$$\tilde{x}_T \xrightarrow{K_T} \tilde{x}_T^* \xrightarrow{\alpha_T} \tilde{x}_{T-1} \longrightarrow \cdots \longrightarrow \tilde{x}_1 \xrightarrow{K_1} \tilde{x}_1^* \xrightarrow{\alpha_1} \tilde{x}_0.$$