

An Introduction on PIMCO Tail Risk Hedging Strategy:

FELRA and UFCW

July 2013

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Biography

Michael Connor

Mr. Connor is an executive vice president in the Newport Beach office and a member of the product management group. Prior to joining PIMCO in 2012, he worked at Merrill Lynch, UBS/Swiss Bank and Salomon Brothers focusing on trading/structuring all types of derivative products. He has 26 years of investment experience and holds an MBA from the University of Chicago and a bachelor's degree from Princeton University.

Presentation outline

1. Executive summary
2. Why hedge?
3. Understanding costs
4. PIMCO's Tail Risk Hedging portfolios
5. Additional information

Executive summary

OBJECTIVE	SOLUTION	IMPLEMENTATION
Cushion the portfolio against systemic market crises	Explicitly hedge against tail events using option-like securities	PIMCO's Tail Risk Hedging Strategy



- Direct hedges could include longer-dated equity puts
 - PIMCO could also consider cost-mitigating strategies such as implementing put spreads
- Indirect hedges could include
 - Credit default swap index and index tranches, interest rate swaptions, and other options in deep liquid markets sensitive to macroeconomic events
- PIMCO seeks to add value through better price execution and active management of hedge portfolio across market environments

SOURCE: PIMCO

Refer to Appendix for additional investment strategy and risk information

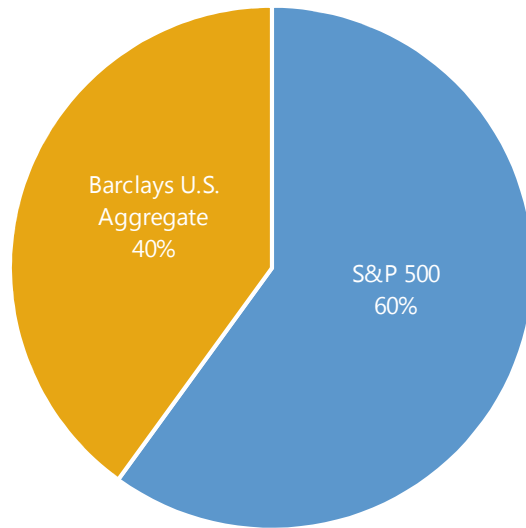
Why hedge?

- Help stabilize portfolio volatility on a mark-to-market basis
- Help limit downside and maintain exposure to risk assets
- Help create liquidity during periods of market stress

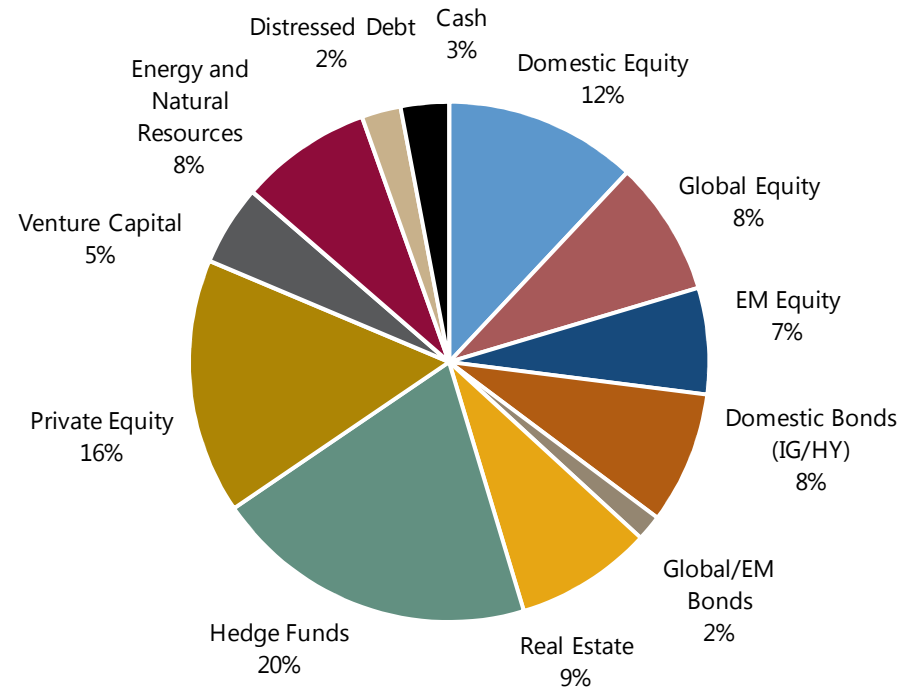
Refer to Appendix for additional risk information.

We hedge diverse portfolios

TRADITIONAL PORTFOLIO “60/40”



NON-TRADITIONAL PORTFOLIO¹



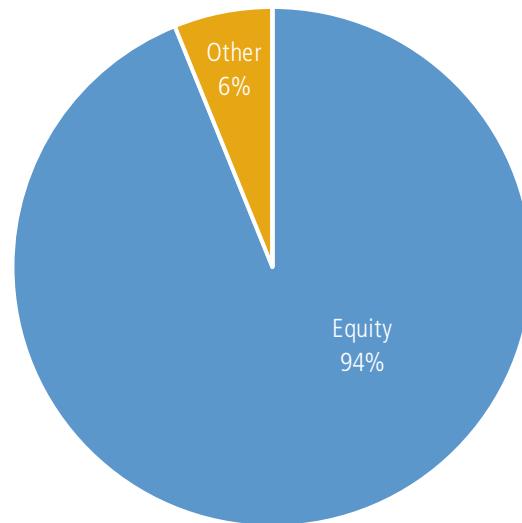
As of 30 June 2013
SOURCE: NCSE, PIMCO.

Hypothetical example for illustrative purposes only.

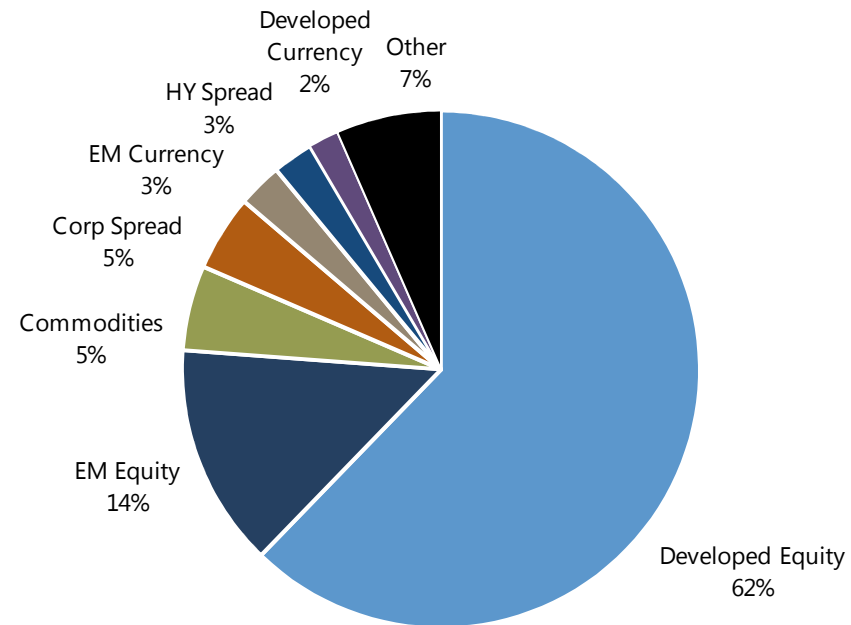
¹ Average Endowment Portfolio information from the 2012 NACUBO-Commonfund Study of Endowments (NCSE). This study is based on information collected as of 30 June 2012. The asset allocation percentages shown are based on the Average Endowment Portfolio as of 30 June 2012 for endowments >\$1 billion. Refer to Appendix for additional non-traditional style portfolio index sources, hypothetical example and portfolio analysis information.

Equity risk dominates portfolio volatility

RISK ALLOCATIONS IN A TRADITIONAL PORTFOLIO¹



RISK ALLOCATIONS IN A NON-TRADITIONAL PORTFOLIO²



Equity beta is the dominant risk factor

As of 30 June 2013
SOURCE: NCSE, PIMCO.

Hypothetical example for illustrative purposes only

¹ 60% allocation to S&P 500 Index and 40% allocation to Barclays US Aggregate Index

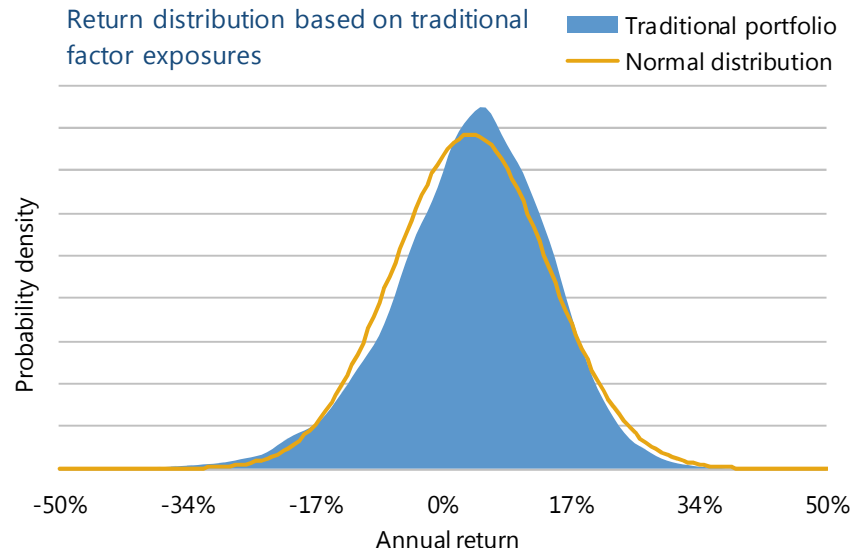
² Average Endowment Portfolio information from the 2012 NACUBO-Commonfund Study of Endowments (NCSE). This study is based on information collected as of 30 June 2012. The asset allocation percentages shown are based on the Average Endowment Portfolio as of 30 June 2012 for endowments >\$1 billion. Refer to Appendix for additional non-traditional portfolio index sources, hypothetical example, index, and risk information.

