

Measuring Fair Value: Implementation and Issues

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$$\begin{aligned} & 2 \times 2 - \frac{2}{3} \sqrt{126} \cdot \cos 5\theta - \frac{5z^2}{15} + (6\beta\alpha + 4)^2 + 618\pi + \\ & \sqrt{128} \cdot \alpha\beta x + x^2 \sqrt{(22^3 + 6\delta) \cdot x^2} + \cos\theta\beta + \tan 682 \\ & \delta \sqrt{199z} + 4(62y\beta z) - 85\sqrt{297} \cdot \beta + xy^2z \cdot (6x)^2 + \\ & \alpha\beta x \cdot 123 \cdot \sqrt{11} + (462 \cdot \sqrt{32}) + (455 + 5x + 16z) \cdot \\ & [225\beta : 24(z\gamma\beta + 2\sqrt{6}) + 2] + Ac^2 + \sqrt{421} + \\ & -\frac{31}{24} \cdot 8125 + \cot\gamma 869 - \frac{23}{32} + (\sqrt{12981} : 12) + \\ & (\cos\alpha^2 \cdot \tan\beta) \cdot (698x + 222y) + \tan 441^2 \\ & + [(615^{12} - x) \cdot (5yz + x)] + 162\alpha + \beta - \\ & \alpha^2 \cdot 64 \cos\alpha^2 + 667^3 + \sqrt{0.1} + x = 4 \end{aligned}$$



7/2/07

The Old World



The New World



DAVE CARPENTER...

"IT LOOKS LIKE THEY'RE BRINGING IN THE NEW REGULATIONS MANUAL."

