Neoclassical growth model/exogenous growth model

* Long-run growth is the result of continuous technological progress in the form of new goods, markets or processes (Aghion and Howitt, 1998), and is determined exogenously (Solow, 1956; Swan, 1956)
* Key assumptions:
  + Capital is subject to diminishing returns—at some point the amount of new capital produced is only just enough to make up for the amount of existing capital lost due to depreciation, absent any technological progress or labor force growth (Ramsey, 1928; Solow, 1956)
  + Perfect competition
  + An exogenously determined constant rate reflects the progress made in technology (Solow, 1956; Swan, 1956)
* Three key factors:
  + Capital intensities
  + Human capital
  + Technology (not included in the model; exogenous)
* Key implications:
  + Lack of technological change would cease growth by the effects of diminishing returns (Solow, 1956; Swan, 1956)
  + Capital accumulation is also determined by the savings rate and the rate of capital depreciation (Solow, 1956; Swan, 1956)
  + Implies conditional convergence. If a country starts from a lower level of per capita output, it’s expected to attain a higher growth rate (Barro, 1997)
  + The idea of “vintage capital” – new capital is more valuable than old because it’s based on new technologies (Solow). Technological change, capital, and labor each have separate effects on economic growth.
* Problems:
  + Predicts economic convergence, which hasn’t really been seen empirically
  + Incapable of explaining long-run growth in the absence of technological improvements
  + Leaves technological progress out the model
* Improvements:
  + Endogenous growth considered that returns to capital do not diminish because human capital entails knowledge spillovers and external benefits