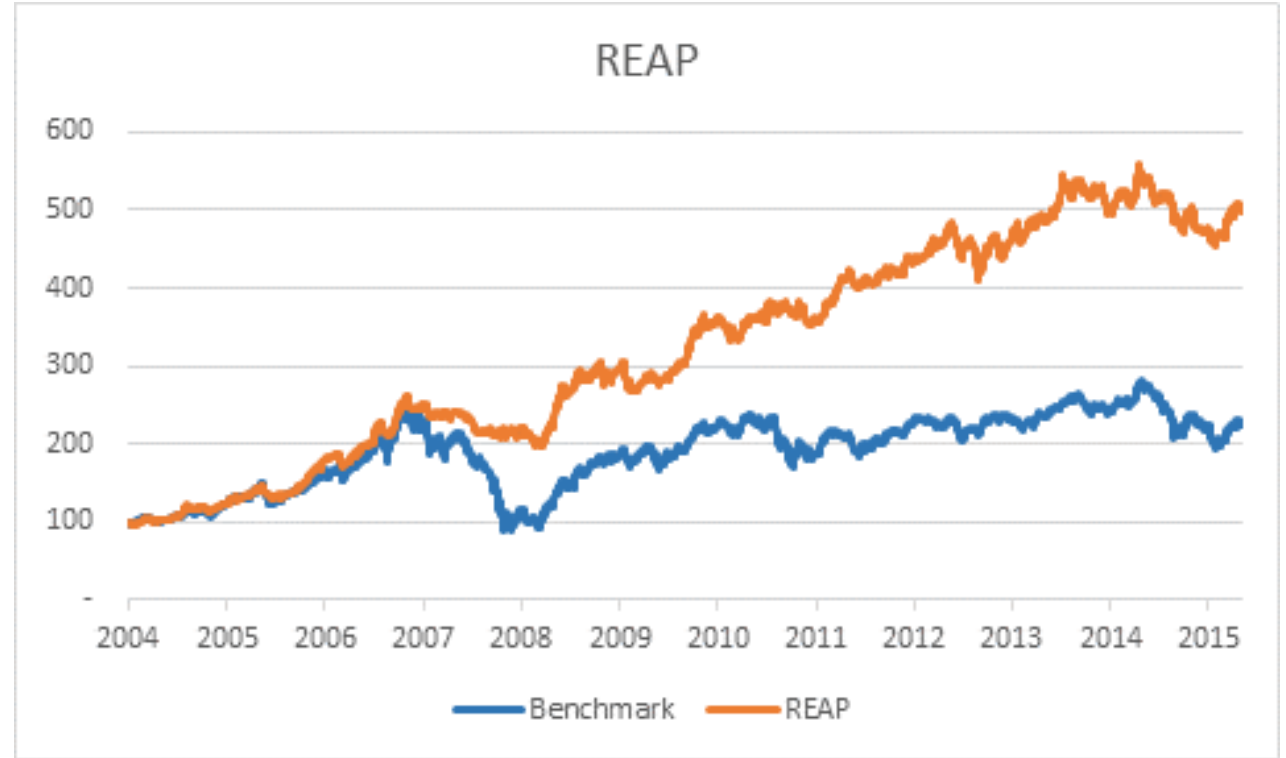
+Model returns are after management fees and transactions costs

Source: Bloomberg and Neo Risk Investment Advisors

EXAMPLE 4: ASIA REAP PORTFOLIO

- Combining Target Volatility 2.0 and Effective Hedging
- Dramatic improvement in returns with lower risk and drawdown

	Benchmark	Asia REAP Portfolio
Ann. Rtn	7.3%	14.1%
Ann. Vol	21.1%	12.1%
Info Ratio	0.34	1.17
Skew	(0.29)	(0.16)
Kurtosis	7.22	2.70
Max Drawdown	-65.5%	-25.2%