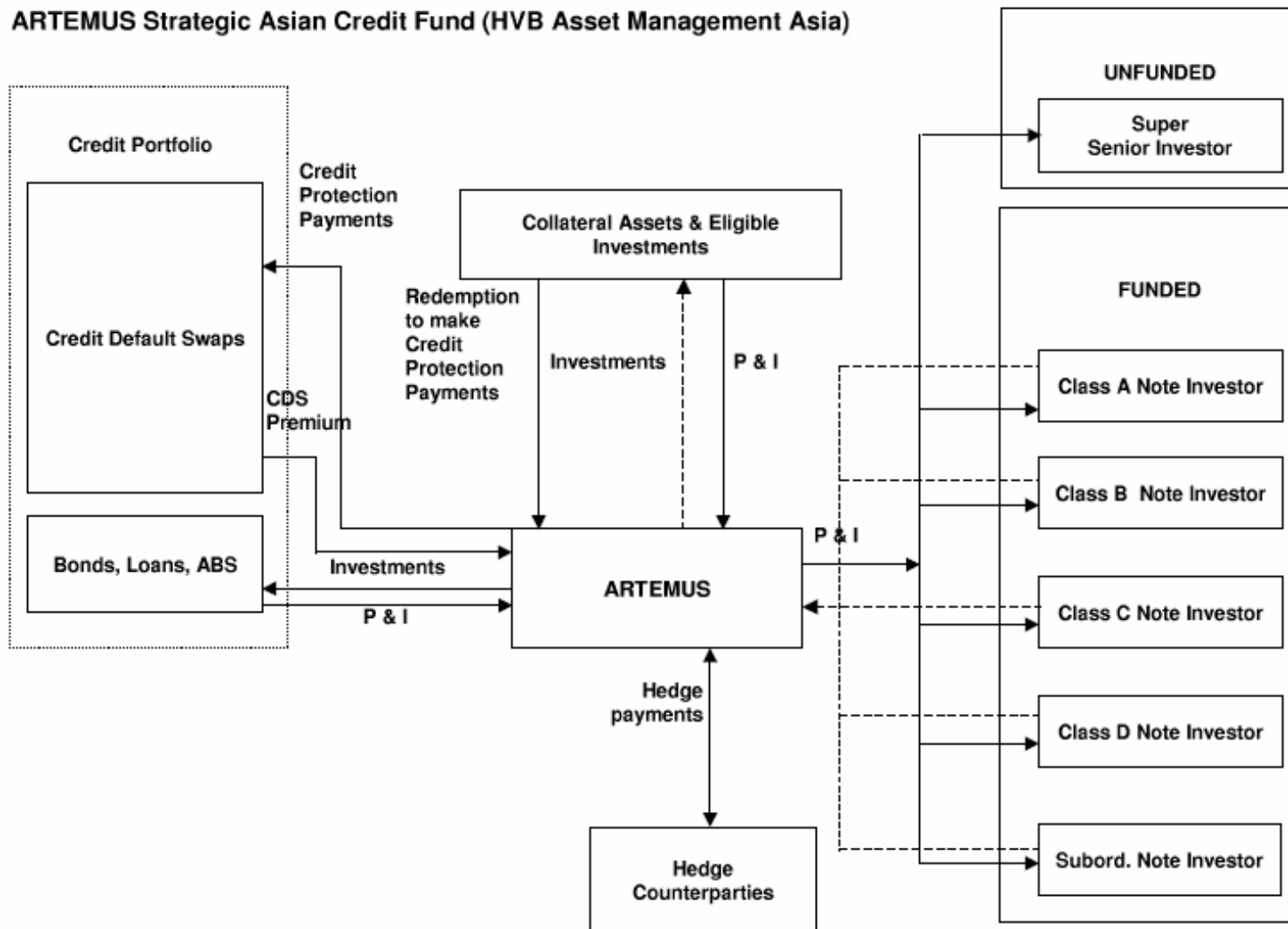
Interest Rate Risk

Credit Risk

Financial Statement
Risk

My World

ARTEMUS Strategic Asian Credit Fund (HVB Asset Management Asia)



My World

New and more complex financial instruments are developed with increasing frequency. Often times these instruments are developed for specific, valid business purposes – such as managing risk and reducing the cost of capital or tax liability. All too often, these instruments don't fit any of the models exactly and preparers and auditors do not know which model to apply. Other times financial instruments are developed to arbitrage the accounting.

**Jackson M. Day, Deputy Chief Accountant,
Office of the Chief Accountant , SEC
28th Annual National Conference on Current
SEC Developments, December 5, 2000**

Recent Fair Value Accounting Pronouncements

SFAS 155	SFAS 157	SFAS 159
<ul style="list-style-type: none"> • Fair Value Measurement Election <ul style="list-style-type: none"> – Permits irrevocable fair value measurement for any hybrid financial instrument that contains an embedded derivative that would have required bifurcation • Accounting for Embedded Derivatives in Securitized Financial Assets <ul style="list-style-type: none"> – Eliminates temporary exemption for beneficial interests in securitized financial assets from the bifurcation requirements of SFAS 133 (DIG D1) • Amends SFAS 140 <ul style="list-style-type: none"> – Eliminates prohibition in SFAS 140 on passive derivatives a QSPE may hold that pertains to beneficial interest • Presentation & Disclosure Requirements <ul style="list-style-type: none"> – Fair values of hybrid financial instruments should either be presented in separate line items on the balance sheet, or aggregate in the same line item with disclosure of fair value amounts included in the aggregate amount 	<ul style="list-style-type: none"> • Applies to accounting pronouncements that require or permit fair value measurements • Does not apply to share based payments under SFAS 123 • Presents a comprehensive definition of fair value <ul style="list-style-type: none"> – Hierarchy for valuation inputs – Transaction vs. exit price – Principal or Most Advantageous Market – Eliminates use of blockage factors for quoted prices (level 1) – Requires consideration of the issuer’s own credit • Eliminates deferral of unrealized gains/losses on day 1 (EITF 02-3) • Expands disclosures about the use of fair value to measure assets and liabilities 	<ul style="list-style-type: none"> • Under the issued standard, a company may (at inception of the contract) irrevocably elect fair value as the initial and subsequent measurement attribute for certain financial assets and liabilities on a contract by contract basis. Benefits include: <ul style="list-style-type: none"> – Moves away from problems of the “mixed-attribute model” – Mitigates volatility without complex hedge accounting – Achieves greater convergence with international accounting standards – Expands the use of fair value measurement attribute Phase 1: Introduces the FVO for financial assets and liabilities (as SFAS 155 did for certain hybrid instruments) Phase 2: Will Address creating a FVO for selected non-financial items.

SFAS 157

- Applies to accounting pronouncements that require or permit fair value measurements
- Does not apply to share based payments under SFAS 123
- Presents a comprehensive definition of fair value
 - Hierarchy for valuation inputs
 - Transaction vs. exit price
 - Principal or Most Advantageous Market
 - Eliminates use of blockage factors for quoted prices (level 1)
 - Requires consideration of the issuer's own credit
- **Eliminates** deferral of unrealized gains/losses on day 1 (EITF 02-3)
- **Expands disclosures** about the use of fair value to measure assets and liabilities

Impacts of FV Pronouncements

- Increases Model Reliance
 - Generally instrument values in Levels 2 and 3 represent MODEL-BASED FAIR VALUES
- Heightens attention to the quality of valuation inputs
 - Construction of entity's credit curves
- Complicates Modeling Derivative Fair Values
 - Creditworthiness of both counterparties affects derivative fair values
 - Modeling the effect of credit risk may require consideration of the range of fair values the derivative could have across multiple future periods
- Requires P&L attribution and disclosure
 - Changes in fair values due to "*changes in instrument-specific credit risk*" and how they were determined is a required disclosure under FAS 159
- Raises economic hedging issues
 - Hedging exposure to entity's own credit spreads
 - Economic hedge effectiveness issues

