**ECON 1000 – Contemporary Economic Issues “Gross Domestic Product and Economic Growth”**

# Relevant Readings from the Required Textbooks:

* Chapter 7, *Gross Domestic Product and Economic Growth*

# Definitions and Concepts:

* **gross domestic product** – the total market value of all final goods and services produced within a society over a certain period of time
* **intermediate good** – a good used in the production process that is not a final good or service
* **consumption expenditures** – purchases of newly produced goods and services by households (denoted by *C* )
* **private investment expenditures** – purchases of newly produced goods and services by firms (e.g., spending on new plants and equipment) (denoted by *I* )
* **government purchases** – purchases of newly produced goods and services by local, state, or federal government (denoted by *G* )
* **import** – a good or service produced in a foreign country and purchased by someone in the home country
* **export** – a good or service produced in the home country and sold in a foreign country
* **net export** – exports minus imports (denoted by *NX* )
* **trade deficit** – the excess of imports over exports
* **trade surplus** – the excess of exports over imports
* *Y* = *C* + *I* + *G* + *NX*
* **real GDP** – the value of GDP computed using prices from an arbitrary base year (i.e., a measure of GDP that controls for changes in prices, since across different periods goods/services are valued at common, constant prices)
* **nominal GDP** – the value of GDP computed using current period prices
* **real GDP per capita** – value of real GDP divided by total population of the country
* **Industrially Advanced Countries (IAC’s)** – high income countries with primarily market based economies, large stocks of technologically advanced industrial capital, and a highly educated and skilled workforce (e.g., U.S., Norway, Australia, Germany, Japan)
* **Less Developed Countries (LDC’s)** – lower income countries which are held back by some combination of poor economic institutions, undeveloped industrial capital, and/or an uneducated and unskilled workforce (e.g., India, Ghana, Bangladesh, and the Democratic Republic of the Congo)
* **economic development** – improvements over time in a society’s quality of life and living standards
  + by definition, very qualitative in nature
  + includes, but not limited to, increased consumption of material goods/services
* **economic growth** – sustained increases over time in a society’s value of Real GDP
  + graphically illustrated by an outward shift of the PPF
  + measured quantitatively as the percentage increase in Real GDP
* **GDP growth rate** – annual percentage change in the value of real GDP
* **catch-up effect** – conjecture that (all other factors fixed) the growth rates of less developed countries will exceed the growth rates of developed countries, allowing the

less developed countries to “catch up” over time

* **Rule of 72** – the observations that a variable that grows at a constant rate of “X% per period” will double in value in approximately “(72/X) periods”
* **physical capital** – machines, building, factories, and other equipment used in the production process
* **human capital** – the knowledge, education, skills, experience, work ethic, inter- personal skills, and other attributes of workers which determine productivity
* **technology** – the application of scientific and engineering principles to the problem of production
* Four broad sources of economic growth (i.e., changes that would lead to an “outward movement of PPC over time”)...

1. Increases in the quantity of labor (i.e., more workers)
2. Increases in the quantity of physical capital (e.g., more factories, trucks, computers, electricity plants)
3. Improvements in quality of labor (e.g., workers are more highly educated/skilled)
4. Improvements in technology

* three common ways to achieve economic growth:

1. Deliberate investments in human capital and physical capital (either by individuals or society) => when a society devotes more resources to producing capital goods today, they will have more capital goods available in the future (but, at the expense of having fewer consumer goods in the present period)
2. Deliberate investments by society in overhead capital (**overhead capital** – basic infrastructure such as railways, roads, telecommunications networks, electricity supply systems, water supply systems)
3. Realize improvements in technology which fundamentally alter the type of capital available or the production process => most economic growth in recent decades and centuries has come from improvements in technology

* three impediments to achieving growth:

