P.R.I.M.E. Finance
Panel of Recognized International Market Experts in Finance

Portfolio Valuation and Damages

Presentation by Dr. Sharon Brown-Hruska
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Portfolio Valuation

- Portfolio valuation often involves valuing portfolios of many different assets and derivatives with different pricing and modeling conventions.
  - Some derivatives, such as exotics and assets with embedded options, can have non-linear relationships with underlying asset prices
  - Some structured products and related derivatives are difficult to price because the underlying cash flows are numerous and difficult to forecast in volatile markets
  - Other assets and derivatives have illiquid markets in the underlying asset or have an uncertain basis against benchmark contracts/prices (if they have a reliable benchmark)+

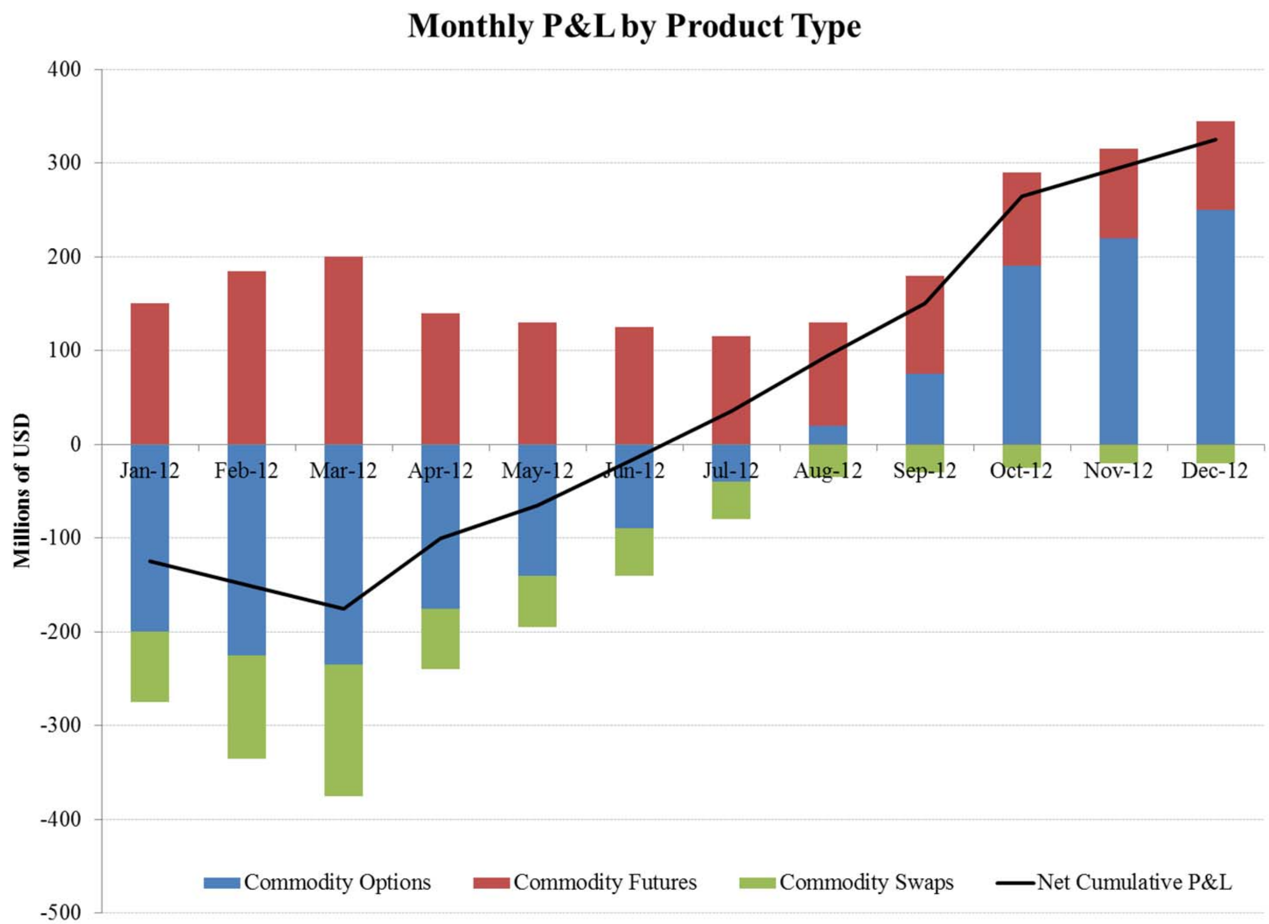
NERA often values portfolios of exotic, structured, and/or bespoke securities and derivatives

