***Macroeconomics, 8e, Global Edition* (Blanchard)**
Chapter 11: Saving, Capital Accumulation, and Output

11.1 Interactions between Output and Capital

1) An increase in the saving rate will affect which of the following variables in the long run?
A) output per worker
B) capital per worker
C) the level of investment
D) all of these

2) A reduction in the saving rate will *not* affect which of the following variables in the long run?
A) output per worker
B) the growth rate of output per worker
C) the amount of capital in the economy
D) capital per worker
E) none of these

3) Which of the following will cause an increase in output per worker in the long run?
A) an increase in the saving rate
B) a reduction in the depreciation rate
C) an increase in the stock of human capital
D) all of these

4) Which of the following statements is always true?
A) Investment equals depreciation.
B) Investment equals the capital stock minus depreciation.
C) The capital stock is equal to investment minus depreciation.
D) Any change in the capital stock is equal to investment minus depreciation.
E) The increase in investment is equal to the capital stock minus depreciation.

5) Which of the following is *not* a flow variable?
A) investment
B) saving
C) the money supply
D) output
E) all of these

6) The capital-labor ratio will tend to decrease over time when
A) investment per worker equals saving per worker.
B) investment per worker is less than saving per worker.
C) investment per worker exceeds depreciation per worker.
D) saving per worker equals depreciation per worker.
E) output per worker exceeds capital per worker.

7) In the absence of technological progress, which of the following remains constant in the steady

state equilibrium?
A) investment per worker
B) output per worker
C) saving per worker
D) all of these
E) investment per worker and output per worker

8) Suppose, due to the effects of a military conflict that has ended, that a country experiences a large reduction in its capital stock. Assume no other effects of this event on the economy. Which of the following will tend to occur as the economy adjusts to this situation?
A) a relatively low growth rate for some time
B) a relative high growth rate for some time
C) zero growth for some time, followed by a gradually increasing growth rate
D) positive growth, followed by negative growth, and then zero growth
E) none of these

11.2 The Implications of Alternative Saving Rates

1) For this question assume that technological progress does not occur. The rate of saving in Canada has generally been greater than the saving rate in the U.S. Given this information, we know that in the long run
A) Canada's growth rate will be greater than the U.S. growth rate.
B) investment per worker in Canada will be no different than U.S. investment per worker.
C) capital per worker in Canada will be no different than U.S. capital per worker.
D) all of these
E) none of these

2) When an economy is operating at the steady state, we know that
A) steady state saving equals consumption.
B) steady state saving is less than total consumption.
C) steady state saving is equal to depreciation per worker.
D) steady state saving exceeds depreciation each year by a constant amount.
E) none of these

3) In the absence of technological progress, which of the following is true when the economy is operating at the steady state?
A) The growth of output per worker is zero.
B) The growth of output per worker is equal to the saving rate.
C) The growth of output per worker is equal to the rate of investment.
D) The growth of output per worker is equal to the rate of depreciation.
E) none of these

4) In the absence of technological progress, an increase in the saving rate will cause which of the following?
A) increase temporarily the growth of output per worker
B) increase the steady state growth of output per worker
C) decrease temporarily the growth of output per worker
D) decrease the steady state growth of output per worker
E) have an ambiguous effect on the growth of output per worker

5) In the absence of technological progress, we know with certainty that an increase in the saving rate will cause which of the following?
A) increase steady state consumption
B) decrease steady state consumption
C) have no effect on steady state consumption
D) increase steady state consumption only if the increase in saving exceeds the increase in depreciation
E) increase steady state consumption only if the increase in saving is less than the increase in depreciation

6) In the absence of technological progress, we know that the level of output per worker in the steady state will

A) increase over time.
B) remain constant.
C) decrease as a result of decreasing returns to scale.
D) increase or decrease, depending on the rate of saving.
E) increase or decrease, depending on the rate of depreciation.

