



Notes – Topic 5

Topic 5: Productivity and Growth

- I. Importance of Growth
 - a. Potential GDP → The maximum sustainable GDP, given existing technology with efficient use of resources. Only achievable with no waste of resources (unemployment, unused capital, etc).
 - b. Short-term ups / downs of business cycle take place within the context of fixed potential GDP. Asks the question “Are we *achieving* that GDP?”
 - c. Long-term trend in potential GDP = GROWTH.
 - i. Normally expanding.
 - ii. By far the more important (short-term vs. long-term) for human well-being.
 1. If not achieving potential GDP, there are some negative ramifications (eg unemployment) but the long-term trend is far more significant.
 2. If potential GDP is high, even in an economic slump standard of living is still fairly high.
 3. If potential GDP is low, even in boom periods living standards are still low.
 - iii. Need sustained growth in potential GDP over many years. Nations with such growth become wealthy easily.
 - d. Though growth is undoubtedly the most important in poorer nations, its importance in wealthy nations like the United States is questionable. Should the US be focusing its economic attention on issues like environmental protection and equality rather than growth?
- II. Productivity and per capita GDP
 - a. The kind of growth that helps increase standard of living is in per capita GDP
 - i. Total GDP growth of 3% with no population growth means higher per capita GDP.
 - ii. Total GDP growth of 3% with population growth of 3% means no change in per capita GDP
 - iii. Total GDP growth of 3% with population growth of 5% means *decrease* in per capita GDP
 - iv. In more prosperous nations there is very little growth in population so an increase in total GDP translates almost directly to a growth in per capita GDP.
 - b. Only way to get long-term sustained growth is to increase labor productivity.
 - i. Productivity → Measure of the output per worker in a given period of time. Measured in “widgets per hour,” for example.
 - c. Productivity is NOT the same as per capita GDP.
 - i. Per capita GDP = per PERSON
 - ii. Productivity = per WORKER
 - iii. Per capita GDP is measure of living standards, while productivity is a measure of efficiency.
 - iv. More efficient production does generally lead to higher per capita GDP, but there are other ways to do that.
 1. In short-run, put more people to work.
 2. Only *short-term* solutions. Once 100% of population is working (or an even lower practical limit excluding children, the handicapped, etc), per capita GDP cannot be increased further by that method.
 3. So only long-term solution is to increase productivity
 - d. Only two ways to increase productivity
 - i. Increase the amount of capital per worker
 1. K/L (Capital:Labor ratio)
 2. Quantity of capital average worker has to work with.
 3. ‘Capital’ *used* to mean only physical tools.

- a. Invite glassmaker to make a glass, but without tools – it will take a long time if it's possible at all.
 - b. Allow the glassmaker to have full use of the tools peculiar to glass making and he can work very quickly.
 - c. Industrial machines, computers, etc.
- 4. NOW 'capital' also includes human capital (H)
 - a. Skills, training, education of individual workers
 - b. Workers with greater training are also more productive.
 - c. Must be saved like physical capital.
- 5. Does NOT include financial assets (money, stocks, bonds) which are normally included with 'capital'
- 6. Investment = Process of increasing capital (I)
 - a. Financed by saving → Portion of income not used for current consumption.
 - b. Sending child to college or training program
 - c. Adding new machinery or computers
- ii. Increase technological capability
 - 1. Practical knowledge pertaining to production.
 - 2. As technological advances, so does productivity.
 - 3. Border between technological and capital is fuzzy, but conceptually they're very different.
 - 4. Technology might also include new ways of organizing production process using existing capital.
 - 5. Technical progress → Advancement of technological know-how.
 - 6. In history, technology developed very slowly.
 - a. Advancements brought by workers in a field getting new ideas from experience.
 - b. Between fall of Rome and US colonies very little progress was made.
 - 7. Modern technological advancement is a completely separate field of economic activity.
 - a. University / Government / Industrial labs explicitly in business of promoting technological advancement.
 - b. Big reason why technological progress has accelerated to a pace unprecedented in history.