Derivative Counterparty Credit Risk

- Illustration: a vanilla interest-rate swap

Impact of the Risk of Counterparty Default on Derivative Fair Values	Counterparty Defaults by time t	Counterparty Does Not Default by time t
Derivative Fair Value is positive at some future time t (derivative asset)	Value Loss: only a fraction of asset value will be recovered	NO IMPACT (No Default)
Derivative Fair Value is negative at some future time t (derivative liability)	NO IMPACT (Counterparty creditors have full claim on liability)	NO IMPACT (No Default)

- Modeling and aggregating results across multiple potential outcomes results in net expected loss

Effect of Entity's Own Credit Risk

- The other side of the coin: entity's own credit

Impact of the Risk of Entity's Own Default on Derivative Fair Values	Entity Defaults by time t	Entity Does Not Default by time t
Derivative Fair Value is positive at some future time t (derivative asset)	NO IMPACT (Entity still has full claim on the asset)	NO IMPACT (No Default)
Derivative Fair Value is negative at some future time t (derivative liability)	Value Gain: only a fraction of the liability amount will be repaid	NO IMPACT (No Default)

- Modeling and aggregating results across multiple potential outcomes results in net expected gain

Netting and Collateral

- Counterparty Netting Arrangements
 - Netting arrangements impact credit exposures for portfolios of derivatives with the same counterparty
 - Netting impacts both current and future exposures
- Collateral Arrangements
 - Credit enhancements affect Fair Values
 - Collateral arrangements may reduce, but generally do not eliminate the impact of credit spreads on derivative values
 - One-way collateral arrangements (where one party may be required to post collateral but the other is not) may significantly increase impact of counterparty credit on values

Modeling Uncertainty

- Market Risk / Uncertainty
 - Example: uncertainty about future level of an equity index in pricing an equity index option
 - Generally captured through market-based valuation inputs (e.g., forward prices, volatilities)
- Model and Input Uncertainty
 - “risk inherent in a particular valuation technique”
 - “risk inherent in the inputs to the valuation technique”
 - Adjustments required if other market participants would be expected to take these risks into account in pricing
- All relevant risks must be captured in Fair Value
 - *“A measurement (for example, a “mark-to-model” measurement) that does not include an adjustment for risk would not represent a fair value measurement if market participants would include one in pricing the related asset or liability.”*

Other Fair Value Implementation Issues

Transaction costs vs. Transportation Costs

- Issue
 - Should both transaction and transportation costs be included in the consideration of the fair value of the asset or liability?
- Consideration
 - Transaction costs are defined as the incremental direct costs to sell the asset or transfer the liability in the principal (or most advantageous) market for the asset or liability, i.e. broker fees.
 - Transportation costs are the costs incurred to transport the asset or liability to (or from) its principal (or most advantageous) market.
- Response
 - Transaction costs are not included. (For financial assets and liabilities that are fair valued under FAS 159 – transaction fees and costs that are incurred upfront have to be recognized in earnings).
 - Transportation costs are included if location is a characteristic of the asset or liability, i.e. commodity.

Other Fair Value Implementation Issues

Unit of Account (or Measurement)

- Issue
 - What is the proper unit of valuation for establishing fair value?
- Consideration
 - Assume an entity has a portfolio of derivative contracts. It establishes fair value by determining discounted cash flows and adjusting for other considerations, for example credit risk.
 - e.g., determination of the credit valuation adjustment
 - At a contract level,
 - At a counterparty level, or
 - At a portfolio level
- Response
 - The unit of valuation may differ from the unit of account. This concept was clarified in FAS 159. In the above example the unit of valuation may have been determined to be at the counterparty level if that was the level at which the credit valuation adjustment is calculated. Where the unit of account differs from the unit of valuation the appropriate fair value would have to be allocated to the unit of account for disclosure purposes under FAS 157.

Other Fair Value Implementation Issues





Significance of Inputs

- **Issue**

- How should an entity determine whether the effect of a particular input is significant on the overall measurement?

- **Consideration**

- Entity A issues credit default protection for a duration of 25 years on a single-name issuer debt;
- Valuation inputs to determine the fair value of the credit default swap include the following:

Inputs	Input Level 1	Input Level 2	Input Level 3
ED Futures			
Swap Rates			
Credit Spread/ Underlying			
Credit Spread/ Issuer			

- **Response**

- A reasoned and consistent approach may be acceptable.

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