

1. Explain the connection when there is no government or foreign trade between the GDP expenditure identity $Y = C + I$ and the equation $\dot{k}(t) = f(k(t)) - c(t) - (n + g)k(t)$.
2. Adding government spending to the GDP identity gives $Y = C + I + G$. How does this relate to the augmented \dot{k} equation $\dot{k}(t) = f(k(t)) - c(t) - G(t) - (n + g)k(t)$, where $G(t)$ is government spending per effective labor unit?
3. Given that households maximize lifetime utility subject to a lifetime budget constraint, why (intuitively) would a temporary change in government spending have a different effect on consumption than a permanent one?