

The Long and Short of it: Managing Risk Across the Treasury Curve

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Joe Benning, PhD
Chief Risk Officer, NYPC



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Risk and Uncertainty

Uncertainty

- We simply don't know....

Risk

- Probability of an adverse occurrence and the impact upon occurrence

The difference

- Risk is quantifiable



The NYPC Advantage

The Clearinghouse promotes capital efficiencies:

- New York Portfolio Clearing (NYPC) uses VaR based margining
- Designed to reflect true economic risk

Product Level Innovation

- Locked-in deliveries
- Fail-safe mechanism against trader fails-to-deliver
 - Can lead to enhanced liquidity and transparency for spot month trading & contract rolls

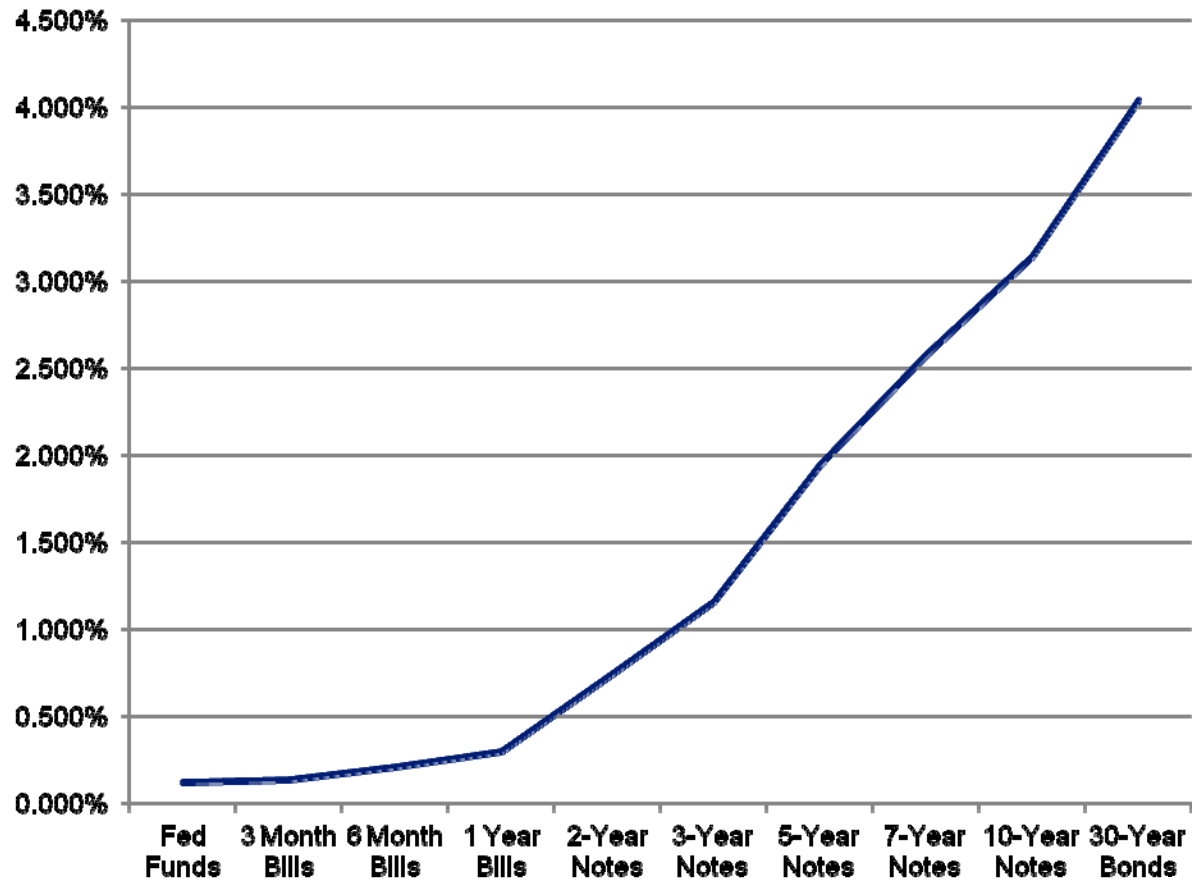
Treasury Contract Specs

Maturity	Notional	Delivery Basket	Delivery Cycle
2-Year	\$200M	1-Year, 9 months – 2-Years	March, June, September, December
5-Year	\$100M	4-Years, 2 months, - 5 years, 3 months	March, June, September, December
10-Year	\$100M	6.5 – 10 Years	March, June, September, December
30-Year	\$100m	15+ Years	March, June, September, December

