



Implementation of a Protection Program: One Year On

NOTE:

*'TRIP' is the acronym
for our Endowment*

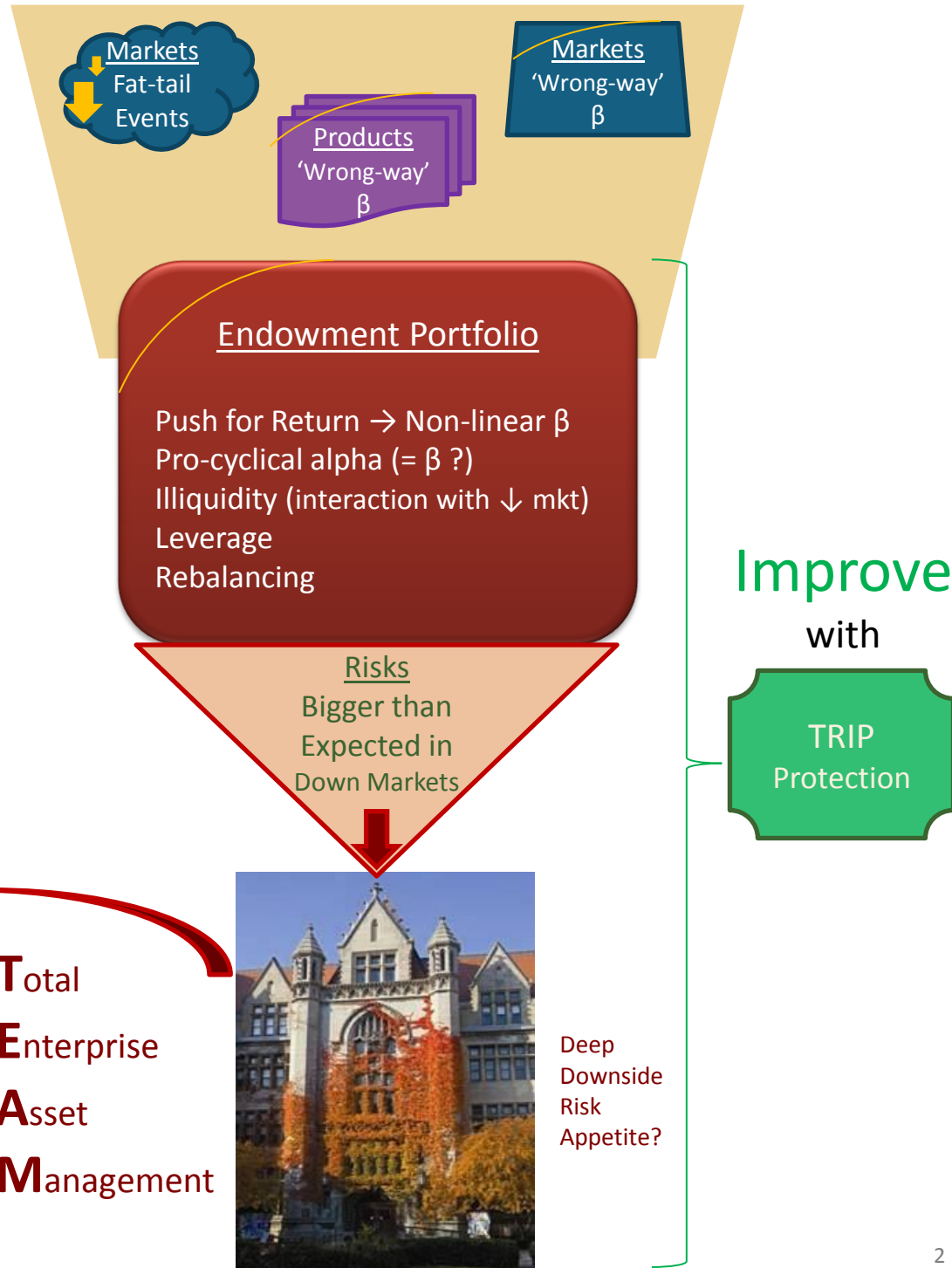
TRIP Protection @ The University of Chicago