Cases Involving Portfolio Valuation

- In a prominent alleged "rogue trader" case, we were asked to determine the timing and magnitude of a financial institution's trading losses.
- In another matter, we were asked to determine the value of a portfolio but for the alleged mismarking of the trading book.
- We were also asked to consider the liability of a financial institution that allegedly allowed a trader to repeatedly violate his trading limits and whether such violations caused significant losses
  - Analysis of "delta" exposures, value at risk or "VAR" limits, interest rate risk or "rho" limits, other risk measures or greeks, etc.
  - P&L attribution or "*P&L explained*" to evaluate whether violation of investment policies or risk limit breaches lead to significant losses.

NERA analyses included calculating periodic P&L and conducting P&L attribution, separating P&L by asset type and excluding transactions not subject to alleged wrongdoing

Portfolio Valuation to Determine Contributions to Profit and Loss Over Time



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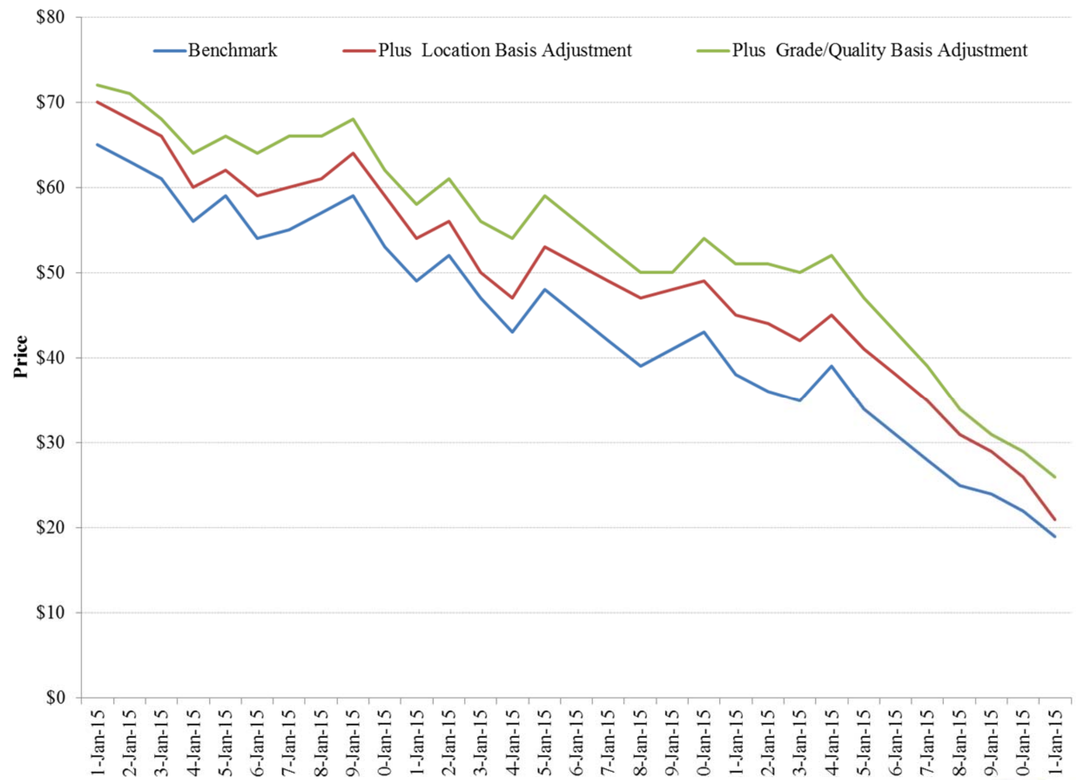
Portfolio Valuation Methodologies

- "Market Value" methodology—top down approach calculates P&L attributed to the trader's desk by the financial institution's internal reports (i.e., the "Trader P&L") and adjusts for risk factors.
- "Cash-flow" methodology—bottom up analysis that looks at the beginning and ending values, and cash flows for all trades in the trader's portfolios.
- The valuations produced by the methodologies may differ, but the differences should be statistically and economically insignificant.