Eurodollar Contract Specs

- Notional \$1,000,000 Deposits
- 3-month maturity
- Quoted in Index points
 - $100 - 98 = 2.00\%$
- 1 Basis point = \$25 per contract
- Cash settled against the BBA survey on the last trading day
- Last trading day = second London bank business day prior to the third Wednesday of the expiration month

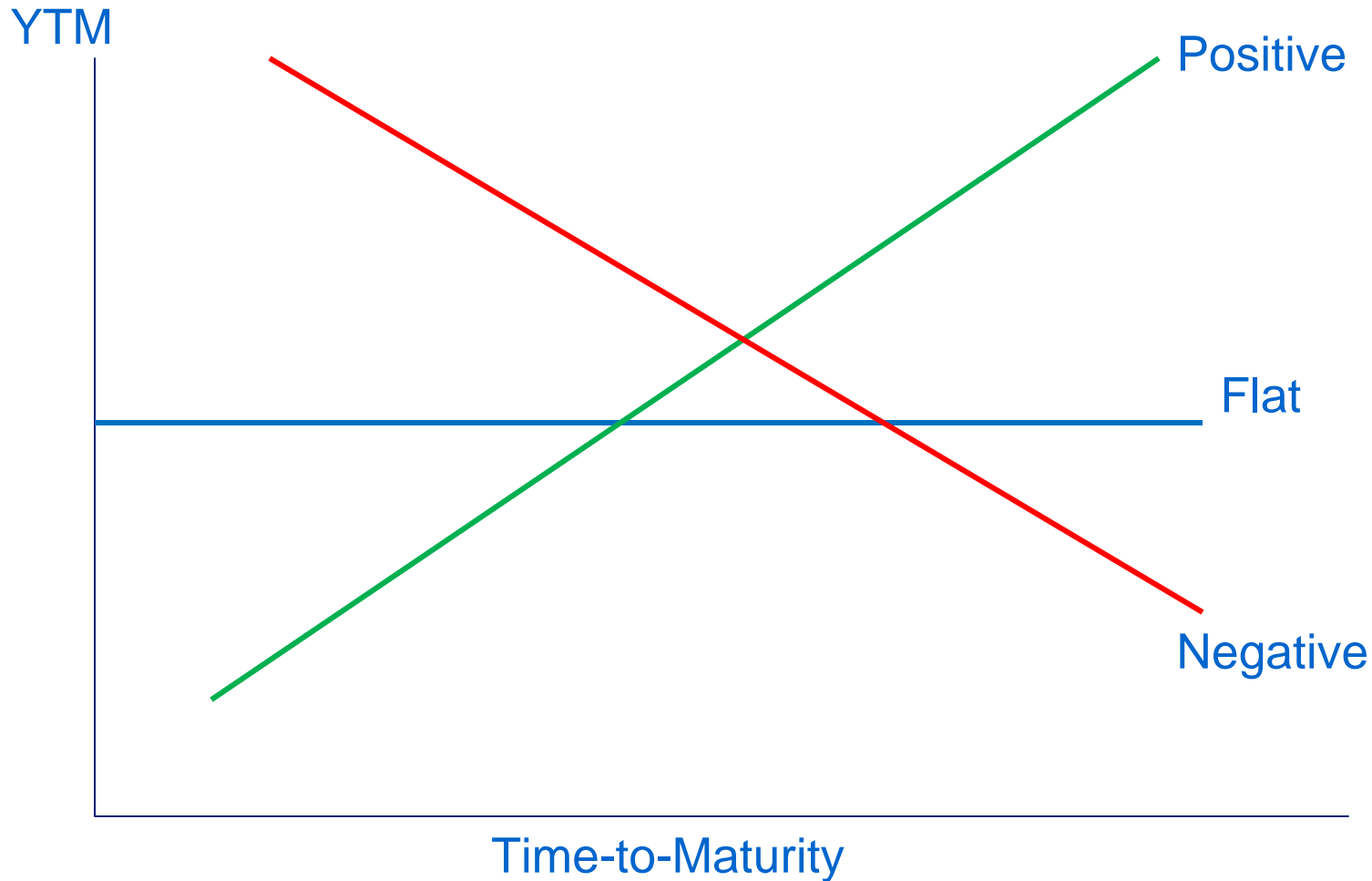