*Presentation for
Global Volatility Summit 2013*

Mike Edleson
Chief Risk Officer

February 25, 2013

Last Year's Presentation on 1 Page: The Case for TRIP Protection



Wrong-Way (Negative Convexity) Risk in Endowments

The concept of 'Wrong-way' risk in a portfolio is shown at the right

- $\beta \uparrow$ as Markets \downarrow = Lose more -\$\$ than expect

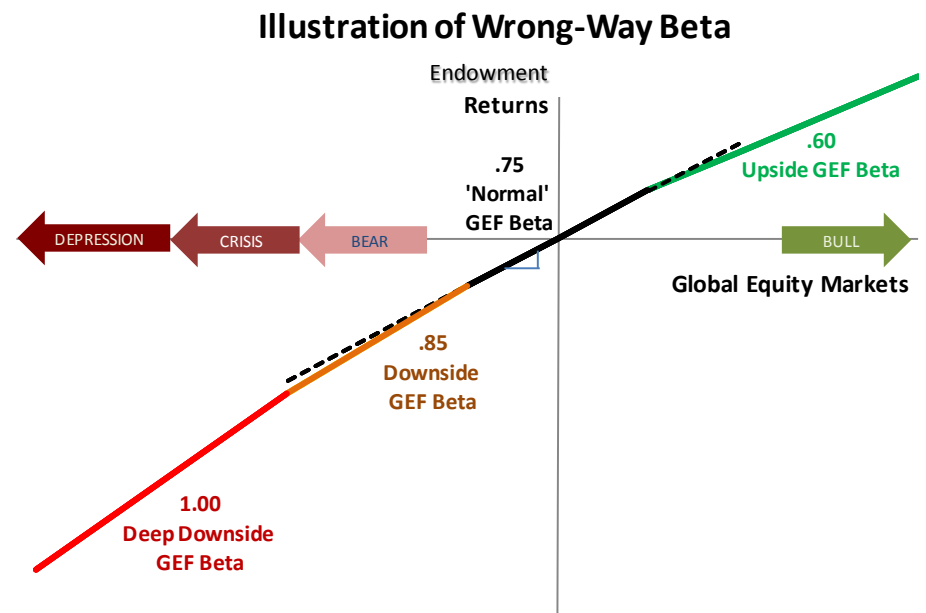
The natural tendency for an endowment is to produce wrong-way risk or negatively-convex returns:

- Volatility & correlation spikes during market crises
- Natural 'carry' strategies in many hedge funds
- Natural risk profile of credit investments
- Interaction effect with illiquidity
- Beta of our 'alpha'
- Interaction effect with leverage
- Rebalancing as being short gamma
- 'Carry' fees to GPs for alternatives creates kinked risk profile

Negative convexity is evident in actual endowment returns

$\beta \sim 0.5$ actual example:

- β is 75% greater in down markets than up.
Lose -\$\$ at accelerated pace
- Like being SHORT sizable put option on market
(yields 'premium' which is about $\frac{1}{3}$ of what we call 'alpha')



*Looking at the Beta of Returns in UP and DOWN Markets...
Typical Endowment Return is RISKIER to the downside.*



Risk Drivers of Our Investment Returns

Primary



RISK DRIVER	Governance Control ?
Global Equity Risk	β target 0.75 (0.7 – 0.8 range)

Secondary



Return Appetite	Target established consistent with risk controls
Liquidity Risk (Illiq. Premium)	Cut back to 35% 'Illiquid'
Leverage	No Explicit Leverage
Short Optionality Premium (wrong-way risk)	Offset with Volatility Allocation

Tertiary



Value Premium	measure & monitor
Interest Rate Risk	measure & monitor
Small Cap Premium	measure & monitor
EM vs. Developed (correlated w/materials/resources)	measure & monitor



Protection Program STEPS — ‘Preface’ Phase

➤ Meet & Talk (+ *go to GVS*)

Protection managers & sell-side

➤ Risk Framework — Risk Drivers

➤ Develop Case

➤ Socialize Staff & Board

➤ Assess Appetite

➤ Identify Program Goals

➤ Governance

(part of investment strategy, vs.

tempting alternative of hiding & doing opportunistically)

We are not suggesting a radical fix that will eliminate losses. This is a practical, partial hedge that represents a focused, balanced, cost-effective solution to improve our return profile when the impact is largest.

ALL this precedes even *thinking about* implementation!



Allocation and Cost

The Program & Costs

- ✓ Equity = main focus (primary risk driver)
- ✓ Try to 'linear-ize' wrong-way β profile

Improve the return profile of TRIP by partially protecting its downside with:

- a 2% strategic allocation to volatility/ option products w/positive convexity,
- including a max 0.65% premium budget,
- and an expected long-run draw of -12-20 bps on average endowment return
- but contributing several hundred bps to TRIP return in an extreme tail event

	(as a % of all TRIP)	Comment
TRIP (Endowment)	100%	
TRIP Protection	2%	0-4% strategic allocation
Budget Max Loss	– 65 bps	Capitalize 3x max bleed
Long-term Loss (standalone)	– 25-40 bps	As some years don't lose max loss, some gain
w/Alpha, net of fees (standalone)	– 20-30 bps	3-5 bp fee drag, but manager skill vs. crowded passive protection
...Portfolio Impact (in combination with TRIP returns)	– 12-20 bps	Compound return improved by negatively-correlated, convex return component