It may be necessary to conduct a fundamental valuation of bespoke, illiquid, or exotic portfolio components using statistical tools and market data

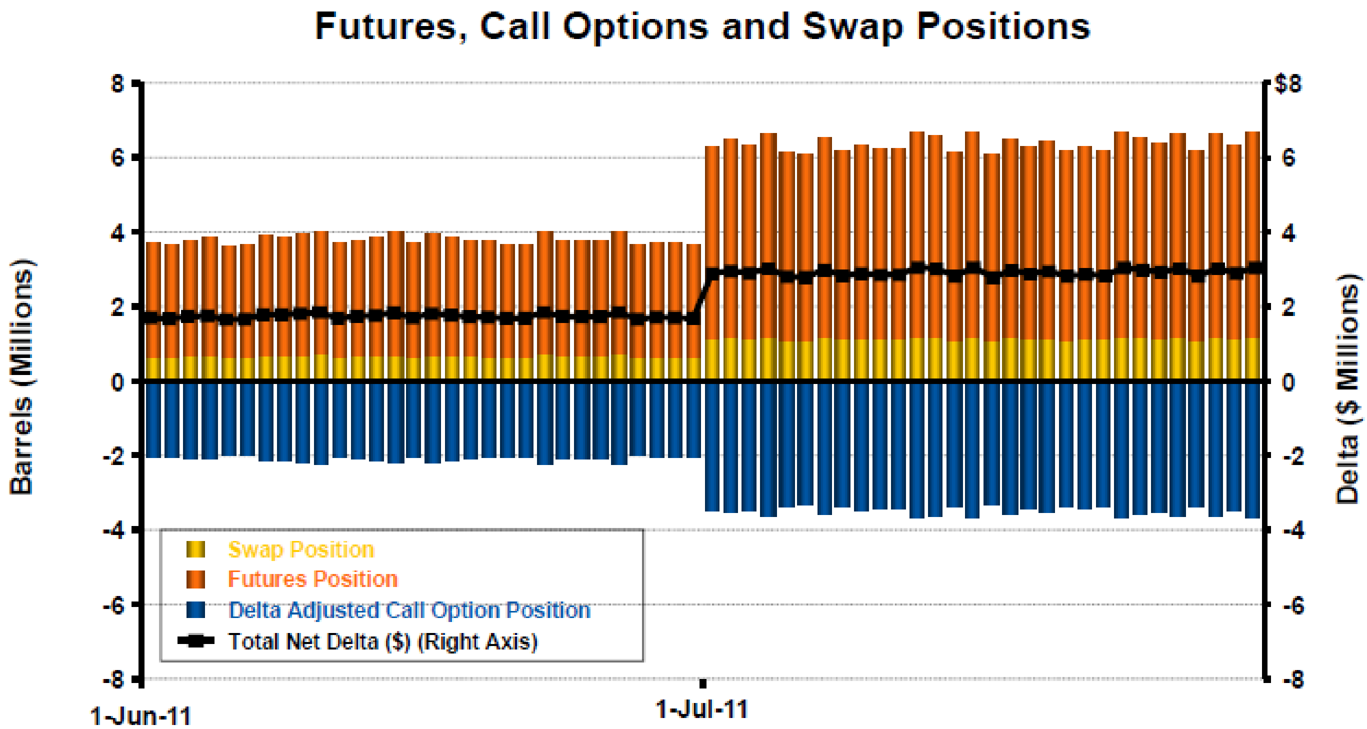
Valuation of Illiquid or Bespoke Contracts

Valuation of illiquid and/or bespoke derivatives using benchmark prices + modeled basis adjustments



Portfolio Valuation and P&L Attribution in Asset Management and Trading Disputes

- In cases in which investors alleged that fund managers held insufficiently diversified or excessively risky assets, NERA analyzed how different product types contributed to risk exposure.