Traditional and non-traditional portfolios display similar left tail exposures

During stress events, risk-asset values tend to fall and return correlations rise

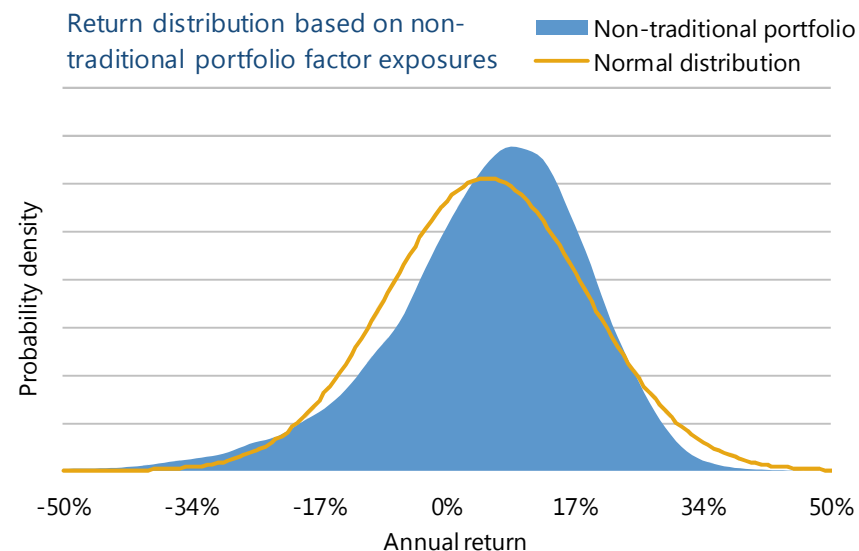
TRADITIONAL "60/40" PORTFOLIO¹

Return distribution based on traditional factor exposures



NON-TRADITIONAL PORTFOLIO²

Return distribution based on non-traditional portfolio factor exposures



SOURCE: PIMCO, NCSE
31 January 2000 – 30 June 2013

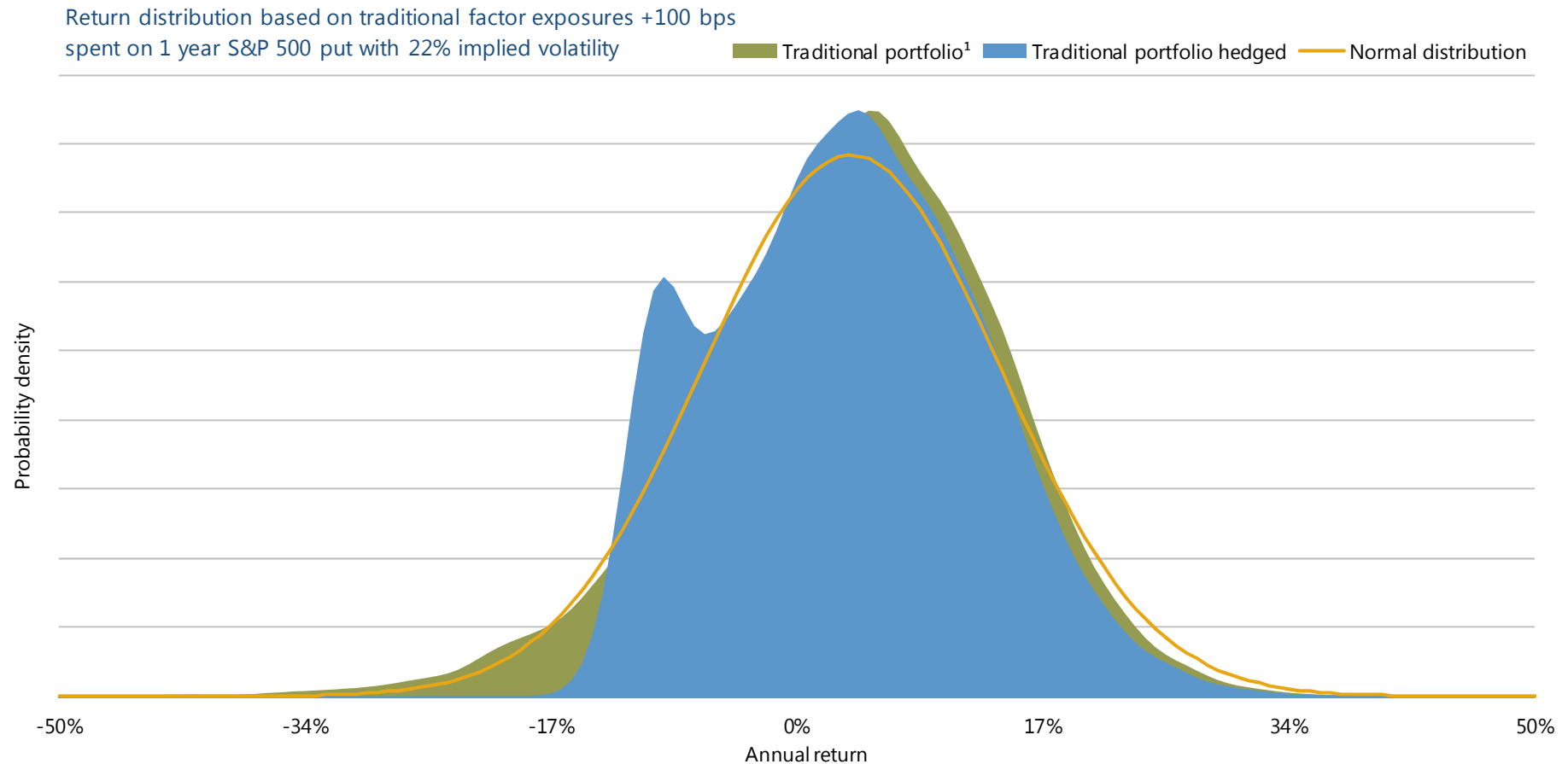
Hypothetical example for illustrative purposes only

¹ 60% S&P 500 Index, 40% Barclays U.S. Aggregate Index

² Based on the risk factors expressed in a non-traditional portfolio (NCSE) index sources

Refer to Appendix for additional hypothetical example, index and non-traditional portfolio index sources information.

The impact of a simplistic and hypothetical hedge strategy

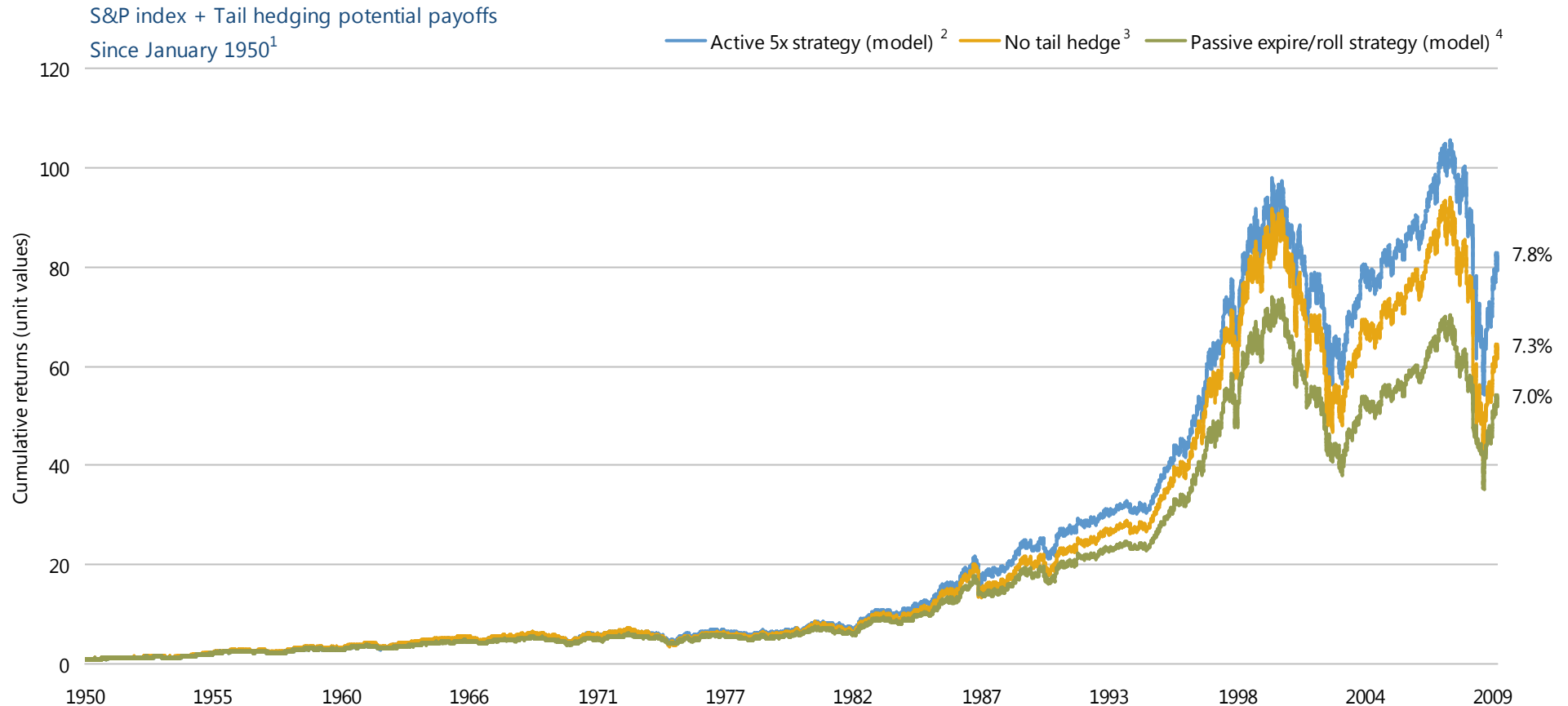


SOURCE: NCSE, PIMCO
31 January 2000–30 June 2013

Hypothetical Example for illustrative purposes only

¹ 60% S&P 500 Index, 40% Barclays U.S. Aggregate Index
Refer to Appendix for additional hypothetical example, index, and risk information.

Active management: Simple tail risk hedging strategies could have improved returns over the long term



SOURCE: PIMCO; "Offensive Risk Management II: The Case for Active Tail Risk Hedging", V. Bhansali and Josh Davis, April 2010.

Hypothetical example for illustrative purposes only.

The objective of the illustration is to show the mechanics of tail risk hedging during all periods of severe market stress (from 1950 to 2009), often referred to as "tail events." Periods of market stress would be characterized by 1) a substantial decline in the equity markets, 2) a substantial widening in credit spreads, and 3) a substantial increase in market volatility.

Percentages illustrated on the right hand side of the chart represent annualized returns. Note: This portfolio analysis is based on the paper sourced above.