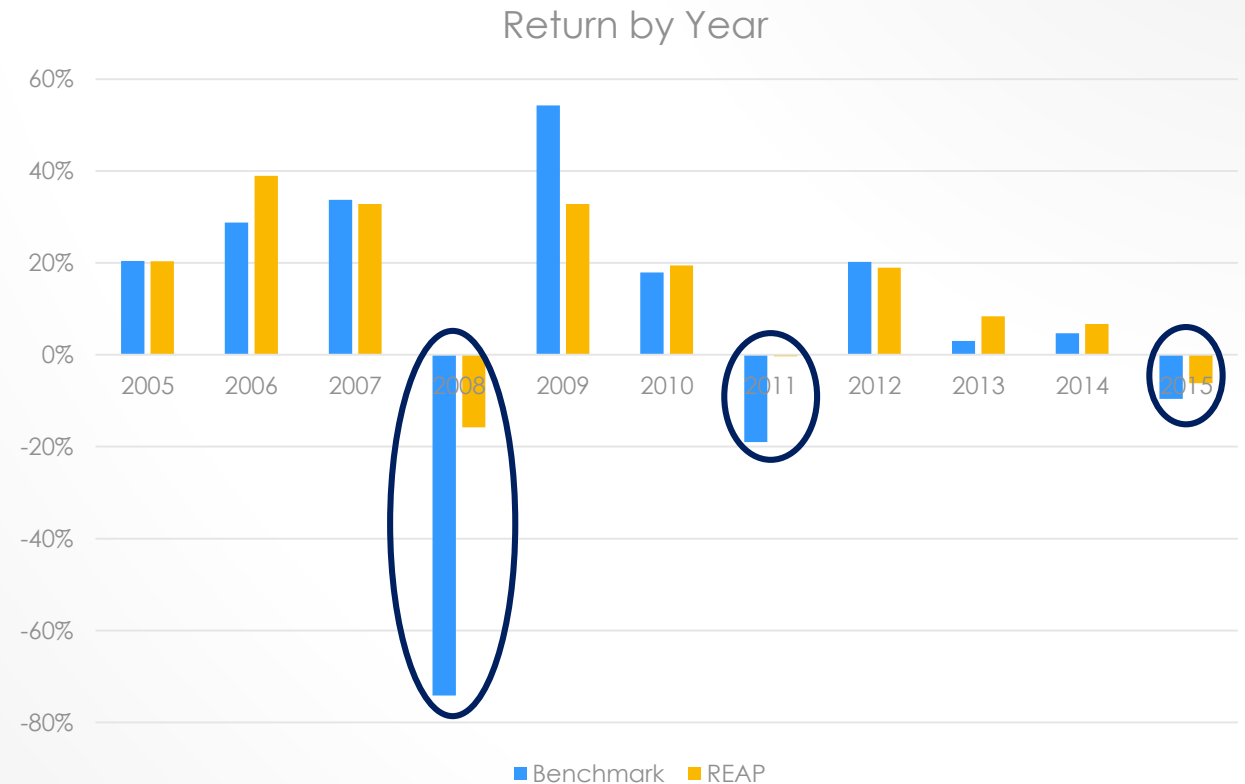
*Benchmark: MSCI Asia Ex-Japan Index

+Model returns are after management fees and transactions costs

Source: Bloomberg and Neo Risk Investment Advisors

PERFORMANCE BY YEAR: RETURN

- Outperformance driven by asymmetric response to up/down markets
- Large outperformance during weak markets
- Marginal underperformance during strong markets