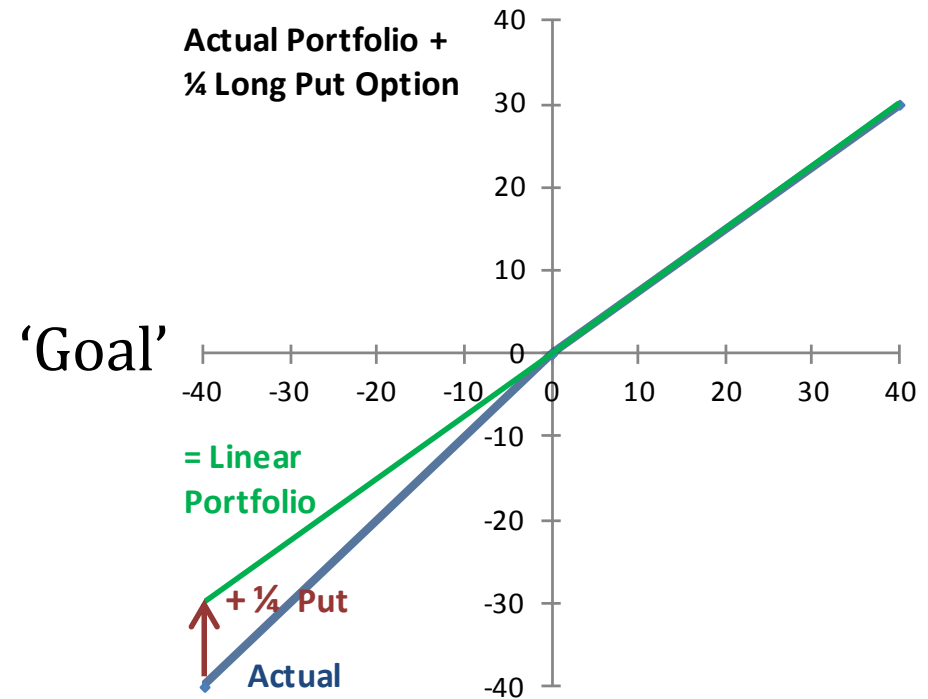
Strategies and Criteria

TRIP needs a small allocation with the following properties:

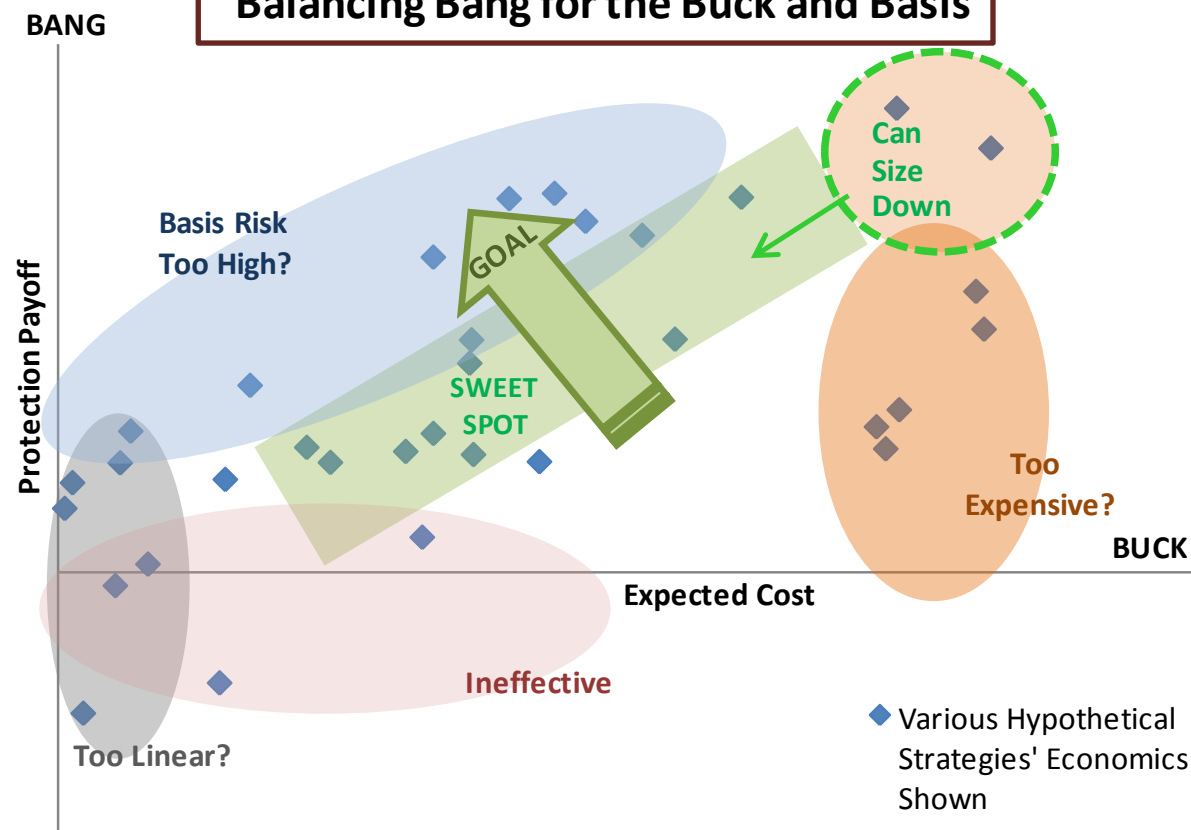
- Positive Convexity
- Performs well during market downturns
- Protects TRIP return profile

