

SOLUTIONS TO TEXT PROBLEMS:

Questions for Review

1. The level of a nation's GDP measures both the total income earned in the economy and the total expenditure on the economy's output of goods and services. The level of real GDP is a good gauge of economic prosperity, and the growth rate of real GDP is a good gauge of economic progress. You would rather live in a nation with a high level of GDP, even though it had a low growth rate, than in a nation with a low level of GDP and a high growth rate, because the level of GDP is a measure of prosperity.
2. The four determinants of productivity are: (1) physical capital, which is the stock of equipment and structures that are used to produce goods and services; (2) human capital, which consists of the knowledge and skills that workers acquire through education, training, and experience; (3) natural resources, which are inputs into production that are provided by nature; and (4) technological knowledge, which is society's understanding of the best ways to produce goods and services.
3. A college degree is a form of human capital. The skills learned in earning a college degree increase a worker's productivity.
4. Higher saving means fewer resources are devoted to consumption and more to producing capital goods. The rise in the capital stock leads to rising productivity and more rapid growth in GDP for a while. In the long run, the higher saving rate leads to a higher standard of living. A policymaker might be deterred from trying to raise the rate of saving because doing so requires that people reduce their consumption today and it can take a long time to get to a higher standard of living.
5. A higher rate of saving leads to a higher growth rate temporarily, not permanently. In the short run, increased saving leads to a larger capital stock and faster growth. But as growth continues, diminishing returns to capital mean growth slows down and eventually settles down to its initial rate, though this may take several decades.
6. Removing a trade restriction, such as a tariff, would lead to more rapid economic growth because the removal of the trade restriction acts like an improvement in technology. Free trade allows all countries to consume more goods and services.
7. The higher the rate of population growth, the lower is the level of GDP per person because there's less capital per person, hence lower productivity.
8. The U.S. government tries to encourage advances in technological knowledge by providing research grants through the National Science Foundation and the National Institute of Health, with tax breaks for firms engaging in research and development, and through the patent system.

Problems and Applications

1. The facts that countries import many goods and services yet must produce a large quantity of goods and services themselves to enjoy a high standard of living are reconciled by noting that there are substantial gains from trade. To be able to afford to purchase goods from other countries, an economy must generate income. By producing many goods and services,

- then trading them for goods and services produced in other countries, a nation maximizes its standard of living.
2.
 - a. More investment would lead to faster economic growth in the short run.
 - b. The change would benefit many people in society who would have higher incomes as the result of faster economic growth. However, there might be a transition period in which workers and owners in consumption-good industries would get lower incomes, and workers and owners in investment-good industries would get higher incomes. In addition, some group would have to reduce their spending for some time so that investment could rise.
 3.
 - a. Private consumption spending includes buying food and buying clothes; private investment spending includes people buying houses and firms buying computers. Many other examples are possible. Education can be considered as both consumption and investment.
 - b. Government consumption spending includes paying workers to administer government programs; government investment spending includes buying military equipment and building roads. Many other examples are possible.
 4. The opportunity cost of investing in capital is the loss of consumption that results from redirecting resources toward investment. Over-investment in capital is possible because of diminishing marginal returns. A country can over-invest in capital if people would prefer to have higher consumption spending and less future growth. The opportunity cost of investing in human capital is also the loss of consumption that is needed to provide the resources for investment. A country could over-invest in human capital if people were too highly educated for the jobs they could get—for example, if the best job a Ph.D. in philosophy could find is managing a restaurant.
 5.
 - a. The United States benefited from the Chinese and Japanese investment because it made our capital stock larger, increasing our economic growth.
 - b. It would have been better for Americans to make the investments because then they would have received all of the returns on the investments, instead of the returns going to China and Japan.
 6. Greater educational opportunities for women could lead to faster economic growth in these developing countries because increased human capital would increase productivity and there would be external effects from greater knowledge in the country. Second, increased educational opportunities for young women may lower the population growth rate because such opportunities raise the opportunity cost of having a child.
 7. Answers will vary. For example, countries with high scores include (2014 GDP per capita in parenthesis) Finland (\$35,900), New Zealand (\$30,400), Luxembourg (\$77,900), and Norway (\$55,400) and countries with low scores include Venezuela (\$13,600), Haiti (\$1,300), Myanmar (\$1,700), and Bangladesh (\$2,100). The pattern is clear. Countries with high Property Right Index scores have high GDP per capita and countries with low Property Right Index scores have low GDP per capita. Property rights allow people to exercise authority over the resources they own. With well-defined and enforced property rights, markets coordinate efficiently with prices. Also, domestic saving and investment from abroad are lower with poorly-defined or enforced property rights.

8.
 - a. Individuals with higher incomes have better access to clean water, medical care, and good nutrition.
 - b. Healthier individuals are likely to be more productive.
 - c. Understanding the direction of causation will help policymakers place proper emphasis on the programs that will achieve both greater health and higher incomes.
9. Peace would promote economic growth because it is an indication that property rights will be respected in the future. Armed conflict and the threat of a revolutionary government reduce domestic residents' incentive to save, invest, and start new businesses. Moreover, foreigners have less incentive to invest in the country.

Easy taxes would promote economic growth because they result in citizens and businesses retaining a greater share of the income they earn and, thus, being able to save and invest a greater portion of that income.

A tolerable administration of justice would promote economic growth because it would ensure the maintenance of property rights, which encourages domestic saving and investment from abroad.