

Week 3 Recitation

Practice Problems

This week's recitation is focused on economic growth, its causes and its possible consequences. We are going to analyze real world data using Gapminder, aiming to understand how the world economy behaved in the last few decades, and how sustainable those trends can be for the future.

1. The table below pictures the imaginary economy of Wakanda. In the first year, the economy was closed, but after T'Challa appears in front of the United Nations to reveal Wakanda's true state, they became an open economy.

	Year 1	Year 2
Consumption (C)	\$20,000	\$20,000
Investment (I)	\$5,000	\$7,000
Government Expenditure (G)	\$3,000	\$5,000
Exports (X)	-	\$6,000
Imports (M)	-	\$2,000

- a) What is Wakanda's nominal GDP for year 1 and year 2?
 - b) What is Wakanda's trade balance for year 1 and year 2?
 - c) Assume that year 1 is our base year, and the price index for year 2 is 103. What is Wakanda's real GDP for year 1 and year 2?
 - d) How much did Wakanda's nominal GDP grow from year 1 to year 2? If they kept growing at that rate for 5 years, what would be their nominal GDP at the end of that period (consider year 1 as the beginning of the series)?
 - e) Since Wakanda is very intellectually advanced, internationally isolated and highly resourceful, do you believe that they would use GDP as their measure of well-being? Why or why not?
2. Now consider the employment situation in Wakanda. Their total working age population is 250,000 people, but 50,000 of them are "discouraged" and haven't been looking for work nor are they working. There is currently 192,000 people working for pay. What is the unemployment rate? What about the labor force participation rate?

3. Go to gapminder.com/tools. At the right of the screen, there will be a “FIND” button (magnifying glass icon); click it and select three countries that you are interested at comparing and learning more about. At the bottom, put the gray bar all the way to the left, so that the countries that you didn’t select disappear from the graph. Now, select Income in the Y axis and Time in the X axis, then press play at the bottom of the graph. How did income per capita grew over time? Did the countries converge or diverge in terms of income per capita? (Tip: you can change the size of the circles by clicking in “OPTIONS”, then “SIZE”. They reflect the size of the population, but making them smaller may make it easier to observe the trends.)

4. What are the three components of economic growth? Choose one indicator that you believe is a good proxy for each component and compare it with income by using the indicator income as your Y axis and your indicator of choice as your X axis. Do this analysis for only one of the countries you picked in the previous section. Are periods of economic growth associated with growth in each of those indicators? Which indicator (if any) shows a stronger positive relationship? (Tip: use the zoom tool at the right of the graph to adjust the scale.)

5. In general, one of the benefits associated with economic growth is improvements in the conditions of living. For the same country analyzed in the previous question, observe if indeed periods of economic growth are associated with improvements in the Human Development Index.

6. Finally, one of the costs associated with economic growth is the environmental impact. For the same country, observe if indeed periods of economic growth are associated with higher CO2 emissions.