

Quiz 4 — The Cass–Koopmans–Ramsey (CKR) model

Questions	Answers
1. In the CKR model, the law of motion of capital is written:	☐ $K_t = Y_t - C_t - (\delta + n + g)K_t$ ☐ $\dot{k}_t = y_t - \gamma_t - \delta k_t$ ☐ $\dot{K}_t = Y_t - C_t - \Delta K_t$ ☐ $\dot{\kappa}_t = 0$, because we are at the steady state ☐ $\dot{\kappa}_t = f(\kappa_t) - \gamma_t - (n + g + \delta)\kappa_t$
2. How can we justify that the capital stock per head used by each firm is the same?	☐ Because F_L equals $A_t[f(\kappa_t) - \kappa_t f'(\kappa_t)]$. ☐ Because the model assumes a representative firm whose mass grows exogenously. ☐ Because F_K equals z_t . ☐ Because F_L equals w_t .
3. Which of Kaldor's stylized facts does CKR fail to reproduce?	☐ The shares of labor and of capital in income are both constant. ☐ The rate of return on capital is constant. ☐ The capital stock per head rises over time. ☐ Growth rates differ across countries.
4. Does the CKR model admit several saddle paths?	☐ Yes. ☐ No. ☐ The question is meaningless.
5. A market equilibrium is a situation in which:	☐ The benevolent planner allocates efficiently between surplus and profits. ☐ Agents interact on markets. ☐ Every agent solves their own optimization problem. ☐ Markets clear. ☐ Markets are complete.
6. In the phase diagram, why does the vertical line lie to the left of the maximum of the $\dot{\kappa}_t = 0$ locus?	☐ Because beyond it we are no longer on the saddle path. ☐ Because $\rho > n + (1 - \theta)g$. ☐ Because similar shapes have been observed empirically. ☐ Because we assume that no dynamic inefficiency occurs.