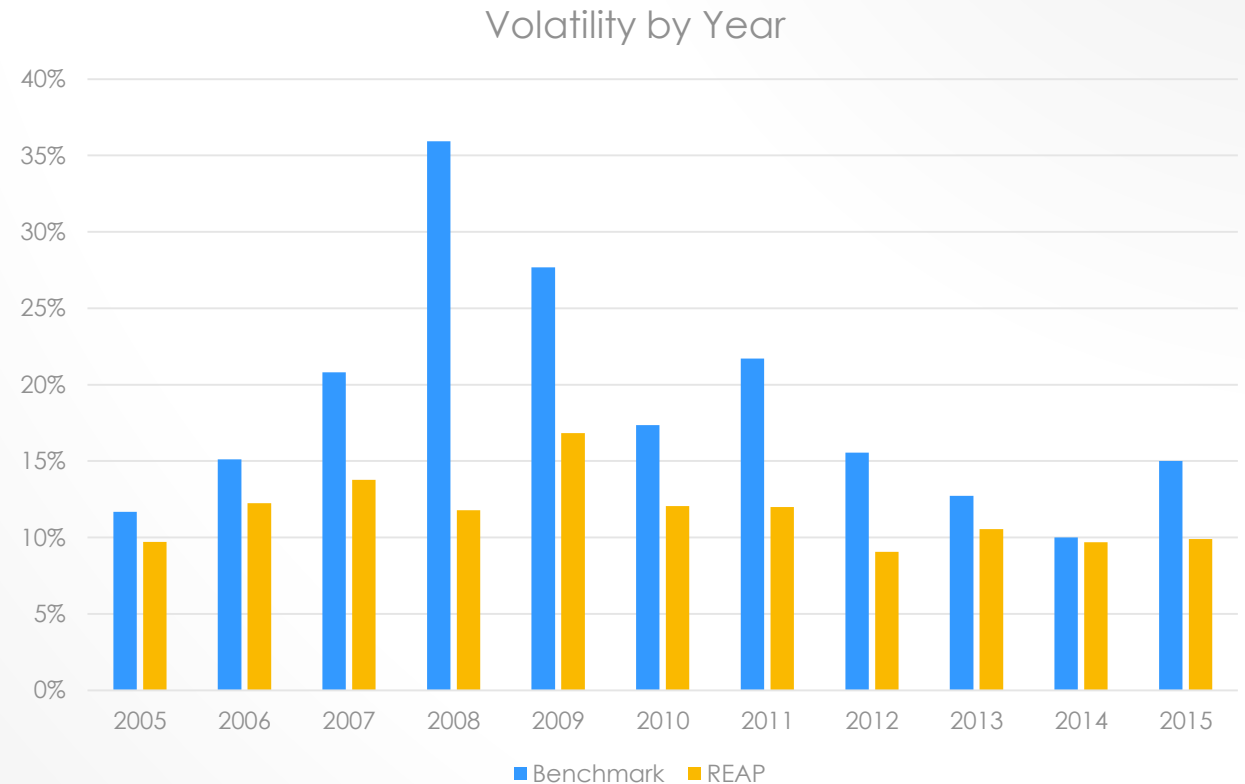
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Source: Bloomberg and Neo Risk Investment Advisors

PERFORMANCE BY YEAR: VOLATILITY

- Impact of active risk management evident
 - Compare Benchmark vs REAP portfolio volatility



*Benchmark: MSCI Asia Ex-Japan Index

+Model returns are after management fees and transactions costs

Source: Bloomberg and Neo Risk Investment Advisors

OUTPERFORMING IN WEAK MARKETS

- Large outperformance during weak markets
 - Target volatility (BRM) manages overall risk level
 - Hedge portfolio delivers positive (diversified) returns

Ten Worst Monthly Returns for Benchmark during Sample Period
2005-2015

Month	Benchmark*	Base Risk Model	Hedge Portfolio	Asia REAP
Oct-08	-27.5%	-5.1%	3.5%	-1.4%
Sep-08	-18.1%	-5.8%	2.7%	-3.0%
Jan-08	-14.9%	-8.9%	3.7%	-4.9%
Sep-11	-14.1%	-5.8%	4.9%	-0.7%
Jun-08	-12.7%	-6.3%	4.0%	-2.1%
Aug-11	-10.4%	-6.3%	5.0%	-1.0%
Aug-15	-10.3%	-7.1%	1.6%	-5.4%
May-12	-10.1%	-7.8%	2.8%	-4.8%
Nov-07	-8.9%	-7.3%	0.7%	-6.6%
May-10	-8.8%	-5.0%	3.0%	-1.8%

*Benchmark: MSCI Asia Ex-Japan Index

+Model returns are after management fees and transactions costs

Source: Bloomberg and Neo Risk Investment Advisors

SUMMARY

- Volatile market movements presenting challenges to investing
- Risk-focused investment management required to deliver optimal results for investors
- Asymmetric response to positive/negative markets adds value
 - Smoothed returns, smaller drawdowns, overall outperformance

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