Risk, Reward & the Term Structure



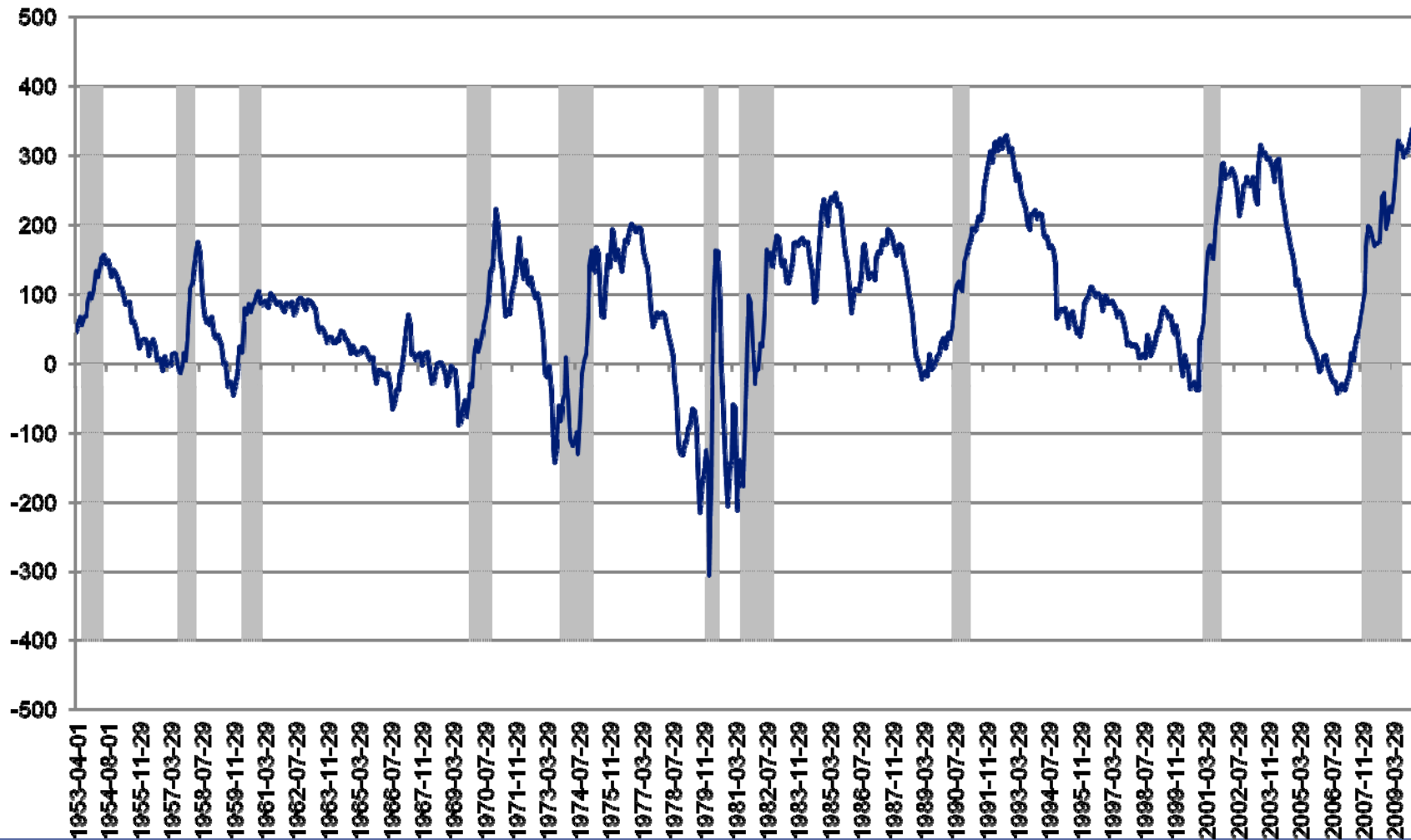
Suppose...

- You are long \$100 million cash 10-year notes
 - There is little inflation pressure evident
 - But the economy is in a cyclical upswing
- You wish to reduce or transform the nature of your interest rate risk
- Any Suggestions?

What Causes Shifts in the Curve?



