Ch 23. Economic growth

Principles of Macroeconomics

ECON 102

Outline

- The basics of economic growth
- Long term growth trends
- How potential GDP grows
- Why labor productivity grows
- Is economic growth sustainable?

Definition

- Economic growth is the expansion of production possibilities
  - The economy is growing if not only the GDP is increasing, but its capacity and ability to produce increases
  - Potential GDP has to increase
- Growth rate can be measured by looking at changes in real GDP
  - $growth\ rate = \frac{final\ year - base\ year}{base\ year} \times 100\%$
  - As population increases, the real GDP should grow as well

Determining economic growth

- Another approach is to look at the growth of real GDP per capita that measures average income (standard of living)
  - Not only that we want the country to keep on growing, we want better standard of living as well
- Real GDP can increase due to business cycle (expansion during business cycle vs. expansion of potential GDP)
  - Fluctuations vs. trend

Sustained growth

- We want our economy to keep on growing, and a sustained growth in the long term can be impactful
- The <u>rule of 70</u> states that the doubling time is approximately 70 divided by the growth rate
  - A sustained 1% growth rate would double the initial value in 70 years
  - A sustained 2% growth rate would double the initial value in 35 years

Long-term growth trends

- https://www.youtube.com/watch?v=WjVHvC9EeB4
- Convergence theory
    - The poorer countries will grow at a higher rate, catching up to the richer countries in the long-run

How potential GDP grows

- Potential GDP is the level of real GDP when the quantity of labor employed is the full-employment quantity
- Potential GDP depends on:
  - Aggregate production function → how real GDP changes when the number of workers changes
    - An increase in the number of worker will move the country along the production function
  - Aggregate labor market → to determine the quantity of workers who are employed
    - Supply and demand of labor

Labor market (1)

- Supply of labor depends on the wage rate that the potential workers would be willing to accept the job offer
  - Reservation wage
  - The higher the wage rate, the more potential workers would be willing to work
- Demand for labor depends on the jobs available given the current wage rate
  - If the wage rate is low, companies would be willing to hire more workers
- The labor market depends on the real wage rate, which is the money wage rate divided by the price level

Labor market (2)

- Labor market equilibrium is when the supply of labor and demand for labor curves intersect
  - When the market wage rate is too high, the quantity of labor supplied will be higher than the quantity of workers demanded. This causes a <u>surplus of workers</u>
    - Real wage rate will have to decrease back to the equilibrium
  - When the market wage rate is too low, the quantity of labor supplied will be less than the quantity of workers demanded. This causes a <u>shortage of workers</u>
    - Real wage rate will have to increase back to the equilibrium

What about potential GDP growing?

- Potential GDP would grow if
  - Supply of labor is growing (more resources)
    - More working hours
    - Higher employment-to-population ratio
    - Higher working age population
  - Labor productivity is growing (more productive)
    - Higher education
    - Better technology
    - Innovation

Potential GDP growth

- Population growth increases the potential GDP. However, the labor market is also affected
  - A supply shock, causing the supply of workers curve to shift rightwards, lowering the real wage rate
  - GDP per capita may not necessarily increases
- Increase in labor productivity increases the potential GDP. The labor market is also affected
  - A demand shock, causing the demand for workers to shift rightwards
  - With better productivity, more goods and services can be produced, increasing the revenue of the firm. The firm can now higher more workers

Is economic growth sustainable?

- Classical Growth theory
  - The population growth is exponential, eventually causing an overpopulation but with limited resources
  - Remember about the 4 things that you need to produce goods and services!
  - In the end, back to subsistence level
- Neoclassical growth theory
  - Economic growth happens because of technological change
  - Technological induces savings and investment. However, there is diminishing return
- New growth theory
  - Economic growth happens because of pursuit of profit that creates innovation

Policies for achieving faster growth

- From empirical evidence,
  1. Stimulate savings
  2. Stimulate research and development
  3. Improve the quality of education
  4. Provide international aid to developing countries
  5. Encourage international trade