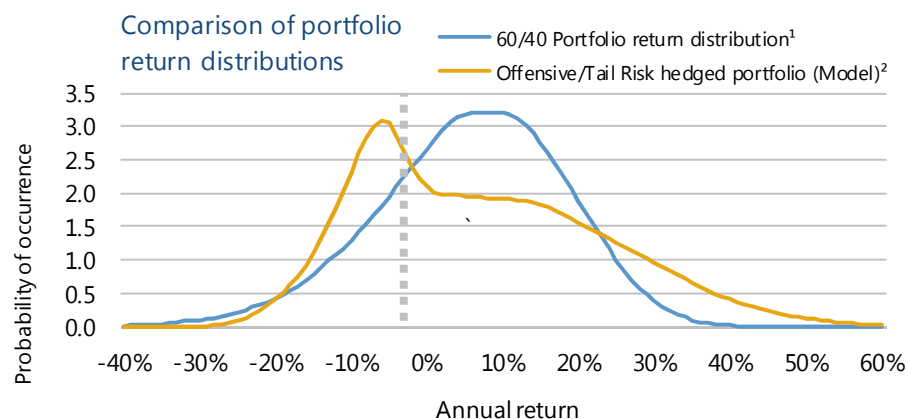
¹ Other fees and/or expenses are not included in the annual return. Prior to 1957, the S&P Index was S&P 90 Index. After 1957, the index was S&P 500.

² The active management strategy (model) spends 100 basis points per year and monetizes the tail hedge whenever it moves beyond five times the purchase of the S&P 500 put options. The strategy follows a rule that generates liquidity by selling options at their mark-to-market value when the returns to selling liquidity are high. It also involves spending the proceeds of option sales on replacement hedges and on stocks.

³ Employs no tail hedge and simply invests in the S&P Index.

⁴ The strategy (model) spends 100 basis points per year and holding the put option of the index until it expires.
Refer to Appendix for additional chart, hypothetical example, index, investment strategy, and risk information

Offensive risk management: Can tail risk hedging be profitable?



	60/40 PORTFOLIO ³	OFFENSIVE / TAIL RISK PORTFOLIO ⁴
Estimated return	6%	7%
Volatility	12%	16%
Downside volatility	8%	5%
Upside volatility	8%	12%
10th percentile	-11%	-11%
90th percentile	21%	30%

- Tail risk hedging is a risk mitigation strategy, which may also be “offensive”:
 - Helps investors to increase risk exposures
 - Looks to provide liquidity in tail events that can be re-invested in distressed markets
- The figure above shows that although the median return of the offensive portfolio is lower, its estimated return is higher
- The fatter right tail compensates for the shift of the median to the left
- The above table contrasts the statistical characteristics of the two return distributions
 - Estimated return associated with Offensive/Tail Risk hedged portfolio is higher as tail risk hedging reduces the probability of large negative returns
 - While volatility of the tail risk hedged portfolio is greater, downside volatility is much larger in the 60/40 portfolio whereas upside volatility is much larger in the Offensive/Tail Risk hedged portfolio

SOURCE: PIMCO (“Offensive Risk Management: Can Tail Risk Hedging Be Profitable?” April 2010 by Vineer Bhansali and Joshua M. Davis)

Hypothetical example for illustrative purposes only

(1 January 1990-1 March 2010)

The objective of the illustration is to show the mechanics of tail risk hedging during all periods of severe market stress, often referred to as “tail events.” Periods of market stress would be characterized by 1) a substantial decline in the equity markets, 2) a substantial widening in credit spreads, and 3) a substantial increase in market volatility.

Note: This portfolio analysis is based on the paper sourced above. The 60/40 Portfolio shown differs from the “Traditional” 60/40 Portfolio referenced throughout this material. Bonds in this portfolio are represented by short maturity T-Bills rather than intermediate investment grade bonds in the “Traditional” portfolio. Different indexes would have different results.

¹ The first distribution (blue line) is based on an allocation of 60% equities (S&P 500) and 40% Treasuries (Citigroup 3-Month T-Bill), with a risk premium on equities of 5% per year

² The second distribution (the yellow line) is derived based on an iterative optimization (varying increases of equity allocation above 60% and different strikes on an S&P put option hedge) to match estimated value of losses greater than 5% in the first portfolio (blue line). Estimated value of losses is defined as the probability of losses greater than 5%, multiplied by the magnitude of those returns 2.

While the median return of the second portfolio (yellow line) is lower, its estimated return (probability multiplied by magnitude of returns) is higher, with a fatter right tail compensating for the shift of the median to the left.

³ 60/40 Portfolio (S&P 500/ Citigroup U.S. 3-Month T-Bill) 1 January 1990-1 March 2010

⁴ Offensive/Tail Risk Hedged Portfolio (Model). Fees and/or expenses are not included in the annual return
Refer to Appendix for additional hypothetical example, index, risk and upside/downside volatility information.

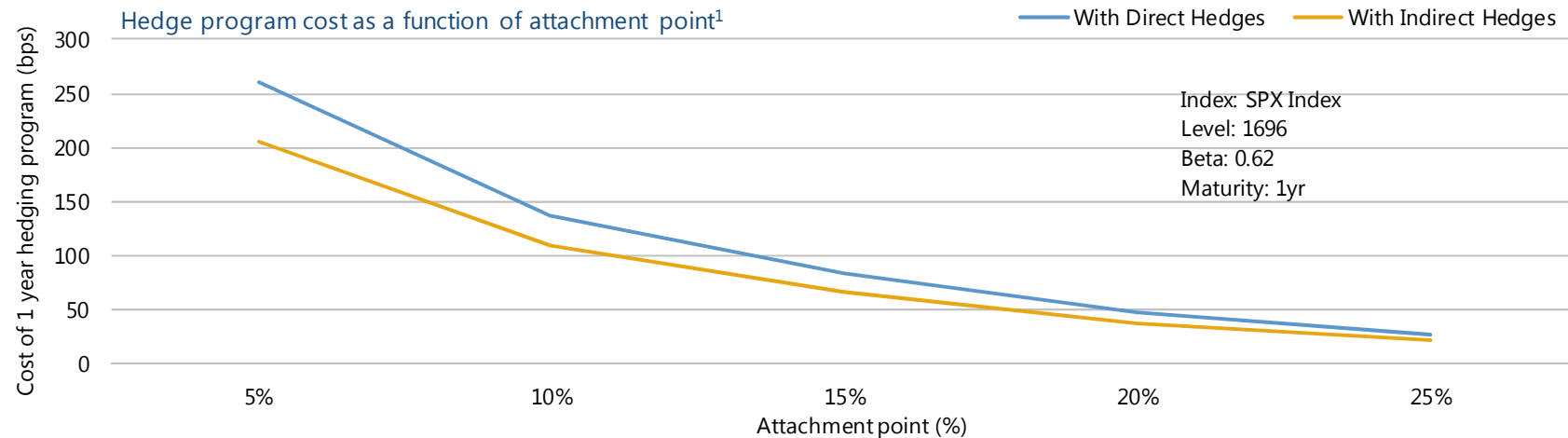
PIMCO Tail Risk strategy

- Assemble a portfolio primarily of long option positions
- Designed to limit portfolio losses or provide a negatively correlated investment when risk markets sell-off
- Over a defined investment horizon – typically rolling 1-year periods
- For a predefined cost or maximum loss threshold (e.g., -15%)
- Monitor for attractive monetization points or opportunities to restrike options at a lower cost

Refer to Appendix for additional investment strategy and risk information.

Understanding costs

Trade-off between budget and attachment point – possible cost reduction from indirect hedges



Attachment Point	Indicative Cost of Direct Hedges (bps) ²	Indicative Cost of Direct and Indirect Hedges (bps) ³	Difference (bps)
5%	260	205	55
10%	137	109	28
15%	84	66	18
20%	47	37	10
25%	27	21	6

As of 22 July 2013

SOURCE: PIMCO, Bloomberg Financial Markets

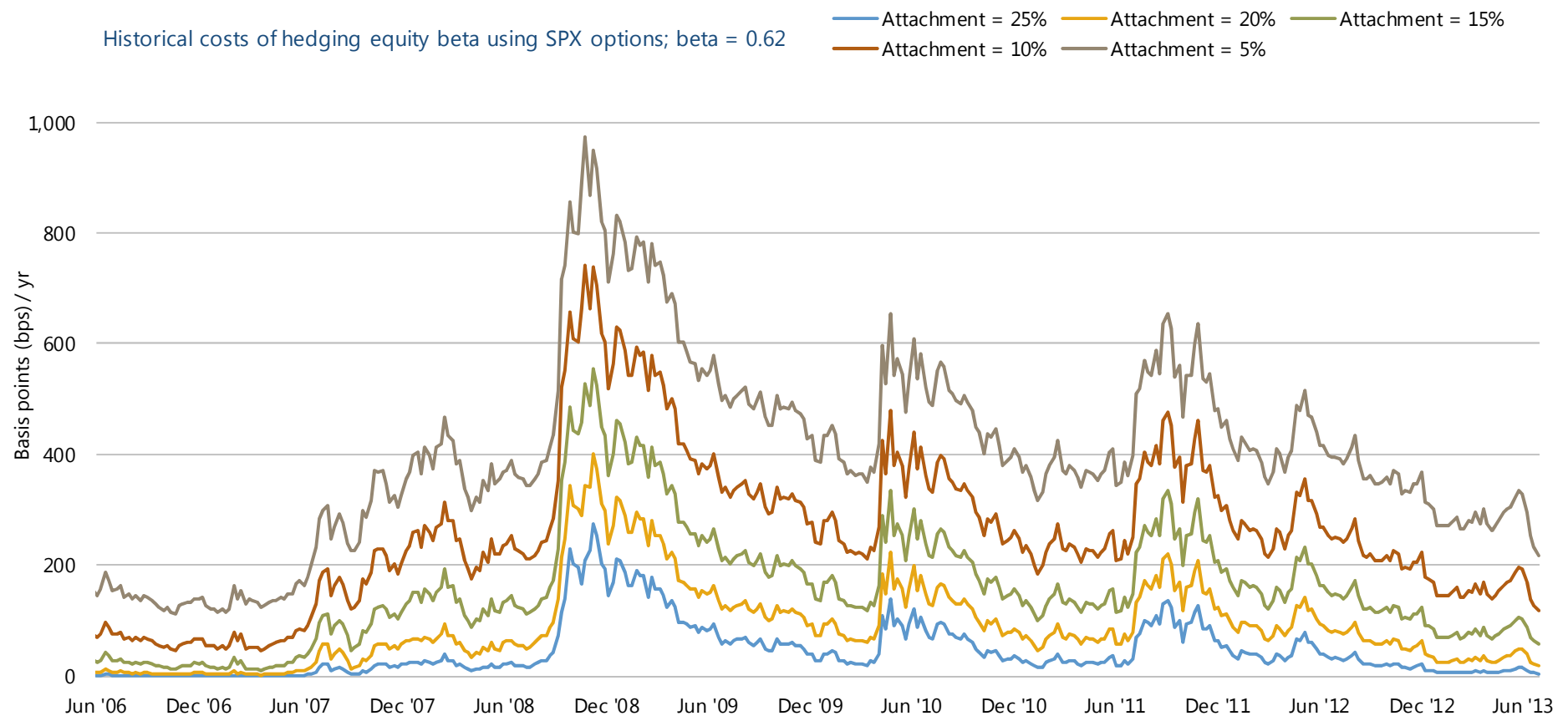
Hypothetical example for illustrative purposes only

¹ Attachment point is the targeted maximum loss at the investment hedge horizon of the combined reference investment portfolio and the investment hedge portfolio. Not a guaranteed number, the Loss Threshold should be considered an investment objective. Additional descriptions relating to this information are contained in the additional information section under "Definitions."