The 2-year 10-year Spread History



Data Source: St Louis Fed



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Types of Curve Trades

Tactical

- Sector specific
- Often driven by short-term supply considerations

Structural / Strategic

- At turning points in Fed Policy
- Trend driven

Leverage / Risk Considerations

- Transaction Size
- The maturity distance between the long and short
- Note: These factors are captured by VaR

Two Rules for the Curve



Implementation

Decide on strategy type and risk parameters

Consider market dynamics

Calculate risk weights of the underlying

Convert cash risk weights to futures weights

Run a simulation

Execute

Example: Use Cash DV01s as Risk Weights

Coupon	Maturity	Yield	Price	DV01
2.125%	11/30/2014	1.81%	101.3593	
2.125%	11/30/2014	1.82%	101.3158	434.7932

Coupon	Maturity	Yield	Price	DV01
3.125%	4/30/2017	2.57%	103.5011	
3.125%	4/30/2017	2.58%	103.4367	643.3552

Hedge Ratio =
1.48

$$\frac{643}{435} = 1.48$$

Create a Matrix of Cash Hedge Ratios*

*This Matrix uses the current active issues as of May 2010

Issue	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year Bonds
2-Year Notes	1.00					
3-Year Notes	1.52	1.00				
5-Year Notes	2.47	1.62	1.00			
7-Year Notes	3.35	2.20	1.35	1.00		
10-Year Notes	4.51	2.96	1.82	1.35	1.00	
30-Year Bonds	9.38	6.16	3.79	2.80	2.08	1.00

Transition to Futures Risk Weights

Futures prices...

Are anchored by the Cheapest-to-Deliver security

Arbitrage trading keeps cash bonds and notes “in line” with each other

Calculate Futures Hedge Ratios using the CTD securities as a proxy for the futures contract

$$\text{Futures DV01} = \frac{\text{CTD DV01}}{\text{Conversion Factor}}$$

Example: Converting Cash DV01s to Futures DV01s for Trading TYU0 vs. FVU0.

10-Year

TYU0 CTD = 3.125% 4/30/17
DV01 = \$643
Conversion Factor = 0.8471
Futures DV01 = $\$643 / 0.8471 = \759

5-Year

FVU0 CTD = 2.125% 11/30/14
DV01 = \$435
Conversion Factor = 0.8590
Futures DV01 = $\$435 / 0.8590 = \506

Hedge Ratios

Cash Hedge Ratio = $\$643 / \$435 = 1.478$

Futures Hedge Ratio = $\$759 / \$506 = 1.500$

Trade Execution

- **Futures Version**
- Buy:
 - 150 FVU0
- Sell Short
 - 100 TYU0

Cash Version

Buy:

- \$14,780,000 Treasury 2 1/8% of November 2014

Sell Short

- \$10,000,000 Treasury 3 1/8% of April 2017

Run a Simulation to Test the Results!

Contract	Futures Px	Coupon	Maturity	Yield	Price	Basis
FVU0	117 8/32	2.125%	11/30/2014	1.82%	101.316	19/32
TYU0	121 1/32	3.125%	4/30/2017	2.57%	103.501	31/32

Contract	Futures Px	Coupon	Maturity	Yield	Price	Basis
FVU0	116 8/32	2.125%	11/30/2014	2.02%	100.451	19/32
TYU0	119 17/32	3.125%	4/30/2017	2.77%	102.223	31/32

Futures Hedge			Cash Hedge		
Long FVU0	150	-\$150,000	Long 5-Year	14,780	-\$127,866
Short TYU0	100	\$150,000	Short 10-Year	10,000	\$127,808
	P&L	\$0		P&L	-\$58

DV01 Risk Weights

- Can be used across the Treasury curve
- Can also be used with Eurodollars and the TED spread

Note:

- DV01s are dynamic so they have to be updated as market levels change
- Carry costs are built into futures contract prices

Value-at-Risk (VaR)

- Traders often use DV01s to risk-weight their trades
- For margin purposes New York Portfolio Clearing (NYPC) will use VaR to assess position risk
 - Risk calculations are based on historical market data—historical VaR
- VaR expresses risk in terms of a maximum expected loss, over a specified time period, with a defined confidence interval under normal market conditions

Summary

Futures contracts are efficient, low transaction cost instruments for executing yield curve and other trading strategies

Successfully managing risk depends (among other factors) on:

