

Explain the details of Romer's equation (9.6). Why is this the appropriate maximand for a firm?

Equation (9.22) can be written $rq(t) = \pi[K(t)] + \dot{q}(t)$. Explain why this is an appropriate equilibrium condition for an owner of capital given that q is the value (price) of a unit of installed capital. Your intuition should consider the interest income available by selling the capital and buying a bond, and the return to owning capital both through productive use and capital gains. (Remember that there is no depreciation in this model.)