

$$(1) S[Y] = \left\{ \begin{array}{l} Y \\ K_{IRB} + K[Y] - K[K_{IRB}] + \frac{d \cdot K_{IRB}}{20} \left(1 - e^{\frac{20 \cdot (K_{IRB} - Y)}{K_{IRB}}}\right) \end{array} \right. \quad \left. \begin{array}{l} \text{when } Y \leq K_{IRB} \\ \text{when } Y > K_{IRB} \end{array} \right\}$$

$$(2) K[Y] = (1-h) \cdot [(1-\beta[Y;a,b]) \cdot Y + \beta[Y;a+1,b] \cdot c]$$

$$(3) h = \left(1 - \frac{K_{IRB}}{EWALGD}\right)^N$$

$$(4) a = g \cdot c$$

$$(5) b = g \cdot (1-c)$$

$$(6) c = \frac{K_{IRB}}{1-h}$$

$$(7) g = \frac{(1-c) \cdot c}{f} - 1$$

$$(8) f = \frac{v + K_{IRB}^2}{1-h} - c^2 + \frac{(1-K_{IRB}) \cdot K_{IRB} - v}{(1-h) \cdot 1000}$$

$$(9) v = K_{IRB} \cdot \frac{(EWALGD - K_{IRB}) + .25 \cdot (1 - EWALGD)}{N}$$

$$(10) d = 1 - (1-h) \cdot (1 - \beta[K_{IRB};a,b])$$