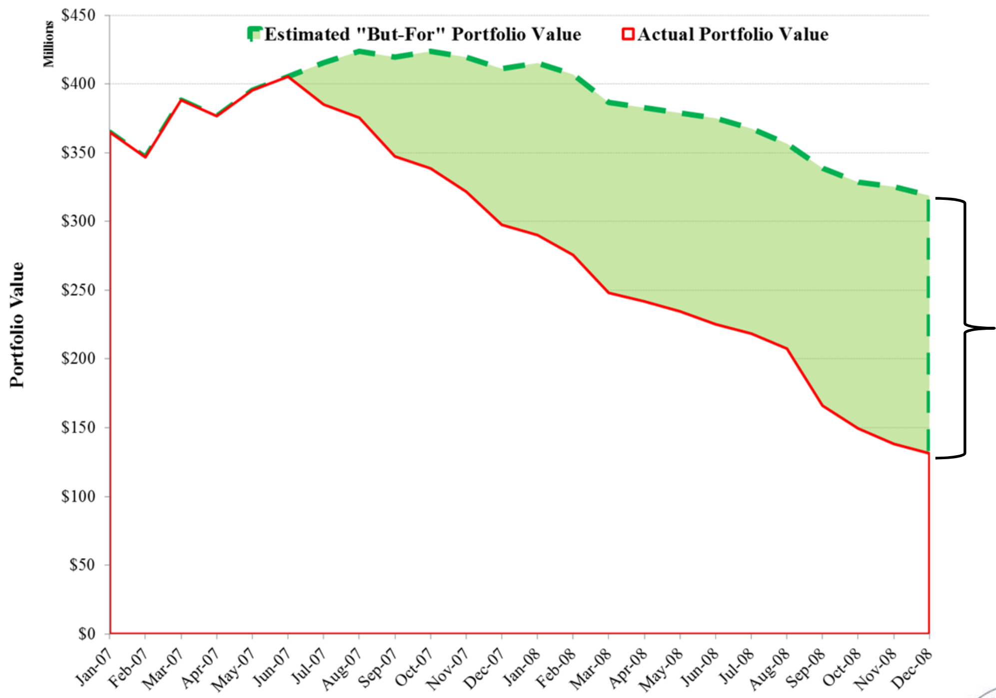


Applications of Portfolio Valuation to Post-Financial Crisis Litigation

- Investors alleged that fund managers should have held different assets, and but-for the fund managers' allegedly unsuitable asset allocations, investors would have earned higher returns.
- In those cases, construct "but-for" alternative portfolios based on the offering documents and actual asset allocations made by other fund managers using similar offering documents.
- If periodic valuations of the actual and but-for portfolios showed no distinguishable difference in trend, plaintiffs had a weak case.
- If the but-for portfolio regularly outperformed the actual portfolio in periodic valuations, then the defendants had to demonstrate the reasonableness and or/the suitability of the actual portfolio for the investor(s).

Litigation and But-For Damages

If the but-for portfolio is plausible, had higher returns than the actual portfolio, and defendants could not defend the reasonableness of the actual portfolio, then comparing valuations across time can potentially form the basis for but-for damages estimates:



