

# DERIVATIVES ANALYSIS: INDEPENDENT AMOUNT (IA) COMPUTATION COLLATERAL OTC

Tutorial by [Qcfinance.in](http://Qcfinance.in)

# Independent Amounts IA

Provide an additional buffer of protection to dealers to protect against certain risks – including risks arising where:

- (i) there is market volatility and a delay before new collateral requirements are computed, called and settled
- (ii) the dealer's exposure increases after the default of the end user as a result of market fluctuations prior to the dealer closing out its position;
- (iii) margin payments are not made because they fall below an agreed threshold amount
- (iv) there is a discrepancy between margin valuations (based on mid-market values) and default valuations under the ISDA Master (depending on the method used upon close-out).

# IA Custodian

- ▣ IA Posted Directly with the Dealer or its Affiliate
- ▣ IA Posted with a Third Party Custodian of the Dealer
- ▣ IA Posted with an Agent Appointed by Both Parties

# Pre Requisite

- ▣ Pricing derivative products like Futures, Options, Indexes, CDS, CDO, FRAs, SWAPs, SWAPTIONS, CAPs/FLOORS.
- ▣ Credit Risk Model, Value at Risk. Knowledge of Interest Rates, Credit spreads, bond pricing, etc.

# Validation

- ▣ Correlation issues resulting in fallback calculation, risk factor mapping issues, missing risk sensitivities, risk discrepancies, low exceptions in the risk engine

# IA numbers for Hedge Funds

- ▣ Discrepancies between the IA values provided by the counterparty and the internal calculation

# Greek computation for structured products

- ▣ Sensitivities with various factors, here interest rate becomes the most important
- ▣ Should we be using Copulas or Correlations?
- ▣ Are the distributions different at some scale for extra events (EVT)?
- ▣ Mapping and finding sensitive for all risk factors to the structure product

# References

- <http://www.lexology.com/library/detail.aspx?g=a5063400-8dbf-4f85-a4d6-4260a3e7bc34>
- <http://www.lexology.com/library/detail.aspx?g=a5063400-8dbf-4f85-a4d6-4260a3e7bc34>
- <http://www.financial-edu.com/collateral-management-guide-part-2-collateral-management-glossary.php>
- [http://en.wikipedia.org/wiki/Credit\\_Support\\_Annex](http://en.wikipedia.org/wiki/Credit_Support_Annex)
- <http://www.ybs.co.uk/your-society/treasury/documents/transaction-documents/ISDA-Credit-Support-Annex.PDF>
- [http://en.wikipedia.org/wiki/Credit\\_risk](http://en.wikipedia.org/wiki/Credit_risk)
- [http://www.ubs.com/microsites/ubs-delta/en/articles-thought-leadership/\\_jcr\\_content/par/accordionbox/linklist/link\\_3.195829707.file/bGluay9wYXRoPS9jb250ZW50L2RhS91YnMvbWljam9zaXRlcy91YnNfZGVsdGEvMjAxMDEwX1Jpc2tfVUJTLnBkZg==/201010\\_Risk\\_UBS.pdf](http://www.ubs.com/microsites/ubs-delta/en/articles-thought-leadership/_jcr_content/par/accordionbox/linklist/link_3.195829707.file/bGluay9wYXRoPS9jb250ZW50L2RhS91YnMvbWljam9zaXRlcy91YnNfZGVsdGEvMjAxMDEwX1Jpc2tfVUJTLnBkZg==/201010_Risk_UBS.pdf)
- [http://www.isda.org/c\\_and\\_a/pdf/independent-amount-whitepaper-final.pdf](http://www.isda.org/c_and_a/pdf/independent-amount-whitepaper-final.pdf)
- <http://www.iimjobs.com/j/ia-analyst-quant-middle-office-bank-2-5-yrs-124439.html>
- <http://homepages.rpi.edu/~tealj2/Quant.pdf>
- [http://www.boj.or.jp/en/announcements/release\\_2010/data/fsc1006a7.pdf](http://www.boj.or.jp/en/announcements/release_2010/data/fsc1006a7.pdf)
- <http://securities.bnpparibas.com/jahia/webdav/site/portal/shared/documents/Market%20Insight/Collateral-Access-management-optimisation-protection-OTC-derivatives.pdf>
- [http://www.wib.org/publications\\_resources/lending\\_credit\\_digest/apr13/wheeler.html](http://www.wib.org/publications_resources/lending_credit_digest/apr13/wheeler.html)
- <http://www.derivsource.com/content/dodd-frank-end-user-clearing-exception-practical-considerations-preparing-your-board>