² Direct hedges are comprised of S&P put option contracts. The total indicative cost of direct hedges is provided by Bloomberg.

³ Indirect hedges are comprised of replacing the S&P put options with tail-risk hedging instruments (derivatives): Credit default swap index tranches, currency options, and interest rate options. Refer to Appendix for additional hypothetical example and index information.

Hedging costs vary widely



As of 22 July 2013

SOURCE: PIMCO, Bloomberg Financial Markets

Hypothetical Example for illustrative purposes only

Attachment point is the targeted maximum loss at the Investment Hedge Horizon of the combined Reference Investment Portfolio and the Investment Hedge Portfolio. Not a guaranteed number, the Loss Threshold should be considered an investment objective. Additional descriptions relating to this information are contained in the additional information section under "Definitions." Refer to Appendix for additional hypothetical example, index, investment strategy and risk information.

Considerations in portfolio construction

- Size option positions as a function of:
 - The level of the loss threshold
 - The likely behavior of implied price volatilities at the loss threshold
 - The likely co-movement of indirect hedge values with those of direct hedges
 - The relative richness or cheapness of indirect hedges
 - The degree of basis risk introduced by the use of indirect hedges
- Considerations in the use of indirect hedges
 - Relative richness or cheapness
 - Degree of basis risk

Refer to Appendix for additional risk information.

A representative tail hedge portfolio – model and cost budget

10% Attachment Point

Model portfolio includes a mix of direct and indirect hedges

HEDGE DESCRIPTION	POTENTIAL EVENT	CONTRACT/TERMS	COST BUDGET ¹
Equity (Direct)	S&P 500: Decrease	SPX 1YR 1425 Put	21 bps
Equity (Indirect)	S&P 500: Decrease	SPX 1YR 1575 Put	18 bps
Equity (Indirect)	S&P 500: Decrease	SPX 1YR 1475/1300 Put Spread	16 bps
Equity (Indirect)	Nikkei 225: Decrease	NKY 1YR 11250 Put	8 bps
Equity (Indirect)	MSCI EM: Decrease	EEM 1YR 32/28 Put Spread	13 bps
Equity (Indirect)	Financial Sector: Decrease	XLF 1YR 16/13 Put Spread	10 bps
Currency (Indirect)	Australian Dollar: Decrease	AUDUSD 1YR 0.81/0.73 Put Spread	11 bps
Currency (Indirect)	Australian Dollar: Decrease	AUDJPY 1YR 79/72 Put Spread	5 bps
Credit (Indirect)	Investment Grade Credit Spreads: Widen	CDX 10YR 15-30% Tranche	8 bps

Total: 108.8 bps

Model portfolio includes a direct hedge benchmark

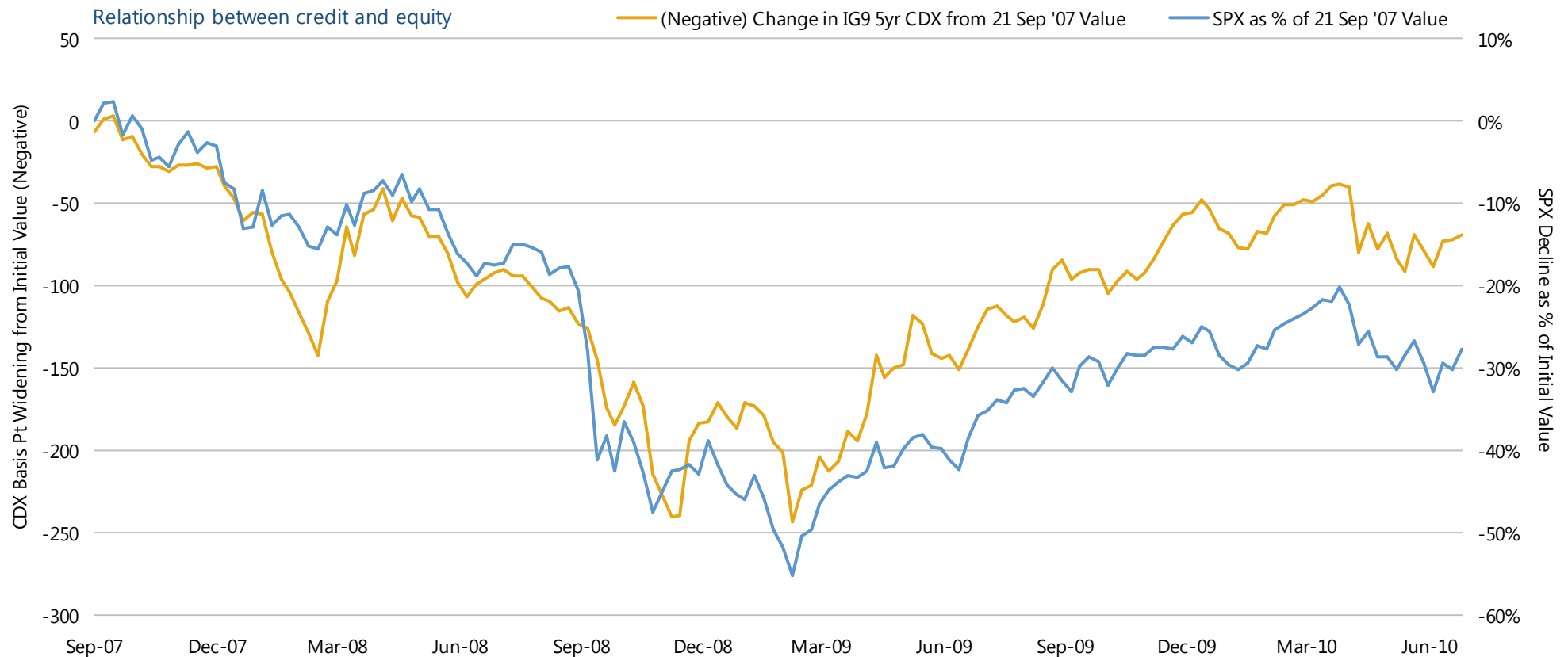
HEDGE DESCRIPTION	POTENTIAL EVENT	CONTRACT/TERMS	COST BUDGET
Equity (Direct)	S&P 500: Decrease	SPX 1YR 1425 Put	137.0 bps

As of 22 July 2013
SOURCE: PIMCO

¹ Model Tail Risk Hedging Portfolio is indicative of the types of instruments that may be used in PIMCO's tail risk hedging strategy. Cost shown is for illustrative purposes only and current premium may be more or less than the cost shown. There may be additional costs involved in management and hedging portfolios that are not included in the information shown above.
Hypothetical example for illustrative purposes only
Refer to Appendix for additional hypothetical example, investment strategy, and risk information.

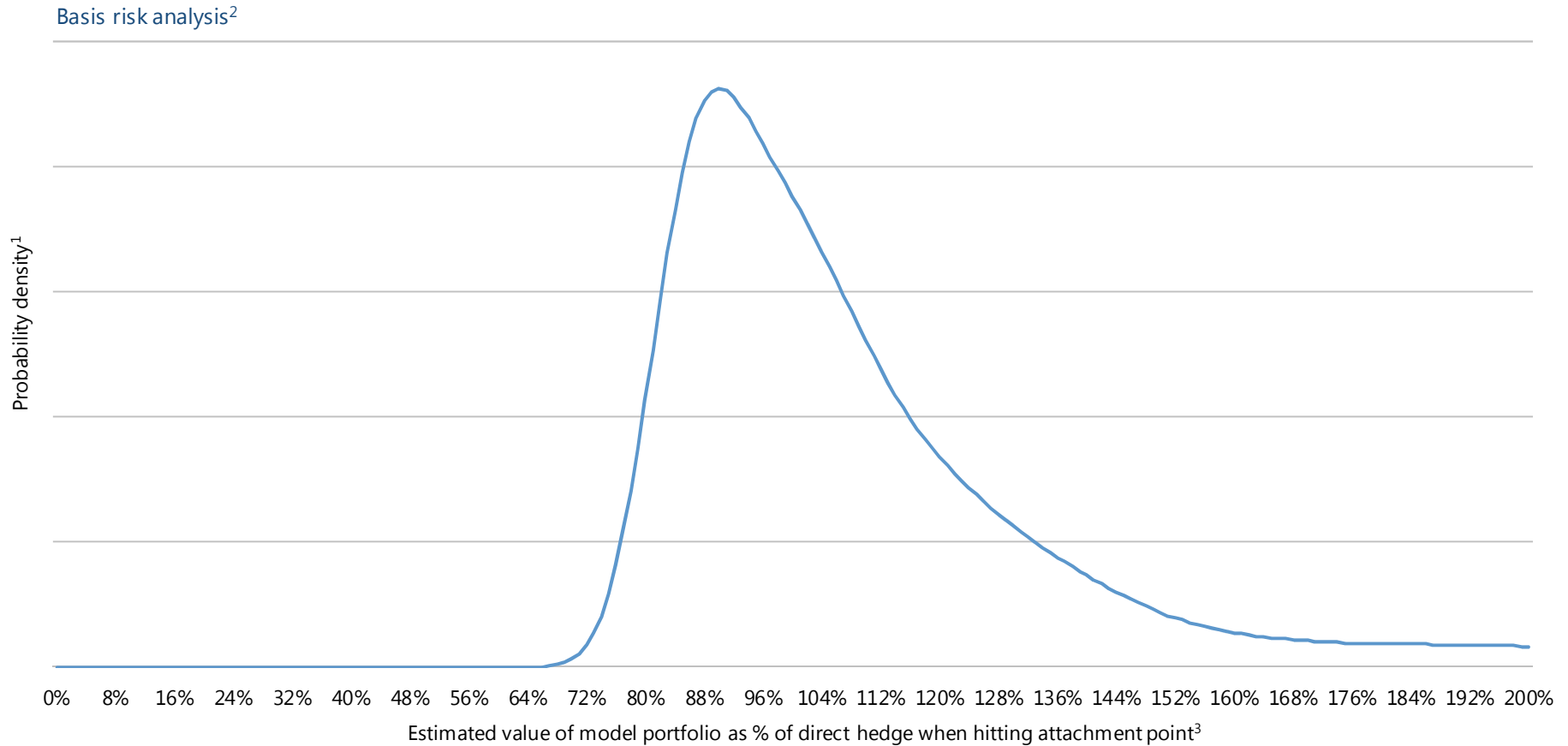
Indirect hedge example

Credit spreads widen as stock prices fall



SOURCE: PIMCO, Bloomberg
Refer to Appendix for additional index information.