» What are the Criteria we want in a Protection Program?

- Philosophy (manager truly 'gets' what we're trying to do)
- Significant Performance in extreme downturn
- Performance in short-term shocks ?
- Liquidity of structure & strategy / ability to monetize
- Execution
- Manager alpha
- Asset class fit & mix (primary focus equity)
- Transparency & control
- Liquidity of traded products
- (-) short optionality/'wrong way' higher order risks
- (-) Reinvestment / roll risk
- (-) CP risk
- (-) Basis risk (balance with cost/alpha)
- (-) Cost (Fees, Bleed, Other)
- + ROBUST



Balancing Bang for the Buck and Basis



Protection Program STEPS — ‘Strategy’ Phase

➤ Find your Protection Philosophy

The Big Questions:

- ✓ What types of losses to protect?
 - ❖ Crises only? ...Market corrections?
 - ❖ ‘Attachment point’ & Timing
- ✓ Cost vs. Basis Risk? ...Active vs. Passive?
- ✓ Strategic vs. Opportunistic?
- ✓ Pure Protection vs. Rel Val?
 - ❖ What are you willing to sell to reduce program cost?
- ✓ How do you balance your competing criteria?

We are looking for:

- ✓ Focus on Convexity & Volatility
- ✓ Nearly all long; no hidden short optionality risks
- ✓ A mix of robust, cost-effective strategies
- ✓ Evaluating with the criteria on last slide

There are many strategy-types in Volatility & Protection space to choose from. Different managers specialize in different styles, and some optimize with a mix.

➤ Politics – (IC, boss) How Committed?

➤ Internal vs. External

➤ ‘Sizing’ →

➤ What mix of Greeks do you want?

➤ Meet with Everybody (refining above points)



Sizing (example):

Endowment	1000	} You
Protection Capital	20	
Loss Budget	6-7	} Manager
Max Loss	9	
Realistic Loss	6	
Bleed	4	
Delta	-35	
Notional	210	

*Gotta decide what you’re comfortable with,
Find managers who ‘get it,’
You monitor & control it.*



44 Managers Evaluated! (Five are shown here:)	Manager A	Manager B (hired)	Manager C	Manager D (short-listed)	Manager E
Advisory Fund Service	★ ★	★	★ ★	★ ★	★
Experience/Genesis	Risk Model & Advisory	Vol Trading Expertise	Vol Trading / Fund	Organic FOHF Hedging	Former Multi-Strat Managers
Competence	Excellent	Excellent	?	Very Good	?
Philosophy/Focus	Not Aligned	Excellent	Moderate	Good	Moderate / Shotgun
Process/Sophistication	Good	Very Good	Good	Good	Fair -
Strategy: Type	Linear	Convex, Vol, Volgamma, Term	Convex, Vol, Opp	Convex	Any
Strategy: Other	Dynamic Global Macro	Dynamic	Some Rel Vol		
Asset Classes	Multi	Equity	US Equity	Equity/Multi	Multi
Infrastructure/Execution	Limited	Excellent	?		?
Transparency / Control	Full	Full	Limited	Full	Full
Liquidity	Near Daily	~ Weekly	Monthly?	Near Daily-Weekly	Weekly-Monthly
Payoff	Low	High	Med +	High	?
Cost (net of Alpha)	Very Low (None)	Med (Low)	Med (?)	Med (Med)	?
Fees	Low	Med	Extremely High	Low	Very Low

Implementation:
Evaluation

(Final slide on actual investments & returns was redacted)

THANK YOU

Mike Edleson
Chief Risk Officer
The University of Chicago

You've Earned a BREAK* !

Global Volatility Summit 2013

