$$R^{bsp}(i, r_1(t), \dots, r_i(t)) = -\sum_{k=1}^{i-1} F_k e^{-r_k(t)(t_k - t_0)} + De^{-r_i(t)(t_i - t_0)}. \tag{17}$$

Вторият случай е $1_{\{i<M+1\}} = 0$, т. е. няма фалит по време на срока до падежа на суапа. Тогава имаме:

$$R^{bsp}(M+1, r_1(t), \dots, r_M(t)) = -\sum_{k=1}^{M} F_k e^{-r_k(t)(t_k - t_0)}.$$

За производните имаме $\frac{\partial R^{bsp}}{\partial t} = 0$, $\frac{\partial R^{bsp}}{\partial r_k} = (t_k - t_0) F_k e^{-r_k(t_k - t_0)}$ за $k = 1, \dots, (i-1)$ и $\frac{\partial R^{bsp}}{\partial r_i} = -(t_i - t_0) De^{-r_i(t)(t_i - t_0)}$ за $k = i$. За вторите производни имаме $\frac{\partial^2 R^{bsp}}{\partial r_i \partial r_j} = 0$ за $i \neq j$; $\frac{\partial^2 R^{bsp}}{\partial r_k^2} = -(t_k - t_0)^2 F_k e^{-r_k(t)(t_k - t_0)}$ за $k < i$; и $\frac{\partial^2 R^{bsp}}{\partial r_i^2} = (t_i - t_0)^2 De^{-r_i(t)(t_i - t_0)}$ (за $k = i$).

Тогава:

$$dR^{bsp}(i, r_1(t), \dots, r_i(t)) = \sum_{k=1}^{i} \frac{\partial g}{\partial r_k} dr_k + \frac{1}{2} \sum_{k=1}^{i} \frac{\partial^2 g}{\partial r_k^2} dr_k^2. \tag{18}$$

Така получаваме в първия случай:

$$dR^{bsp}(i, r_1(t), \dots, r_i(t)) = \sum_{k=1}^{i-1} (t_k - t_0) F_k e^{-r_k(t)(t_k - t_0)} dr_k - (t_i - t_0) De^{-r_i(t)(t_i - t_0)} dr_k -$$
$$- \frac{1}{2} \sum_{k=1}^{i-1} (t_k - t_0)^2 F_k e^{-r_k(t)(t_k - t_0)} dr_k^2 + \frac{1}{2} (t_i - t_0)^2 De^{-r_i(t)(t_i - t_0)} dr_i^2. \tag{19}$$

Във втория случай :

$$dR^{bsp}(M+1, r_1(t), \dots, r_M(t)) = \sum_{k=1}^{M} (t_k - t_0) F_k e^{-r_k(t)(t_k - t_0)} dr_k -$$
$$- \frac{1}{2} \sum_{k=1}^{M} (t_k - t_0)^2 F_k e^{-r_k(t)(t_k - t_0)} dr_k^2,$$