S1 Appendix. Formula inference

$$I_t = T_t - \sum_{i=1}^{t} k\, I_i - C_t \quad (1)$$

$$I_{t-1} = T_{t-1} - \sum_{i=1}^{t-1} k\, I_i - C_{t-1} \quad (2)$$

Equation (1) - Equation (2)

$$I_t - I_{t-1} = (T_t - T_{t-1}) - (C_t - C_{t-1}) - k\, I_t$$

$$I_t - I_{t-1} + k\, I_t = (T_t - T_{t-1}) - (C_t - C_{t-1})$$

$$I_t + k\, I_t = (T_t - T_{t-1}) - (C_t - C_{t-1}) + I_{t-1}$$

$$I_t\,(1 + k) = (T_t - T_{t-1}) - (C_t - C_{t-1}) + I_{t-1}$$

Therefore,

$$I_t = \frac{(T_t - T_{t-1}) - (C_{t-1} - C_{t-1}) + I_{t-1}}{1 + k}$$