### Homework #5: Chapter 7
#### Production and Growth

<table>
<thead>
<tr>
<th>Country</th>
<th>Current real GDP/person</th>
<th>Current growth rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northcountry</td>
<td>$15,468</td>
<td>1.98%</td>
</tr>
<tr>
<td>Southcountry</td>
<td>$13,690</td>
<td>2.03%</td>
</tr>
<tr>
<td>Eastcountry</td>
<td>$6,343</td>
<td>3.12%</td>
</tr>
<tr>
<td>Westcountry</td>
<td>$1,098</td>
<td>0.61%</td>
</tr>
</tbody>
</table>

1. Which country is the richest? How do you know?

2. Which country is advancing most quickly? How do you know?

3. Which country would likely see the greatest benefit from an increase in capital investment? Why?

4. Referring to (3), would this country continue to see the same degree of benefits from an increase in capital investment forever? Why?

5. Which country has the potential to grow most quickly? List some reasons why it might not be living up to its potential.
The “rule of 70” is a neat little mathematical trick. If some variable grows at a rate of \( x \) percent per year, then its value will double in approximately \( 70/x \) years. i.e. If the growth rate is 1\% per year, it will take 70 years to double. If the growth rate is 4\% per year, it will take 17 years to double. This is because growth is compounded – each year’s growth is based on the previous year’s accumulated growth.

Suppose that real GDP/person in Fastcountry grows at a rate of 2\% per year and that real GDP/person in Slowcountry grows at a rate of 1\% per year.

6. How many years does it take for real GDP/person to double in Fastcountry?

7. If real GDP/person in Fastcountry was $2000 in 1930, how much will it be in the year 2000?

8. How many years does it take for real GDP/person to double in Slowcountry?

9. If real GDP/person in Slowcountry was $2000 in 1930, how much will it be in the year 2000?

Multiple Choice Questions
10. A reasonable measure of the standard of living in a country is
a. real GDP per person.
b. real GDP.
c. nominal GDP per person.
d. nominal GDP.
e. the growth rate of nominal GDP per person.

11. Many East Asian countries are growing very quickly because
a. they have enormous natural resources.
b. they are imperialists and have collected wealth from previous victories in war.
c. they save and invest an unusually high percentage of their GDP.
d. they have always been wealthy and will continue to be wealthy which is known as the “snowball effect”.

12. Using the rule of 70, if your nominal income grows at 10\% per year, your nominal income will double in approximately
a. 7 years.
b. 10 years.
c. 70 years.
d. 700 years.
e. There is not enough information to answer this question.
13. The opportunity cost of growth is
   a. a reduction in current investment.
   b. a reduction in current saving.
   c. a reduction in current consumption.
   d. a reduction in taxes.

14. We should expect an increase in productivity within a nation when there is an increase in each
    of the following except
   a. human capital per worker.
   b. physical capital per worker.
   c. natural resources per worker.
   d. labor.
   e. technological knowledge.

15. Which of the following statements is true?
   a. Countries may have a different level of GDP per person but they all grow at the same rate.
   b. Countries may have a different growth rate but they all have the same level of GDP per person.
   c. Countries all have the same growth rate and level of output because any country can obtain the
      same factors of production.
   d. Countries have great variance in both the level and growth rate of GDP per person; thus, poor
      countries can become relatively rich over time.

16. To increase growth, governments should do all of the following except
   a. promote free trade.
   b. encourage savings and investment.
   c. control population growth.
   d. encourage research and development.
   e. nationalize major industry.

Critical Thinking Question

You are discussing economic growth with your roommate. Your conversation turns to a
supposed lack of growth and opportunity in the United States when compared to some Asian
countries such as Japan, South Korea, Taiwan, and Singapore. You roommate says, “These
Asian countries must have cheated somehow. That’s the only way they could have possibly
grown so quickly.”

17. What have you learned in this chapter that would make you question this assertion?

18. Are the high growth rates found in these Asian countries without cost?