7) As an economy adjusts to an increase in the saving rate, we would expect output per worker
A) to increase at a constant rate and continue increasing at that rate in the steady state.
B) to increase at a permanently higher rate.
C) to decrease at a permanently higher rate.
D) to return to its original level.
E) none of these

8) Our model of long-run economic growth suggests that
A) the U.S. growth slowdown since 1950 has been caused largely by low saving in the U.S.
B) a higher rate of saving in the U.S. cannot do much to increase the U.S. growth rate over the next two decades.
C) saving in the U.S. has exceeded the golden-rule level.
D) all of these
E) none of these

9) The Social Security system in the United States was introduced in which year?
A) 1915
B) 1935
C) 1945
D) 1955
E) none of these

10) Suppose there is an increase in the saving rate. This increase in the saving rate must cause an increase in consumption per capita in the long run when
A) capital per worker approaches the golden-rule level of capital per worker.
B) the saving is used for education rather than physical capital.
C) the rate of saving exceeds the rate of depreciation.
D) there is no technological progress.
E) technological progress depends on human capital.

11) When steady state capital per worker is above the golden-rule level, we know with certainty that an increase in the saving rate will
A) increase consumption in both the short run and the long run.
B) decrease consumption in both the short run and the long run.
C) decrease consumption in the short run, and increase it in the long run.
D) increase consumption in the short run, and decrease it in the long run.
E) none of these

12) Suppose two countries are identical in every way with the following exception. Economy A has a higher saving rate than economy B. Given this information, we know with certainty that
A) steady state consumption in A is higher than in B.
B) steady state consumption in A is lower than in B.
C) steady state consumption in A and in B are equal.
D) steady state growth of output per worker is higher in A than in B.
E) none of these

13) Suppose two countries are identical in every way with the following exception. Economy A has a greater quantity of human capital than economy B. Given this information, we know with certainty that
A) steady state consumption in A is higher than in B.
B) steady state consumption in A is lower than in B.
C) steady state consumption in A and in B are equal.
D) steady state growth of output per worker is higher in A than in B.

14) Suppose two countries are identical in every way with the following exception. Economy A has a higher rate of depreciation (δ) than economy B. Given this information, we know with certainty that
A) steady state consumption in A is higher than in B.
B) steady state consumption in A is lower than in B.
C) steady state consumption in A and in B are equal.
D) steady state growth of output per worker is higher in A than in B.
E) none of these

15) The countries with the lowest output per capita
A) are rich with human capital, but have little physical capital.
B) are rich with physical capital, but have little human capital.
C) are poor in both human and physical capital.
D) have low living standards in spite of relatively high levels of both human and physical capital.
E) may or may not be poor in human capital, depending on whether the exchange rate or purchasing power parity method is used for comparison.

16) Which of the following are reasons to suspect spending on education might overestimate human capital investment?
A) Education spending leaves out foregone wages.
B) Part of total spending on education is really consumption.
C) Much human capital investment comes from on-the-job training.
D) all of these
E) none of these

17) If endogenous growth models are correct, a lower rate of growth in the long run could occur as a result of which of the following?
A) a lower rate of saving
B) a lower rate of depreciation
C) a redefinition of depreciation
D) a redefinition of the steady state
E) none of these

18) Suppose the following situation exists for an economy: $K_{t+1}/N > K_t/N$. Given this information, we know that
A) saving per worker equals depreciation per worker in period t.
B) saving per worker is less than depreciation per worker in period t.
C) saving per worker is greater than depreciation per worker in period t.
D) the saving rate fell in period t.
E) none of these

19) Suppose the following situation exists for an economy: $K_{t+1}/N = K_t/N$. Given this information, we know that
A) saving per worker equals depreciation per worker in period t.
B) saving per worker is less than depreciation per worker in period t.
C) saving per worker is greater than depreciation per worker in period t.
D) the saving rate fell in period t.
E) steady state consumption is equal to the golden rule level of steady state consumption.