Representative portfolio scenario analysis

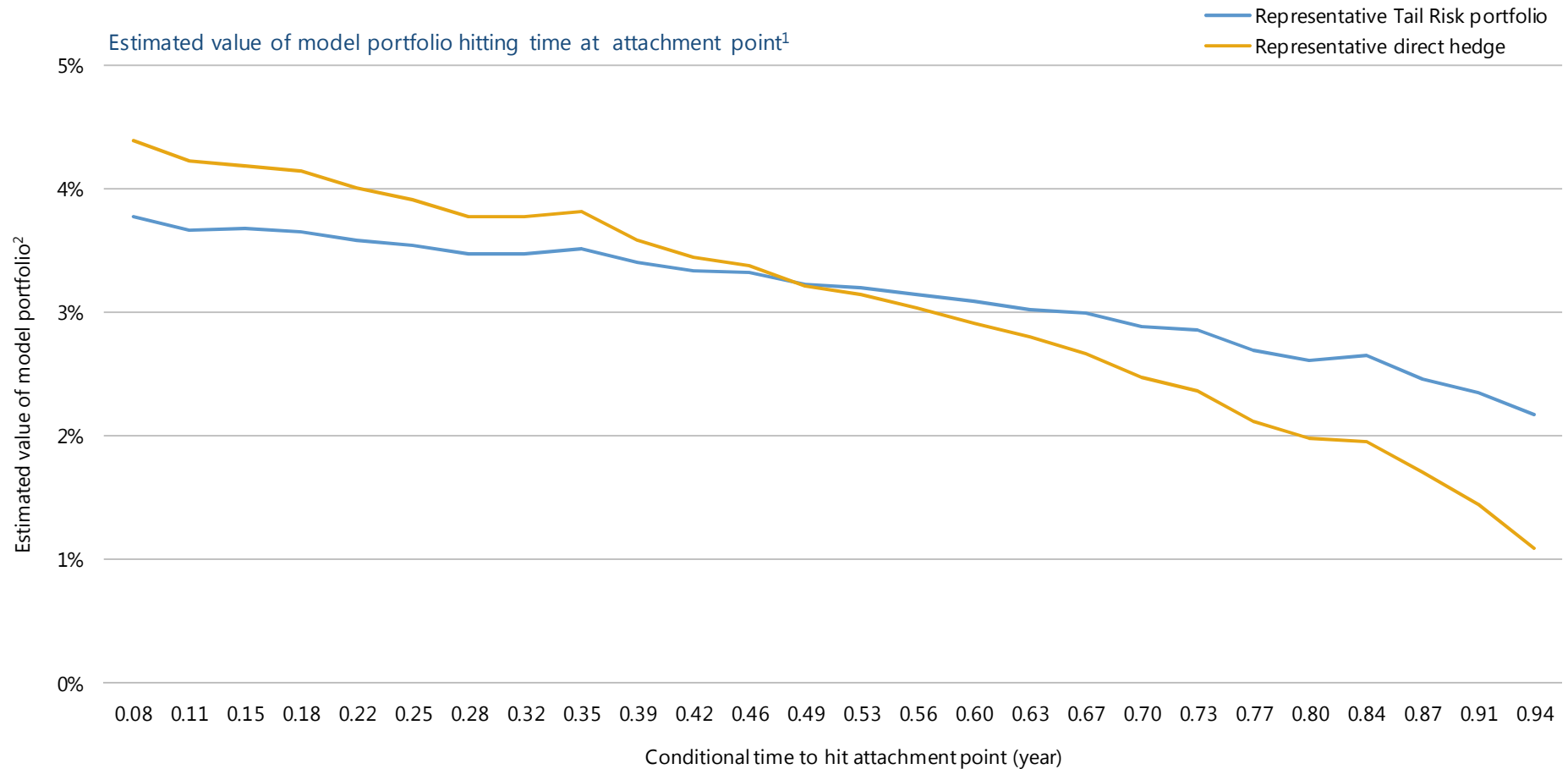


As of 22 July 2013. SOURCE: PIMCO

Hypothetical example for illustrative purposes only.

- ¹ The probability density reflects a simulated distribution of outcomes. In this case outcomes (on the X-axis) are defined as the hedge portfolio performing exactly in line with a direct hedge (100%), under-performing the direct hedge (<100%), and outperforming a direct hedge (>100%). The Y-axis reflects probability of those simulated occurrences, with the total area under the curve equal to 1.
- ² Basis risk is the risk that the value of the tail risk hedge portfolio differs from the value of a direct hedge. The Basis Risk model is using a stochastic process whereby various indices levels, volatilities, and correlations are estimated in tandem. The estimated values of the hedged portfolios are then calculated and the chart shows each simulated result. No additional fees or expenses (excluding the premium spent) were included in the model.
- ³ The model portfolio is based on the direct hedge benchmark strategy (purchasing actual S&P 500 index). Please refer to the "Representative Tail Hedge Portfolio- model and cost budget" page for additional benchmark and premium information. Attachment point is the targeted maximum loss at the Investment Hedge Horizon of the combined Reference Investment Portfolio and the Investment Hedge Portfolio. Not a guaranteed number, the Loss Threshold should be considered an investment objective. Additional descriptions relating to this information are contained in the additional information section under "Definitions." Refer to Appendix for additional hypothetical example, investment strategy, model and risk information.

Representative portfolio scenario analysis vs. direct hedge benchmark



As of 22 July 2013

SOURCE: PIMCO

Hypothetical example for illustrative purposes only.

No additional fees or expenses (excluding the premium spent) were included in the models.

¹ Attachment point is the targeted maximum loss at the Investment Hedge Horizon of the combined Reference Investment Portfolio and the Investment Hedge Portfolio. Not a guaranteed number, the Loss Threshold should be considered an investment objective. Additional descriptions relating to this information are contained in the additional information section under "Definitions."

² The model tail risk strategy includes a mix of direct and indirect hedges (purchasing various derivatives: equity, currency, and credit). The model direct hedge benchmark is based on purchasing S&P 500 Index. Please refer to the "Representative Tail Hedge Portfolio- model and cost budget" page for additional benchmark and premium information. Refer to Appendix for additional hypothetical example, investment strategy and risk information.

Model portfolio scenario analysis

REPRESENTATIVE TAIL RISK PORTFOLIO PAYOFF PROFILE ²									REPRESENTATIVE DIRECT HEDGE PAYOFF PROFILE ²						
Shock occurs (in months from now)	Unhedged portfolio return ¹	At-the-Money Volatility Scenarios							At-the-Money Volatility Scenarios						
		12%	20%	22%	24%	26%	28%	50%	12%	20%	22%	24%	26%	28%	50%
Now	0%	109	137	145	154	163	172	277	137	179	192	206	222	237	449
	-5%	213	246	256	265	275	285	392	217	263	277	292	308	324	528
	-10%	349	373	380	387	394	402	493	391	440	454	469	486	502	709
	-15%	530	539	542	546	550	554	615	677	714	726	738	752	766	947
	-20%	736	733	733	733	733	733	759	1,084	1,099	1,104	1,110	1,118	1,126	1,253
	-25%	923	921	920	920	919	918	918	1,559	1,561	1,562	1,563	1,565	1,567	1,629
6 months	0%	66	93	100	112	121	128	241	62	101	112	125	140	155	356
	-5%	152	194	202	214	228	238	352	126	175	190	205	221	238	442
	-10%	298	330	338	347	352	365	458	287	344	359	376	394	412	624
	-15%	518	522	525	529	531	535	591	598	635	647	659	674	688	871
	-20%	746	739	734	737	731	731	746	1,049	1,056	1,060	1,064	1,070	1,076	1,193
	-25%	926	923	923	922	922	920	915	1,541	1,541	1,541	1,541	1,542	1,543	1,589
12 months	0%	12	15	8	18	20	26	38	2	2	2	2	2	2	2
	-5%	24	27	28	38	37	33	63	2	2	2	2	2	2	6
	-10%	146	164	168	169	174	180	219	33	49	53	57	62	66	111
	-15%	564	564	564	567	564	569	558	513	513	513	513	513	513	514
	-20%	770	769	773	771	775	776	780	1,012	1,012	1,012	1,012	1,012	1,012	1,012
	-25%	926	926	929	927	929	927	944	1,512	1,512	1,512	1,512	1,512	1,512	1,512