- The right strategy & implementation
- And getting the risk-weights right

Implicit DV01 weights are commonly used as futures risk-weights

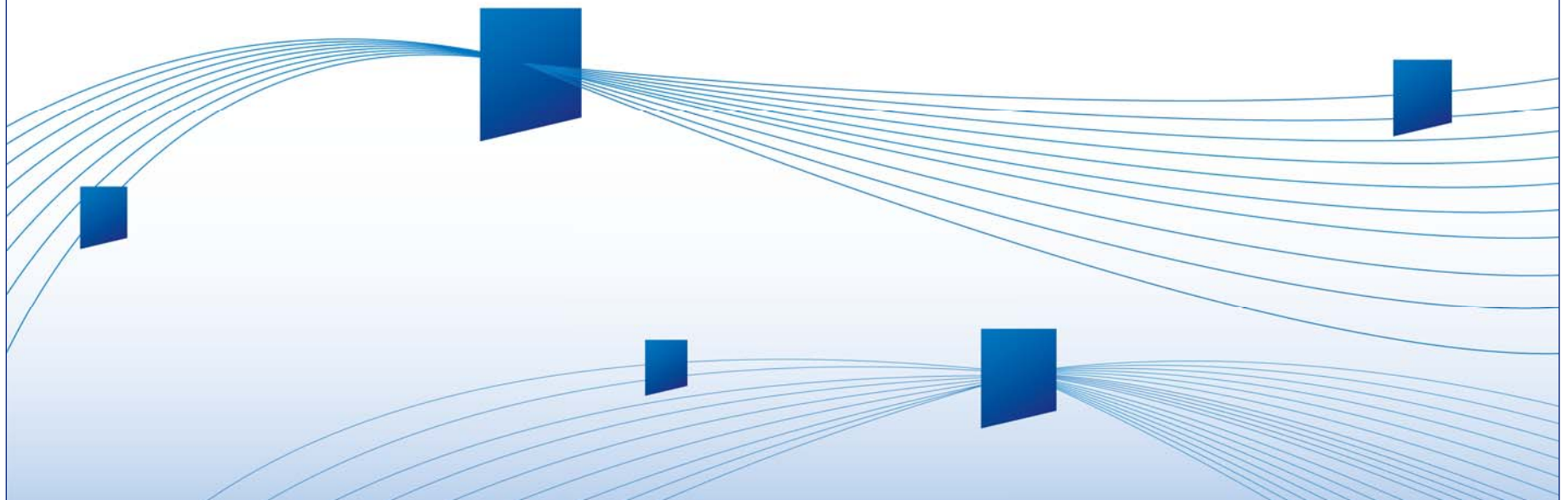
N.B. DV01s are dynamic—they have to be updated as market levels change

Q&A

NYSE Liffe US

Marco Bianchi, Head of Business Development

July 2010





Precious Metals

- 100 oz Gold futures
- Mini Gold futures
- 5000 oz Silver futures
- Mini Silver futures
- Options on 100 oz Gold
- Options on 5000 oz silver

MSCI Equity Index Futures

- MSCI EM – Emerging Markets
- MSCI EAFE – Europe, Australasia, Far East
- MSCI USA

US Interest Rate Futures

- 2, 5, 10 and 30 year Treasury futures
- Eurodollar futures
- Options on US Interest Rate Futures

Partnership With Leading Market Participants

Unique partnership between the world's leading global exchange group and its customers:

- Strategic alignment with leading banks and liquidity providers
- Enhanced distribution
- Market leading expertise
- Alignment of interests
- Additional external investors expected during 2010



GETCO



Morgan Stanley



US Interest Rate Products on NYSE Liffe US

Comprehensive coverage of the US yield curve

- Eurodollar, 2 year, 5 year, 10 year, 30 year futures
- Options on all the above

Innovative clearing solution and unprecedented capital efficiencies

- All products margined and cleared by New York Portfolio Clearing (NYPC), our new US futures clearing house

