

# Development: Growth (5/4/2012)

# Econ 390-001

## Definitions

- **Harrod-Domar model** – predicts that growth is proportional to capital investment because the two inputs are labor and capital, but labor is not a binding constraint (there is an oversupply of labor)
- **genius principle** – with a higher population there will be more geniuses who will come up with great ideas benefiting everyone

## Principles

- Why growth matters
  - Growth leads to
    - lower infant mortality rate
    - higher calorie intake
    - less poverty
  - When countries grow the benefits to everyone, not just the rich.
- Investment
  - For many years the basis of foreign aid decisions from the World Bank, the IMF, and many countries and other international organizations was based upon the framework of the Harrod-Domar model.
  - Harrod-Domar model flaws
    - not really a growth model
    - originator disavowed it
    - no oversupply of labor
    - labor and capital are substitutes
    - diminishing returns to capital
    - aid went to consumption
  - The model says growth is proportional to investment (% of GDP that is investment), so the policy prescription is to give foreign aid if a country has underinvestment to target a particular growth rate (meeting a financing gap).
  - The reality was that foreign aid never in practice led to the growth rates targeted (for which the model predicted that domestic investment + foreign aid would be sufficient).
- Technology
  - The Solow Model integrates diminishing returns to capital.
  - Sustained growth tends to zero given a constant rate of addition of machines per person (a given savings rate).
    - There may however be transitional growth from one level of saving to another level.
    - Higher saving economies will reach zero growth at higher income levels.
  - The Solow surprise is that the driver of growth is technology, which is exogenous to the model.
    - Advances in basic science will make each worker more productive, getting around the limited supply of labor.
    - Since all countries have equal access to technology in the form of ideas and knowledge though, this predicts that there should be convergence: higher growth rates in poorer countries and lower growth rates in richer countries.
    - Empirically we don't see convergence.

- Education
  - Empirical evidence shows that education does not cause growth.
    - Growth in primary schooling does not cause growth in income.
  - One problem is teaching does not necessarily cause learning.
    - Years of schooling is a poor proxy for human capital when schools lack basic resources like books, and teachers are picked through political patronage rather than ability.
- Population control
  - Some economists felt that there are a finite number of resources, so fewer people means more resources and jobs to go around per person.
    - Policy prescription: discourage births by providing abortions and condoms.
  - The free market could provide contraceptives just as easily if people wanted them.
    - Condoms are far cheaper than babies for parents.
    - Surveys of how many kids people want match the number of kids they actually have, so free condoms won't change # of kids.
  - population doomsayers
    - Malthus predicted that population would always grow to eat up rises in per capita income so it will never rise above subsistence.
    - Paul Ehrlich suggested the food supply can't possibly keep up with the population, so there will be mass famines.
    - Both were very wrong.
  - In a famous bet Julian Simon predicted that the cost of resources would fall while Paul Ehrlich predicted they would rise. Simon let Ehrlich pick 5 resources to track over 10 years and they bet \$10,000 on the future value. All 5 fell in price.
  - Parents in rich countries have less children than parents in poor countries because they invest more in each child's upbringing (quality emphasized over quantity).
    - Many industrial countries now have negative population growth (without immigration).
- Conditional loans
  - Conditional loans have historically not led to growth.
  - Countries don't actually meet the conditions, but the donors keep providing the loans anyway.
    - E.g., the bureaucrat managing the loan wants to keep his department's budget large.
  - The loans create bad incentives: countries with bad policies get the most loans while countries with good policies get the fewest loans.
    - If a country wants foreign aid, it is thus in its best interest to have bad policies.
  - In the few cases donors actually do demand performance of conditions, recipients often game the system through fishy accounting.
    - Countries cut investment in infrastructure or privatize industries reducing deficits this year while ballooning deficits in the future.
- Debt forgiveness
  - Donor countries feel bad for the poor and forgive debt even when recipient countries have terrible government policies and fail to meet the conditions of the foreign aid.
    - This incentivizes recipient countries to continue their terrible policies.
    - Recipient countries replace forgiven debt with new debt of the same amount.
  - Easterly suggests debt relief should only be given to countries who have proven they are now following responsible policies and should only be given once, not repeatedly.

- Increasing returns
  - Entrepreneurs can get around diminishing returns to capital given a fixed amount of labor by making it more productive with technology.
    - Knowledge is a type of human capital. Because ideas are non-rivalrous, knowledge can leak out and make others more productive.
    - Solow had taken technology as exogenous to the model (provided by science), but Paul Romer made knowledge endogenous to the model in that people would respond to incentives by deciding whether it is worth their opportunity cost to seek out knowledge.
  - One factor is matching: people get a higher return from investing in knowledge acquisition (from increasing their productivity) if others around them also have high skill (knowledge is complementary to other knowledge).
    - High skilled individuals want to match with other high skilled individuals.
    - In rich countries already, a virtuous circle of learning is created that incentivizes low skilled people to get more knowledge.
    - Poor countries often see that there are no high skilled people to match with, so it is not worth investing in knowledge acquisition.
      - This is a vicious cycle creating a trap.
  - Easterly suggests government should subsidize knowledge and capital accumulation to help get the poor out of the low skilled trap.
- Creative destruction
  - Poor countries without vested interests in old technology (old capital companies are depreciating) can leap ahead by immediately adopting the newest technology.
  - Which country discovers and adopts which technology can have some path dependence on other technologies adopted.
  - Technology can be complementary to other technology rather than being a substitute (replacement). Thus it is possible for technology to have increasing returns to scale.
- Luck
  - Poor countries are more vulnerable than rich countries to natural disasters such as famine, hurricanes, earthquakes, tsunamis, and disease.
    - These disasters can trap the poor in a vicious circle of poverty.
  - It is possible that economists sometimes overanalyze data and try to explain growth variations with interesting controllable factors that are really the result of luck.
  - Terms of trade swings and wars may be beyond the control of the country.
  - Even with a lot of randomness, you may be able to make good predictions with mean reversion.
- Government
  - Bad government policies kill growth.
  - Government usually employs these irrational policies due to a combination of corruption and polarization which leads officials to seek quick expropriation from citizens rather than seeking growth and higher long term expropriation.
  - bad government policies
    - high inflation
    - high black market premium
      - artificially low ER
    - high budget deficit
    - killing banks
    - interest rate ceiling
    - restrictions on free trade
    - inadequate government services

- Corruption
  - Corruption is pervasive in many poor countries and it is a huge contributor to their stagnant or negative growth.
  - Two broad types of corruption
    - centralized corruption
    - decentralized corruption
  - Decentralized corruption is worse for growth because there is a tragedy of the commons where each bureaucrat tries to fleece as much as possible from each person before other bureaucrats.
  - With centralized corruption at least there is a countervailing incentive to promote some growth because the leader running the corruption knows he can capture all of the future money.
  - Quality of institutions affects corruption, including:
    - rule of law
    - quality of bureaucracy
    - freedom from government repudiation of contracts
    - freedom from expropriation
- Polarization
  - It has been empirically shown that society and politicians are less likely to work toward growth when they are polarized with high inequality, high ethnic heterogeneity, or both.
    - Class warfare and ethnic warfare (actual violence and divisive politics) retard growth due to wars of attrition (conflicting policies hurting everyone) & inefficiently contesting community resources (tragedy of the commons).
    - A middle class consensus (flat income distribution, homogenous society) breeds growth.
    - Countries like Japan and Korea have benefited from their homogeneity of language and culture, whereas many African countries are deeply divided with incongruous tribes.
- Conclusion
  - incentives need to be fixed
    - country government incentives
    - donor organization incentives
    - individual incentives