1. difficulties in developing physical capital
   * **Vicious-cycle-of-poverty hypothesis** – conjecture that poor countries will remain poor since they do not have sufficient resources available to make the investments in capital which are necessary for economic growth
   * **Capital flight** – tendency for wealthy people in poor countries to invest their financial capital abroad instead of at home
2. difficulties in developing human resources
   * poor health outcomes degrade human resources
     + 2015: 438,000 malaria deaths (90% in Africa)
     + 2014: 1.2 million AIDS-related deaths (65% in Africa)
   * **brain drain** – tendency for the most highly talented people from developing countries to become educated and then move to an already wealthy country
3. poor legal, political, and economic institutions
   * **Rule-of-Law** – environment in which property rights and contracts are respected and administered fairly and transparently, without favoritism
     + countries lacking rule-of-law have difficulty achieving growth
   * **Crony Capitalism** – environment in which well-connected unscrupulous business people use corrupt political systems to their advantage in order to obtain preferential treatment from government (e.g., government contracts, subsidies, bailouts, tax loopholes)
     + in such an environment, the efficient use of resources is distorted to the detriment of economic growth
   * Government ownership/control of productive resources (i.e., a reliance on planning instead of markets, socialism instead of capitalism)
     + government ownership of resources removes profit motive => reduced incentive to create value and innovate to reduce costs (dampening economic growth)

# Multiple Choice Questions:

1. Suppose that “County Z” were to realize a constant GDP Growth Rate of 4% per year. It follows that Real GDP would double in roughly years. (72 rule) A.4

B. 18

C. 25

D. 72

1. A society can achieve economic growth by
   1. making deliberate investments in human capital and physical capital.
   2. making deliberate investments in overhead capital.
   3. realizing an improvement in technology.
   4. More than one (perhaps all) of the above answers is correct.
2. The “Catch-up effect” suggests that, all other factors fixed,
   1. the global economy is “rigged against new entrants,” in that there is no way for poor countries to catch-up with rich countries.
   2. growth rates of less developed countries typically exceed growth rates of

developed countries, implying that the gap in GDP between less developed and developed countries will decrease over time.

* 1. whenever a countries experiences rapid growth in GDP, they must also experience an increase in income inequality.
  2. the only way for firms in high tech industries to catch-up to their competitors is to invest large amounts of resources in research and development.

1. The vicious-cycle-of-poverty
   1. suggests that poverty is self-perpetuating, because poor countries do not have sufficient resources available to make the investments in capital which are necessary for economic growth.
   2. is apparently true, since every country that was poor a century ago is still poor today.
   3. has no merit whatsoever, since even poor societies typically have an

overabundance of financial capital.

* 1. More than one (perhaps all) of the above answers is correct.

1. Qihong was born in China. Throughout his entire life he has excelled academically. After earning a Master’s degree from the China University of Mining and Technology in Beijing, he came to the United States to pursue a PhD. Upon completion of his PhD he was hired by a prestigious research university in Oklahoma, where he works to this day. This story provides an illustration of the
   1. Rule of 72.
   2. vicious-cycle-of-poverty.
   3. catch-up effect.
   4. brain drain.
2. A good that is used in the production process that is not (itself) a final good or service is
   1. an inferior good
   2. a necessary good
   3. an intermediate good
   4. a permanent good
3. “Real GDP Per Capita” is defined as
   1. the value of Real GDP divided by the value of nominal GDP.
   2. the value of Real GDP minus the value of nominal GDP.
   3. the value of Real GDP multiplied by total population.
   4. the value of Real GDP divided by total population.
4. broadly refers to the knowledge, education, skills, experience, work ethic, inter-personal skills, and other attributes which determine worker productivity.
   1. Physical Capital
   2. Human Capital
   3. Worker Mortality
   4. Technology
5. When observing “Average Annual Working Time” across different countries, it was noted that the typical worker in the U.S. spends roughly 1,790 hours per year working. In comparison to other countries, this is
   1. more hours than any other country in the World (since the country with the second highest value is Mexico, with a figure of 1,708 hours per year).
   2. fewer hours than any other country in the World (since the country with the second lowest value is Japan, with a figure of 1,812 hours per year).
   3. higher than the figure for Germany (1,371 hours), roughly equal to the figure for Italy (1,725 hours), but lower than the figure for South Korea (2,113 hours).
   4. exactly equal to the World average, since there is no variability whatsoever in “Average Annual Working Time” across different countries.
6. Economic Growth is
   1. simply a result of whether or not a country has access to natural resources (and is therefore simply determined by “chance” or “nature”).
   2. defined as a sustained increases over time in a society’s value of real GDP.
   3. visually illustrated by an inward shift of the Production Possibilities Frontier.
   4. More than one (perhaps all) of the above answers is correct.
7. Ilan Moschidae owns Nikola Motors, a company that produces electric cars. He has exploited his political connections in order to get legislators in his state to give Nikola Motors an interest free loan to build a new factory. This appears to be an example of
   1. economic growth.
   2. rule-of-law.
   3. crony capitalism.
   4. the Rule of 72.
8. For a hypothetical economy in a given year, GDP was $10,000, consumption equaled