Damages for Misappropriated Funds Invested in High Risk Securities

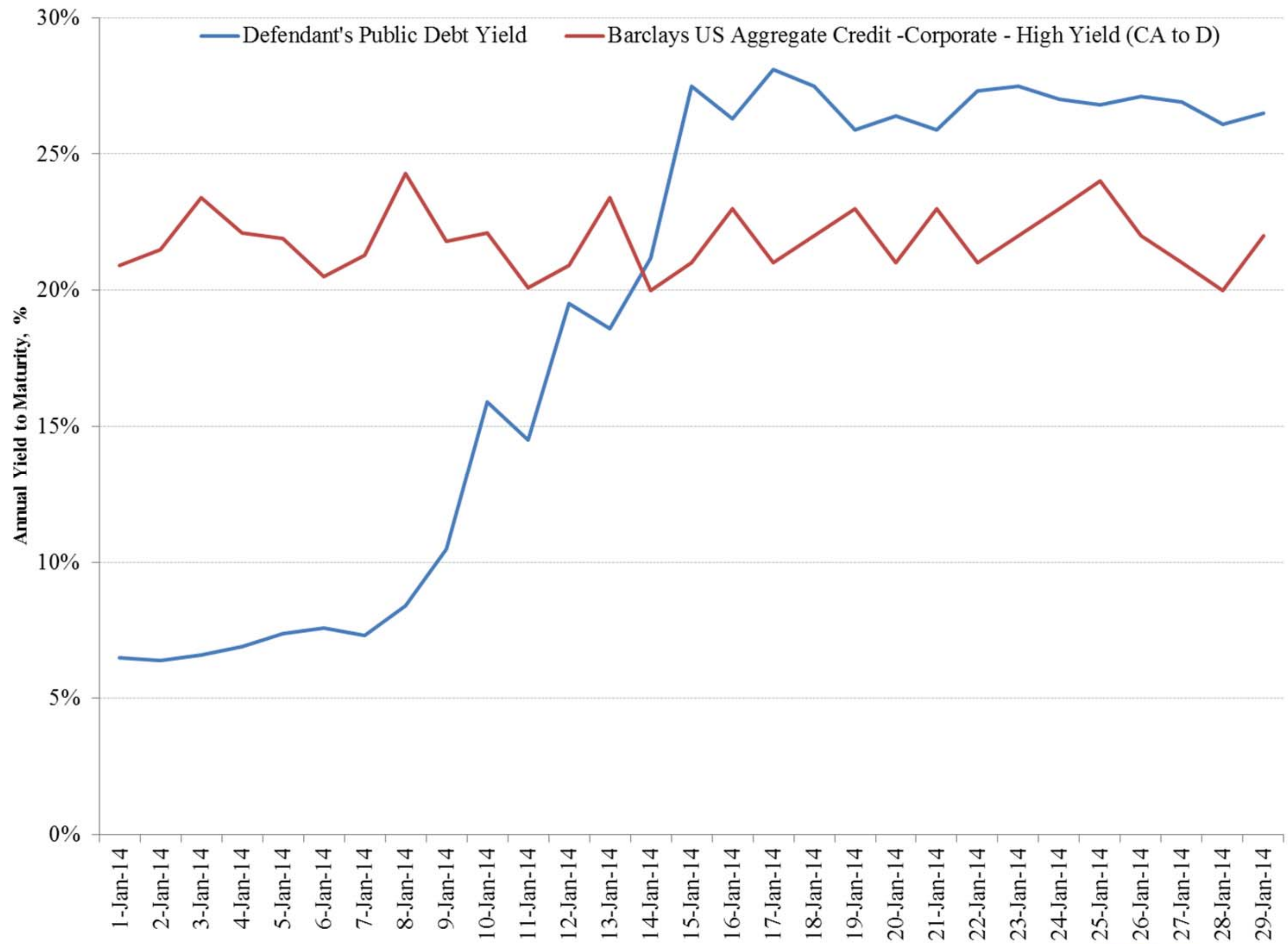
- In many cases, damages estimation methodology is more complicated: E.g. plaintiffs allege some risks not captured by the but-for scenario.
- Example: A distressed financial intermediary allegedly misappropriated client funds to support investments in risky proprietary investments.
- The loss of access to funds affected clients' investment opportunities and forced many to adjust asset allocations to reduce risk.
- The firm's clients alleged that in a scenario in which they never lost access to their funds, they would have earned higher returns.
- Clients made a plausible assertion, but the expert must translate it into specific "but-for" damages or settlement figures.

Investors alleged they were subject to high risk of loss throughout the relevant period, and should be compensated for risk of default

Choosing an Appropriate But-for Interest Rate: Posner's Proposition

- Law and Economics scholars beginning with Judge Posner have suggested that prejudgment interest could incorporate compensation for the risk of default faced by plaintiffs as well as inflation.
- When a but-for scenario does not provide a specific but-for rate of return, Posner ruled that prejudgment interest must reflect the yield the defendant would have faced had they had to borrow funds themselves in a free market.
- Market rates on the public debt of the defendant and benchmarks with a similar risk or credit profile can be used to establish a reasonable yield to estimate prejudgment interest damages.

Damages and Relevant Rates for Discounting Investor Losses Over Time



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Key Takeaways

- Portfolio valuation may require adjustments to asset values when containing options or option-like features, and requires reasonable adjustments when assets in the portfolio are illiquid, bespoke, exotic, or dependent on hard-to-forecast cash-flow structures.
- Specific methodologies can be used to value portfolios, from straightforward P&L analysis from financial institution mark-to-market to fundamental analysis of assets and custom cash flow models of structured products.
- Periodic valuation by product type and P&L attribution can be used to test propositions, such as the relative riskiness of a fund manager's position or the diversification of the portfolio.
- Damages calculations in a but-for calculation can be adjusted for risks not captured by standard models.

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