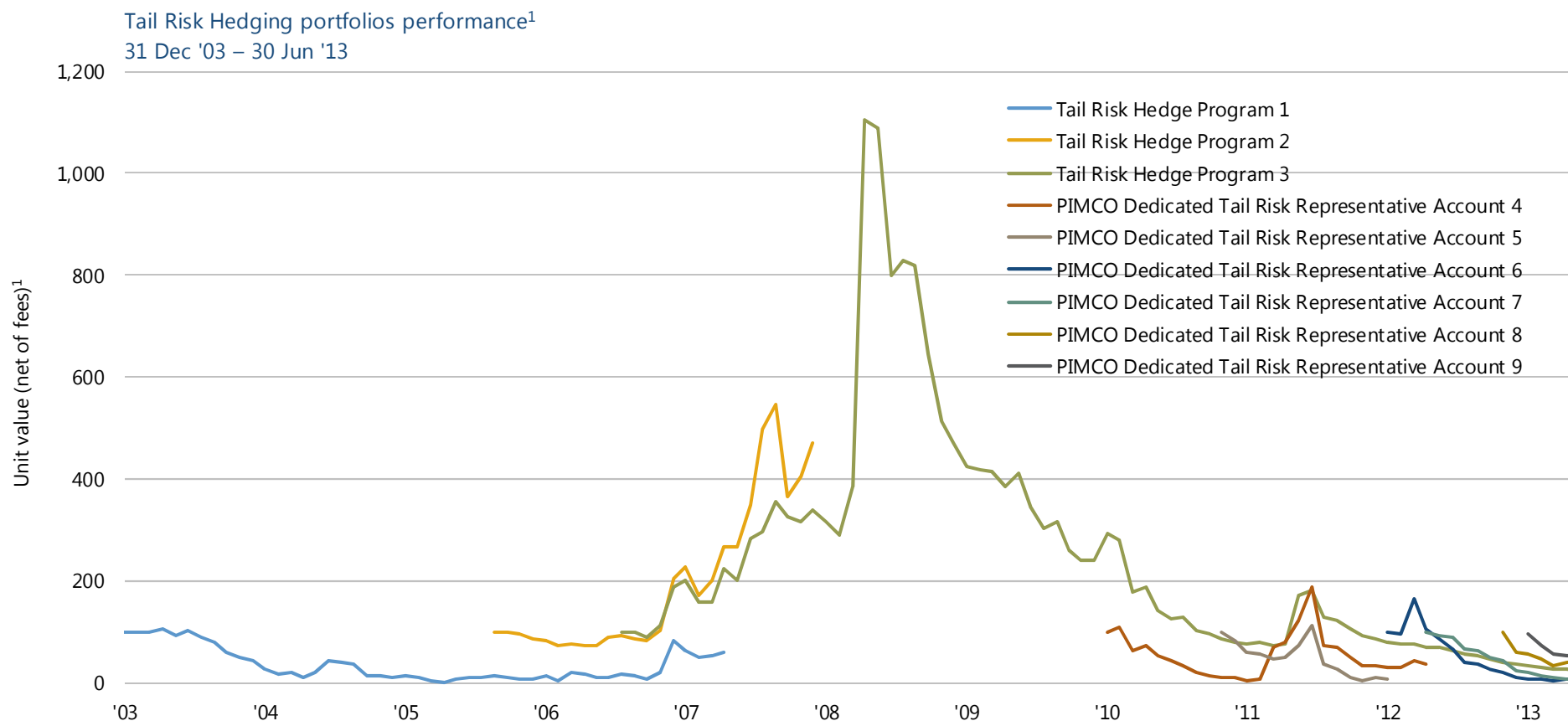
As of 22 July 2013

SOURCE: PIMCO

Hypothetical example for illustrative purposes only.

- ¹ The scenarios are based on expected moves. In this analysis PIMCO has outlined hypothetical event scenarios which, in theory, would impact the model portfolio illustrated in this analysis. In each scenario we evaluate various risk factors and apply specific hypothetical market shocks to each. We then multiply the impact of each shock by the risk factor exposure in each portfolio. This allows us to model the hypothetical performance of the portfolio for each scenario. No representation is being made that any one of these scenarios are likely to occur or that any portfolio is likely to achieve profits, losses, or results similar to those shown.
- ² The model tail risk strategy includes a mix of direct and indirect hedges (purchasing various derivatives: equity, currency, and credit). The model direct hedge benchmark is based on purchasing S&P 500 Index. The model direct hedge benchmark is based on purchasing S&P 500 Index. Please refer to the "Representative Tail Hedge Portfolio- model and cost budget" page for additional benchmark and premium information.
- Refer to Appendix for additional hypothetical example, investment strategy and risk information.

How PIMCO Tail Risk Hedge portfolios have performed



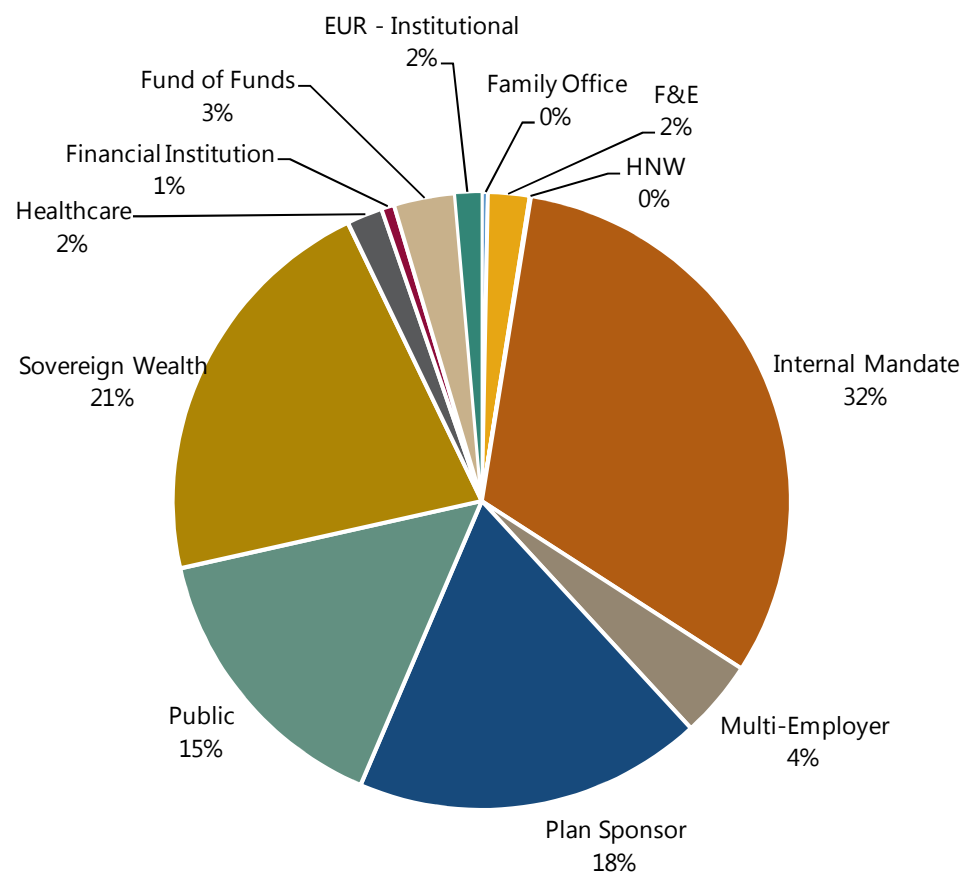
SOURCE: PIMCO, Bloomberg Financial Markets

¹ Until Value is based on net of fees basis. The portfolios shown represent all of the tail risk mandates that have been managed by PIMCO from December 2003 to March 2013. Each portfolio is a separately managed tail risk mandate that seeks to provide returns during periods of severe market stress or "tail events." The Dedicated Tail Risk Representative Account 4 inception date was 8 June 2010, Dedicated Tail Risk Representative Account 5 inception date was 11 March 2011. Dedicated Tail Risk Representative Account 6 inception date was 30 March 2012. Dedicated Tail Risk Representative Account 7 inception date was 30 June 2012. Dedicated Tail Risk Representative Account 8 inception date was 14 December 2012. Dedicated Tail Risk Representative Account 9 inception date was 22 February 2013

The representative account information presented is provided as supplemental information to the PIMCO Tail Risk Hedging Composite performance presentation included in the Appendix. Refer to Appendix for additional performance and fee, representative account, and risk information.

PIMCO's dedicated tail hedging mandates

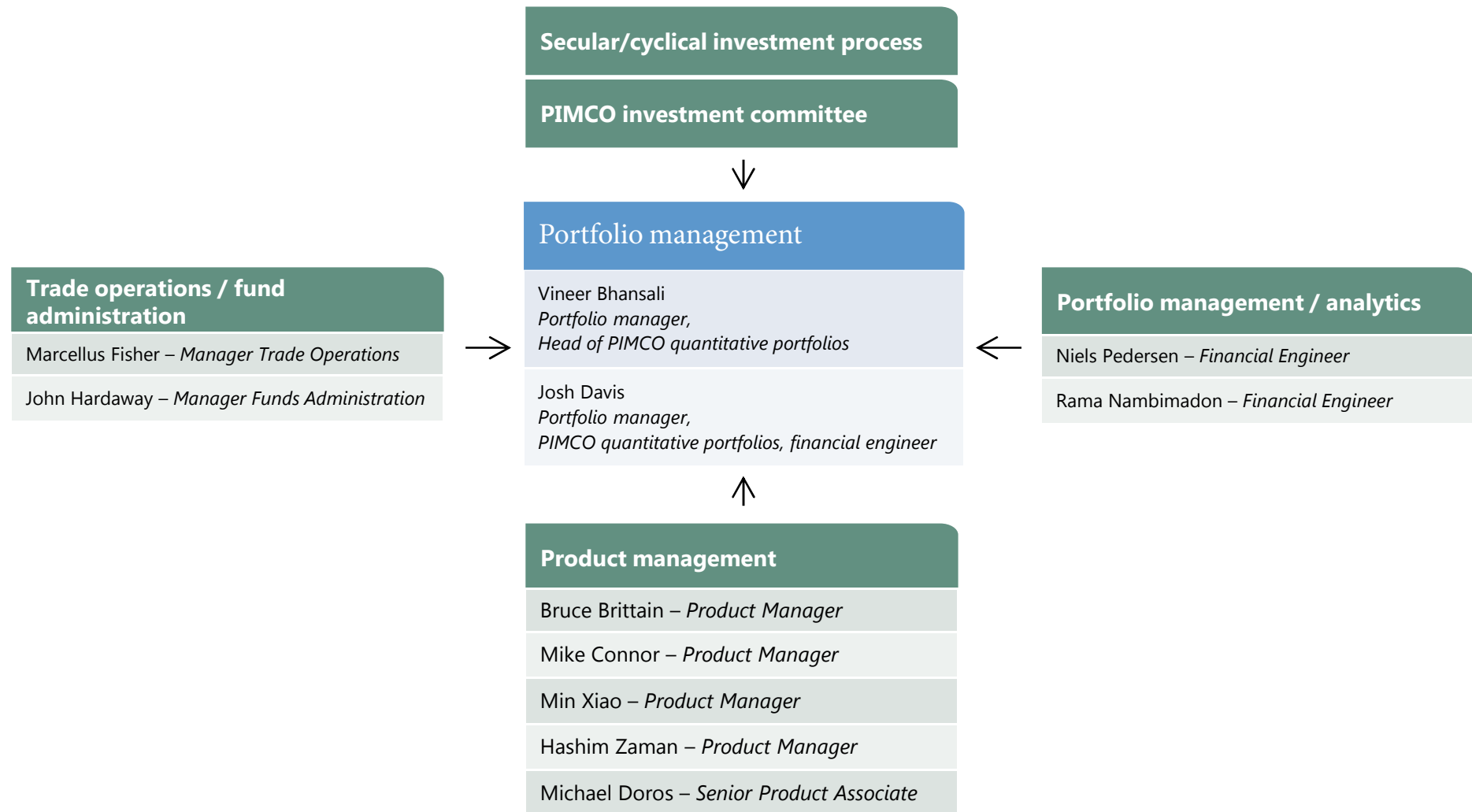
PIMCO currently manages \$46.9B in tail risk hedging mandates for a variety of investors



As of 30 June 2013
Allocation may not equal 100% due to rounding
Refer to Appendix for additional investment strategy and risk information.