A wide range of incentive programs for European and US traders

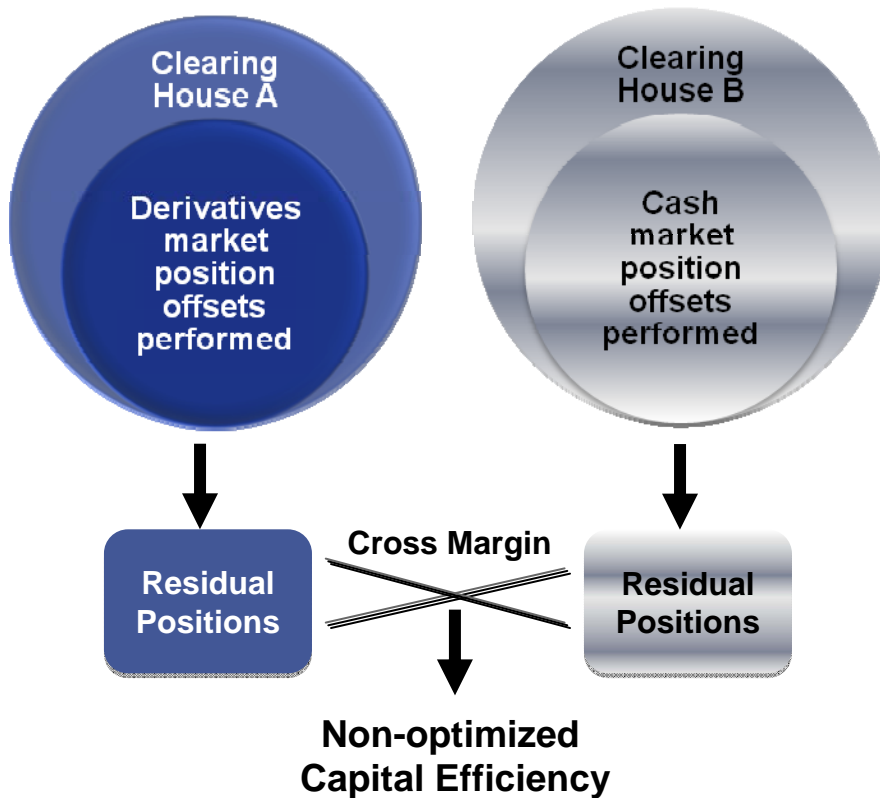
- Outright Designated Market Makers (DMMs)
- Eurodollar Calendar spread and butterflies
- Eurodollar Packs and Bundles
- High volume traders in Treasury and Eurodollar futures

New York Portfolio Clearing

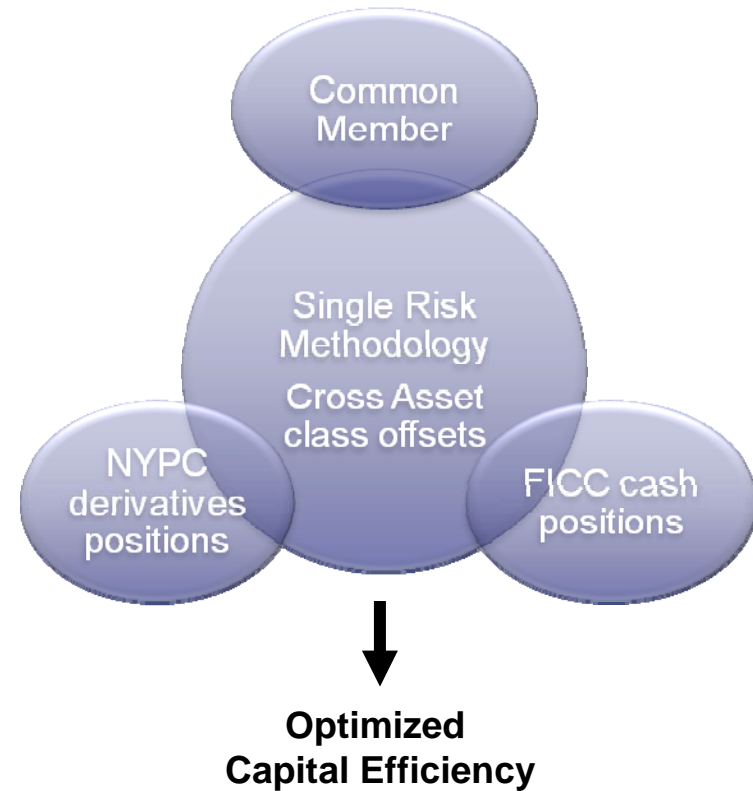
- 50% / 50% joint venture created by NYSE Euronext and DTCC
- Unique risk methodology to capture individual position risks and the aggregate risk of a combined cash and futures portfolio
- Will provide increased transparency which can be used to identify and moderate systemic market risks for participants and regulators
- CEO announced, Walt Lukken, former Chairman of the CFTC
- Anticipated go live: Q4 2010, pending regulatory approval

“One Pot” vs. “Two Pot” Margining

Existing Landscape (“Two Pot Approach”)



NYPC Value Proposition (“One Pot Approach”)



Benefits of the NYSE Liffe US – NYPC model

A credible market with diverse order flow

- The unique NYPC risk methodology provides significant economic benefits to many global interest rate futures market participants
- NYSE Liffe US will attract volume and Open Interest from a diverse client base
- Robust market making and support from NYSE Liffe US equity partners will supplement natural liquidity

Operational efficiencies

- Single net cash/futures margin call and collateral movement
- Simplified delivery process into FICC

The robust, functionally rich technology you know

- LIFFE CONNECT®

Compelling flat pricing structure and liquidity programs