Normal Accidents

Why Do Crises Happen In Other Industries?
Interaction-Coupling Chart
Just How Complex are CDO’s etc.? 

HVB Asset Management Asia (HVBAM) has brought to market the first ever hybrid collateralized debt obligation (CDO) managed by an Asian collateral manager. The deal, on which HVB Asia (formerly known as HypoVereinsbank Asia) acted as lead manager and underwriter, is backed by $120 million of asset-backed securitization bonds and $880 million of credit default swaps. Under the structure of the transaction, Artemus Strategic Asian Credit Fund Limited—a special purpose vehicle registered in the Cayman Islands—issued $200 million of bonds to purchase the $120 million of cash bonds and deposit $80 million into the guaranteed investment contract, provided by AIG Financial Products. In addition, the issuer enters into credit default swap agreements with three counterparties (BNP Paribas, Deutsche Bank and JPMorgan) with a notional value of $880 million. On each interest payment date, the issuer, after payments of certain senior fees and expenses and the super senior swap premium, will use the remaining interest collections from the GIC accounts, the cash ABS bonds, the hedge agreements, and the CDS premiums from the CDS to pay investors in the CDO transaction. The transaction was split into five tranches, including an unrated $20 million junior piece to be retained by HVBAM. The $127 million of A-class notes have triple-A ratings from Fitch, Moody's and S&P, the 20 million B-notes were rated AA/Aa2/AA, the $20 million C bonds were rated A/A2/A, while the $13 million of D notes have ratings of BBB/Baa2 and BBB.

Complexity of Regulation

\[
S[L] = \begin{cases} 
L & \text{when } L \leq K_{IRB} \\
K_{IRB} + K[L] - K[K_{IRB}] + (d \cdot K_{IRB} / \omega)(1 - e^{\omega(K_{IRB} - L) / K_{IRB}}) & \text{when } K_{IRB} < L
\end{cases}
\]

where

\[
\begin{align*}
h &= (1 - K_{IRB} / LGD)^N \\
c &= K_{IRB} / (1 - h) \\
v &= \frac{(LGD - K_{IRB})K_{IRB} + 0.25 (1 - LGD) K_{IRB}}{N} \\
f &= \left(\frac{v + K_{IRB}^2}{1 - h} - c^2\right) + \frac{(1 - K_{IRB})K_{IRB} - v}{(1 - h)^T} \\
g &= \frac{(1 - c)c}{f} - 1 \\
a &= g \cdot c \\
b &= g \cdot (1 - c) \\
d &= 1 - (1 - h) \cdot (1 - Beta[K_{IRB}; a, b]) \\
\end{align*}
\]

\[
K[L] = (1 - h) \cdot ((1 - Beta[L; a, b]) L + Beta[L; a+1, b] c).
\]

Paragraph 624 of Basel II, June 2004, p. 132