Appendix:

This appendix fixes some uncorrected typos in the published version.

Given that $I_T^{\gamma,K} = \gamma(V_T - (F+K))1_{\{V_T-(F+K)>0\}}$ and the firm's asset value net of private benefits $X_T = V_T - I_T^{\gamma,K} = V_T 1_{\{V_T<F+K\}} + (V_T - \gamma V_T + \gamma F + \gamma K)1_{\{V_T>F+K\}}$, it should be clear that $\{V_T > F+K\} = \{X_T > (F+K)\}$. If this is not, notice that:

$\{V_T > F+K\} = \{(1-\gamma)V_T > (1-\gamma)(F+K)\} = \{(1-\gamma)V_T + \gamma(F+K) > (F+K)\} = \{X_T > (F+K)\}$

The total equity at time T, which is defined on the firm's assets value net of private benefits is now

$$\begin{aligned}
[X_T - F]^+ &= (X_T - F)1_{\{X_T>F\}} \\
&= \underbrace{(X_T - F)1_{\{F+K>X_T>F\}}}_{X_T=V_T\ on\ \{F+K>X_T>F\}} + (X_T - F)1_{\{X_T>F+K\}} \\
&= (V_T - F)1_{\{F+K>V_T>F\}} + (V_T - \gamma(V_T - (F+K)) - F)1_{\{V_T>F+K\}} \\
&= \underbrace{(V_T - F)1_{\{F+K>V_T>F\}} + (V_T - F)1_{\{V_T>F+K\}}}_{[V_T-F]^+} - \gamma\underbrace{(V_T - (F+K))1_{\{V_T>F+K\}}}_{[V_T-(F+K)]^+} \\
&= [V_T - F]^+ - \gamma[V_T - (F+K)]^+ .
\end{aligned}$$