Additional information

Portfolio management effort draws on firm-wide resources



As of 30 June 2013

The PIMCO hedging process

STEP 1

Identify portfolio risks and hedge level

Quantify portfolio risk exposures in normal and stress environments

Review the mandated hedge objective and list of suitable hedge instruments

STEP 2

Scan options markets for suitable hedge instruments

Assess relative value in all the principal macro hedge markets

Screen for consistency with PIMCO's macro views

Historical events

- 2008 Financial Meltdown
- LTCM/Russian Default
- Dot Com Bubble
- Asian Financial Crisis
- Black Monday

Hypothetical Events

- 25% equity selloff
- 350 bps rise in interest rates
- 250 bps increase in spreads
- 15% depreciation of dollar

STEP 3

Implement hedge portfolio based on targeted hedge levels

Size positions given the reference portfolio's risk exposures and market conditions

Optimize execution with counterparties

Apply PIMCO's counterparty risk management protocols

Refer to Appendix for additional investment strategy and risk information

Tail risk instruments used in the hedge program

Equity index options

- Puts on S&P 500, FTSE, Eurostoxx etc.
- VIX index

Interest rate related options

- Receiver swaptions, payer swaptions, Eurodollar options
- Options on Gilt, Bund, Treasury

Credit related securities (option-like)

- iTraxx or CDX indices and index tranches
- Sovereign CDS
- Single name credit default swaps

Currency related options

- Single name: USD/JPY, AUD/JPY, BRL/USD, etc.
- Forward volatility agreements

Commodity related options

- Precious metals, oil, metals, inflation swaps

Refer to Appendix for additional index, investment strategy and risk information.

PIMCO tail-risk hedging programs: Definitions

- Tail-risk hedging program
 - An actively managed portfolio of option positions (an investment hedge portfolio) designed to mitigate losses stemming from portfolio investment risks in a reference investment portfolio over an investment hedge horizon, with a specific attachment point and a specified expense level
- Reference investment portfolio
 - The client's portfolio of publicly listed, liquid stocks and bonds and its positions in illiquid private vehicles including private equity, venture capital, real estate and hedge funds
- Portfolio investment risks
 - Dominant portfolio investment risks are quantified as investment risk factors which can include broad equity, foreign exchange, interest rate duration, and credit spread. During periods of volatility, policy and liquidity factors can be important. For purposes of a tail-risk hedging mandate, client and manager agree on measures of portfolio investment risks. These may be based on estimates derived by PIMCO, the client, a third party or any combination of the three.
- Investment hedge horizon
 - Typically six months to five years, usually one year. The hedge horizon is agreed in discussions between PIMCO and client and may change during the course of the mandate.
- Attachment point
 - The targeted maximum loss at the investment hedge horizon of the combined reference investment portfolio and the investment hedge portfolio. Not a guaranteed number, the loss threshold should be considered an investment objective.

PIMCO tail-risk hedging programs: Definitions

- Expense (cost) level
 - The cost of a tail-risk hedging program is a periodic expense, expressed as a percentage of the reference investment portfolio, for example, 1.2% per annum. Expense levels are determined at the outset of the Tail-risk hedging program but can vary over time either because market conditions change or because the client chooses to alter the hedge horizon or the attachment point
- Tail-risk hedge portfolio
 - A portfolio of long options whose terms to maturity, strike levels and underlying “factors” are chosen to achieve the tail-risk hedging program’s investment objectives of limiting losses beyond the attachment point
- Active management
 - In a tail-risk hedging context, PIMCO will actively manage the investment hedge portfolio by: choosing to alter the mix of direct and indirect hedges, choosing to execute hedges that do not match the exact maturity of the investment hedging horizon and by liquidating hedges prior to expiration in order to take advantage of, for example, spikes in the level of implied price volatility in the markets for options
- Direct and indirect hedges
 - Direct hedges are options contracts whose values are driven by investment risk factors that are explicit risks in the reference investment portfolio. Indirect hedges are options contracts whose values are driven by investment risk factors that are not explicit risks in the investment portfolio or whose size is larger than necessary to directly hedge an explicit risk.
- Basis risk
 - The risk that the value of the tail-risk hedge portfolio differs from the value of a direct hedge
- Risk factor
 - The basic elements of risk in investment portfolios. Equity risk factors include “country,” “industry,” “size,” and “momentum.” Fixed income risk factors include “duration” (exposure to the level of interest rates), “curve (exposure to changes in the slope of the yield curve),” “investment grade credit spread,” “emerging market spread.”

Appendix

PERFORMANCE AND FEE

Past performance is not a guarantee or a reliable indicator of future results. Certain performance figures do not reflect the deduction of investment advisory fees (described in Part II of PIMCO's Form ADV) in the case of both separate investment accounts and mutual funds; but they do reflect commissions, other expenses (except custody), and reinvestment of earnings. Such fees that a client may incur in the management of their investment advisory account may reduce the client's return. For example, over a five-year period, annual advisory fees of 0.425% would reduce compounding at 10% annually from 61.05% before fees to 57.96% after fees. The "net of fees" performance figures reflect the deduction of actual investment advisory fees but do not reflect the deduction of custodial fees. All periods longer than one year are annualized. Separate account clients may elect to include PIMCO sector funds in their portfolio; sector funds may be subject to additional terms and fees. For a copy of net of fees performance, unless included otherwise, please contact your PIMCO representative.

CHART

Performance results for certain charts and graphs may be limited by date ranges specified on those charts and graphs; different time periods may produce different results.

HYPOTHETICAL EXAMPLE

The tail risk hedging programs contains hypothetical results based on a Monte Carlo simulation. No representation is being made that any account, product, or strategy will or is likely to achieve profits, losses, or results similar to those shown.

Hypothetical or simulated performance results have several inherent limitations. Unlike an actual performance record, simulated results do not represent actual performance and are generally prepared with the benefit of hindsight. There are frequently sharp differences between simulated performance results and the actual results subsequently achieved by any particular account, product, or strategy. In addition, since trades have not actually been executed, simulated results cannot account for the impact of certain market risks such as lack of liquidity. There are numerous other factors related to the markets in general or the implementation of any specific investment strategy, which cannot be fully accounted for in the preparation of simulated results and all of which can adversely affect actual results. No guarantee is being made that the stated results will be achieved.

INVESTMENT STRATEGY

There is no guarantee that these investment strategies will work under all market conditions and each investor should evaluate their ability to invest for a long-term especially during periods of downturn in the market. No representation is being made that any account, product, or strategy will or is likely to achieve profits, losses, or results similar to those shown.

MODEL

The model contains the annual cost in basis points to an investor that chooses to directly hedge their equity beta at the notional value and at the attachment point. No guarantee is being made that the structure of other similar portfolios will remain the same or that similar results will be achieved.

Direct Hedge scenario is based on purchasing the actual S&P 500 puts.

NON-TRADITIONAL PORTFOLIO INDEX SOURCES

Domestic Equities: S&P 500; Global Equities: MSCI EAFE Net Dividend Index in USD; EM Equities: MSCI Emerging Markets Index; Domestic (IG/HY) Bonds (IG bonds, HY bonds): 7.5% Investment Grade Bonds - Barclays Capital US Aggregate Index, 0.72% High Yield Bonds - Barclays Capital US High Yield Index; Global Bonds: Barclays Capital Global Aggregate Index; EM Bonds: JP Morgan EMBI Global Index; Real Estate: NCREIF Property Index; Hedge Funds: HFRI Fund Weighted Composite Index; Private Equity: Cambridge Associates LLC U.S. Private Equity Index®; Venture Capital: Cambridge Associates LLC U.S. Venture Capital Index®; Energy and Natural Resources (Energy, Timber, Commodities, Managed Futures): 4.2% Energy - Dow Jones UBS Commodity Energy Index, 2.01% Timber - NCREIF Timberland Index, 1% Commodities - Dow Jones UBS Commodity Index, 1% Managed Futures: DJCS Managed Futures Index; Distressed Debt: HFRI ED: Distressed/Restructuring Index; Cash: Citigroup 3 Month US T-Bill Index.

PORTFOLIO ANALYSIS

The portfolio analysis is based on 2012 NACUBO-Commonfund Study of Endowments and a model portfolio consisting of direct and indirect hedges. No representation is being made that the structure of the average portfolio or any account will remain the same or that similar returns will be achieved. Results shown may not be attained and should not be construed as the only possibilities that exist. Different weightings in the asset allocation illustration will produce different results. Actual results will vary and are subject to change with market conditions. There is no guarantee that results will be achieved. No fees or expenses were included in the estimated results and distribution. The scenarios assume a set of assumptions that may, individually or collectively, not develop over time. The analysis reflected in this information is based upon data at time of analysis. Forecasts, estimates, and certain information contained herein are based upon proprietary research and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product.

Appendix

PIMCO routinely reviews, modifies, and adds risk factors to its proprietary models. Due to the dynamic nature of factors affecting markets, there is no guarantee that simulations will capture all relevant risk factors or that the implementation of any resulting solutions will protect against loss. All investments contain risk and may lose value. Simulated risk analysis contains inherent limitations and is generally prepared with the benefit of hindsight. Realized losses may be larger than predicted by a given model due to additional factors that cannot be accurately forecasted or incorporated into a model based on historical or assumed data.