$9,800, investment equaled $125, goods exported equaled $255, and goods imported equaled $500. What was government spending equal to?

A. $380

B. $245

C. $200

D. $320

## For Questions 13 and 14, consider a society facing the tradeoffs between “Consumption Goods” and “Capital Goods” which are illustrated by the Production Possibilities Frontier below. The curve labeled “1986 PPF” illustrates the PPF of this society in 1986. In 1986 this society chose “Point A” on this curve. As a result, by 2016 the society faced the PPF labeled “2016 PPF.”

*Capital Goods*

*Consumption Goods*



*2016*

*PPF*

*1986*

*PPF*

B

A

0

0

1. The “outward shift” of the PPF (from “1986 PPF” to “2016 PPF”) which occurred between 1986 and 2016 could be best described as
   1. an increase in demand.
   2. inflation.
   3. economic growth.
   4. economic development.
2. If this society had instead chosen “Point B” in 1986, then the relevant PPC in 2016 would likely lie in the graph above.
   1. somewhere below the curve labeled “1986 PPC”
   2. somewhere between the curves labeled “1986 PPC” and “2016 PPC” C. exactly on the curve labeled “2016 PPC”

D. somewhere beyond the curve labeled “2016 PPC” (i.e., further from the

origin)

1. Maurice is a citizen of Canada, but lives, works, and attends school in the United States. Last year he went on vacation to Mexico during Spring Break. In order to pay for his college tuition, he works at a daycare in Roswell, GA. Last year he provided “daycare services” valued at $19,500. The value of these services would be included in the calculation of GDP for
   1. only Canada, since he is a Canadian citizen.
   2. only the United States, since that is where the production took place.
   3. only Mexico, since that is where he went to relax on vacation (which was

a necessary activity for him to be able to work hard in school and on the job throughout the rest of the year).

* 1. None of the above answers are correct.

## For questions 16 and 17, consider a country with consumption expenditures, private investment expenditures, government purchases, imports, and exports as summarized in the table below (each measured in millions of dollars):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **consumption expenditures** | **investment expenditures** | **government purchases** | **imports** | **exports** |
| $897 | $212 | $335 | $196 | $234 |

1. For this country, “net exports” are equalto
   1. $38 million.
   2. $234 million.
   3. $430 million.
   4. $1,874 million.
2. For this country, Gross Domestic Product is equalto
   1. $897 million.
   2. $1,482 million.
   3. $1,678 million.
   4. $1,874 million.
3. High income countries with primarily market based economies, large stocks of technologically advanced industrial capital, and a highly educated and skilled workforce (such as the United States, Norway, Australia, Germany, and Japan) are referred to as
   1. “Commercially Dependent Countries.”
   2. “Less Developed Countries.”
   3. “Industrially Advanced Countries.”
   4. “Economically Superior Countries.”

# Answers to Multiple Choice Questions:

1. B
2. D
3. B
4. A
5. D
6. C
7. D
8. B
9. C
10. B
11. C
12. D
13. C
14. D
15. B
16. A
17. B
18. C