REPRESENTATIVE ACCOUNT

The Tail Risk accounts I, II, and III represent all of the tail risk mandates that were managed from December 2003 through the present date. The Tail Risk dedicated representative accounts represent the largest market values in the composite. No guarantee is being made that the structure or actual account holdings of any account will be the same or that similar returns will be achieved. PIMCO may or may not own the securities referenced and, if such securities are owned, no representation is being made that such securities will continue to be held.

RISK

Derivatives may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested. The strategy seeks to hedge against tail events and achieve its investment objective by entering into financial derivatives (including, options, swaps and other derivative instruments) that are expected to increase in value during the occurrence of tail events. If a tail event occurs, the strategy may lose any delivery of instruments or other collateral pledged as security due to the potential systemic import of the tail event adversely affecting the portfolio positions. The strategy risks the loss of all or a portion of the value of the tail event instruments it may purchase or the derivative contracts it may enter into, even if a period of severe market stress occurs during the term of such securities. A tail event is unpredictable; therefore, investments in instruments tied to the occurrence of a tail event are speculative. Suitable derivative transactions may not be available in all circumstances. The use of these strategies involves certain special risks, including a possible imperfect correlation, or even no correlation, between price movements of derivative instruments and price movements of related investments. The strategy may suffer losses due to the possible inability of the strategy to purchase or sell the security at a time that otherwise would be favorable or the possible need to sell the security at a disadvantageous time because the strategy is required to maintain collateral or offsetting positions in connection with transactions in derivative instruments, and the possible inability of the strategy to close out or to liquidate its derivatives positions. In addition, the strategy's use of such instruments may cause the strategy to realize higher amounts of short-term capital gains (generally taxed at ordinary income tax rates) than if it had not used such instruments. If the strategy gains exposure to an asset class using derivative instruments backed by a collateral portfolio of fixed income instruments, changes in the value of the fixed income instruments may result in greater or lesser exposure to that asset class than would have resulted from a direct investment in securities comprising that asset class. Derivatives are currently the subject of regulatory and statutory proposals, both in the U.S. and internationally. There can be no assurance that the enactment of rules or regulations in the future will not have an adverse effect on the strategy's ability to carry out its investment strategy or to do so at a reasonable cost.

UPSIDE/DOWNSIDE VOLATILITY

Downside volatility is calculated as the standard deviation of returns below the mean of the distribution. Upside volatility is calculated as the standard deviation of returns above the mean of the distribution.

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Appendix

INDEX DESCRIPTION

Barclays Global Aggregate (USD Unhedged) Index provides a broad-based measure of the global investment-grade fixed income markets. The three major components of this index are the U.S. Aggregate, the Pan-European Aggregate, and the Asian-Pacific Aggregate Indices. The index also includes Eurodollar and Euro-Yen corporate bonds, Canadian Government securities, and USD investment grade 144A securities.

Barclays U.S. Aggregate Index represents securities that are SEC-registered, taxable, and dollar denominated. The index covers the U.S. investment grade fixed rate bond market, with index components for government and corporate securities, mortgage pass-through securities, and asset-backed securities. These major sectors are subdivided into more specific indices that are calculated and reported on a regular basis.

The Barclays High Yield Index is an unmanaged market-weighted index including only SEC registered and 144(a) securities with fixed (non-variable) coupons. All bonds must have an outstanding principal of \$100 million or greater, a remaining maturity of at least one year, a rating of below investment grade and a U.S. Dollar denomination.

The Cambridge Associates U.S. Private Equity Index is based on returns data representing nearly two-thirds of leveraged buyout, subordinated debt, and special-situations partnerships since 1986.

The Cambridge Associates LLC U.S. Venture Capital Index is based on returns data compiled on funds representing over 80% of the total dollars raised by U.S. venture capital managers between 1981 and 2001. Cambridge Associates LLC calculates the pooled net time-weighted return by quarter from March 31, 1981 through the most recent quarter. The pooled means represent the time-weighted rates of return calculated on the aggregate of all cash flows and market values as reported by the General Partners to Cambridge Associates LLC in their quarterly and annual audited financial reports. Net returns exclude all management fees, expenses and performance fees that take the form of a carried interest.

The Citigroup 3-Month Treasury Bill Index is an unmanaged index representing monthly return equivalents of yield averages of the last 3 month Treasury Bill issues.

The HFRI Fund Weighted Composite Index is comprised of over 2000 domestic and offshore constituent funds. All funds report assets in USD and report net of fees returns on a monthly basis. There is no Fund of Funds included in the index and each has at least \$50 million under management or have been actively trading for at least twelve months.

The Dow Jones UBS Commodity Total Return Index is an unmanaged index composed of futures contracts on 20 physical commodities. The index is designed to be a highly liquid and diversified benchmark for commodities as an asset class. Prior to May 7, 2009, this index was known as the Dow Jones AIG Commodity Total Return Index.

The Dow Jones Credit Suisse Managed Futures Index is an unmanaged asset-weighted hedge fund index comprised of listed financial and commodity futures markets and currency markets around the world. The managers are usually referred to as Commodity Trading Advisors, or CTA's. Trading disciplines are generally systematic or discretionary. Systematic traders tend to use price and market specific information (often technical) to make trading decisions, which discretionary managers use a judgmental approach.

The HRFI Distressed/Restructuring Index is an unmanaged index that consists of corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings. Managers are typically actively involved with the management of these companies, frequently involved on creditors' committees in negotiating the exchange of securities for alternative obligations, either swaps of debt, equity or hybrid securities. Managers employ fundamental credit processes focused on valuation and asset coverage of securities of distressed firms, in most cases portfolio exposures are concentrated in instruments which are publicly traded, in some cases actively and in others under reduced liquidity but in general for which a reasonable public market exists. In contrast to Special Situations, Distressed Strategies employ primarily debt (greater than 60%) but also may maintain related equity exposure.

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The JPMorgan Emerging Markets Bond Index Global is an unmanaged index which tracks the total return of U.S.-dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady Bonds, loans, Eurobonds, and local market instruments.

MSCI EAFE Net Dividend Index (USD Unhedged) is an unmanaged index of issuers in countries of Europe, Australia, and the Far East represented in U.S. Dollars on an unhedged basis. The index does not reflect deductions for fees, expenses or taxes.

The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. The MSCI Emerging Markets Index consists of the following 21 emerging market country indices: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Thailand, and Turkey.

The NCREIF (National Council of Real Estate Investment Fiduciaries) Property Index is a quarterly time series composite total rate of return measure of performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only.

The CBOE Volatility Index® (VIX®) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices.

It is not possible to invest directly in an unmanaged index.

PIMCO TAIL RISK HEDGING COMPOSITE

	COMPOSITE RETURN (%) BEFORE FEES	COMPOSITE RETURN (%) AFTER FEES	BENCHMARK ^a RETURN (%)	COMPOSITE DISPERSION ^b BEFORE FEES	COMPOSITE 3-YR STD DEV ^c BEFORE FEES	BENCHMARK 3-YR STD DEV ^c	NUMBER OF PORTFOLIOS	TOTAL ASSETS (USD) MILLIONS	PERCENTAGE OF FIRM ASSETS	TAIL RISK HEDGING FEE SCHEDULE:
Jul-Dec 06	-24.31	-26.59	N/A	N/A	N/A	N/A	Five or Fewer	24	<1	On All Assets 0.150%
2007	244.08	233.96	N/A	N/A	N/A	N/A	Five or Fewer	143	<1	
2008	176.81	173.26	N/A	N/A	N/A	N/A	Five or Fewer	135	<1	
2009	-35.90	-36.45	N/A	N/A	79.82	N/A	Five or Fewer	81	<1	
2010	-64.75	-64.79	N/A	N/A	63.48	N/A	Five or Fewer	23	<1	
2011	-63.69	-64.39	N/A	N/A	63.27	N/A	9	111	<1	
2012	-92.22	-92.89	N/A	14.78	78.86	N/A	18	85	<1	

a None

b Equal-weighted standard deviation of annual returns for all portfolios in the composite for the full year. Not statistically meaningful for periods shorter than a year or for years in which five or fewer portfolios were included for the full year

c The three-year annualized ex-post standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period.

Pacific Investment Management Company LLC (PIMCO) is an SEC registered investment adviser that provides global investment solutions to institutions, individuals, and government entities worldwide. For GIPS compliance purposes, PIMCO has been defined to include its investment management activities as well as those of its subsidiaries, which include PIMCO Australia Pty Ltd, PIMCO Canada Corp., PIMCO Europe Ltd, PIMCO Japan Ltd, PIMCO Asia Pte Ltd, and PIMCO Asia Limited, as well as those of its affiliate PIMCO Deutschland GmbH. In March 2012, the firm was redefined to include assets managed on behalf of Allianz's affiliated companies. In addition, in January 2010, the firm definition was expanded to include fixed income assets managed in collaboration with Allianz Global Investors using the PIMCO investment process. Prior to 2010, country-specific limitations restricted the full implementation of the PIMCO investment process for these assets. A complete list of composite descriptions is available upon request.

PIMCO claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. PIMCO has been independently verified for the period January 1987 through December 2012 by PricewaterhouseCoopers LLP. The verification report is available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.

The Tail Risk Hedging Composite includes all discretionary, fee-paying, USD-based, Tail Risk Hedging accounts. The Tail Risk Hedging strategy aims to protect against extreme market moves by purchasing protection against a market meltdown. The composite creation date is May 2010.

No performance benchmark is assigned to the composite. The objective of the Tail Risk Hedging strategy is to hedge risk, rather than to exceed a relative performance target.

Valuations are computed and performance is reported in U.S. dollars. Returns are presented gross and net of management fees and include the reinvestment of all income. Net results reflect the deduction of actual management fees and, in some instances, custodial and administrative fees. When applicable, composite performance is net of any actual withholding tax paid and not reclaimable. Index returns are gross of withholding tax. Policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.

Fixed income derivatives are frequently used in a non-leveraged manner as substitutes for physical securities. Futures, options, and swaps may be used to gain, hedge or restructure exposure to interest rates, volatility, spreads, foreign bond markets and currencies within the parameters allowed by individual portfolio guidelines. Use of these instruments may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Investing in derivatives could lose more than the amount invested. Diversification does not ensure against loss. The Tail Risk Hedging Strategy is available only to U.S. investors that are "accredited investors" as defined under the U.S. Securities Act of 1933, as amended, and "qualified purchasers" as defined in the U.S. Investment Company Act of 1940, as amended.

Past performance is not a guarantee or a reliable indicator of future results.