20) At the current steady state capital-labor ratio, assume that the steady state level of per capita consumption, (C/N)*, is less than the golden rule level of steady state per capita consumption. Given this information, we can be certain that
A) an increase in the saving rate will cause an increase in the steady state level of per capita consumption ((C/N)*).
B) a reduction in the capital-labor ratio will cause a reduction in (C/N)*.
C) the capital labor ratio will tend to increase over time.
D) the capital labor ratio will tend to decrease over time.
E) a reduction in the saving rate will have an ambiguous effect on (C/N)*.

21) Suppose the following situation exists for an economy: $K_{t+1}/N < K_t/N$. Given this information, we know that
A) saving per worker equals depreciation per worker in period t.
B) consumption per worker will tend to fall as the economy adjusts to this situation.
C) saving per worker is greater than depreciation per worker in period t.
D) the saving rate increased in period t.
E) none of these

22) The golden rule level of capital refers to
A) the level of capital that maximizes output per worker.
B) the level of capital that maximizes the standard of living.
C) the level of capital that maximizes consumption per worker in the steady state.
D) all of these
E) none of these

23) Suppose the following situation exists for an economy: $K_{t+1}/N = K_t/N$. Given this information, we know with certainty that
A) the economy is operating at the golden rule equilibrium in period t.
B) saving per worker is less than depreciation per worker in period t.
C) saving per worker is greater than depreciation per worker in period t.
D) investment per worker equals depreciation per worker in period t.

24) Suppose the saving rate is initially less than the golden rule saving rate. We know with certainty that a reduction in the saving rate will cause
A) a reduction in the capital labor ratio.
B) a reduction in output per worker.
C) a reduction in consumption per worker.
D) all of these
E) none of these

25) Suppose the saving rate is initially greater than the golden rule saving rate. We know with certainty that a reduction in the saving rate will cause
A) a reduction in the rate of growth in the long run.
B) a reduction in output per worker.
C) a reduction in consumption per worker.
D) all of these
E) none of these

26) Suppose the saving rate is initially greater than the golden rule saving rate. We know with certainty that an increase in the saving rate will cause
A) an increase in the rate of growth in the long run.
B) a reduction in output per worker.
C) a reduction in consumption per worker.
D) all of these
E) none of these

27) Which of the following represents the change in the capital stock?
A) consumption minus depreciation
B) output minus depreciation
C) investment minus saving
D) investment minus depreciation

28) When the economy is in the steady state, we know with certainty that
A) investment per worker is equal to depreciation per worker.
B) consumption per worker is maximized.
C) output per worker is maximized.
D) the growth rate is maximized.
E) all of these

29) Which of the following represents the effects in period t of an increase in the saving rate in period t?
A) no change in K/N
B) no change in Y/N
C) a reduction in C/N
D) all of these

30) Suppose there are two countries that are identical in every way with the following exception: Country A has a lower depreciation rate (δ) than country B. Given this information, we know with

certainty that
A) the growth rate will be the same in the two countries.
B) the growth rate will be higher in A than in B.
C) K/N will be higher in B.
D) Y/N will be higher in B.

31) Suppose the economy is initially in the steady state. An increase in the depreciation rate (δ) will cause
A) a reduction in K/N.
B) a reduction in Y/N.
C) a reduction in C/N.
D) all of these
E) none of these

32) Suppose the economy is initially in the steady state. A reduction in the depreciation rate (δ) will cause
A) an increase in K/N.
B) an increase in the growth rate in the long run.
C) a reduction in C/N.
D) all of these

33) Which of the following will likely cause an increase in output per worker?
A) an increase in education expenditures
B) an increase in the saving rate
C) an increase in on-the-job training
D) all of these

34) Based on our understanding of the model presented in chapter 11, which of the following will cause a permanent increase in growth?
A) an increase in education spending
B) an increase in the saving rate
C) an increase in capital accumulation
D) all of these
E) none of these

35) An increase in the saving rate will *not* affect which of the following variables in the long run?
A) output per worker
B) the growth rate of output per worker
C) the amount of capital in the economy
D) capital per worker
E) none of these

36) The capital-labor ratio will tend to increase over time when
A) investment per worker equals saving per worker.
B) investment per worker exceeds saving per worker.
C) investment per worker is less than depreciation per worker.
D) saving per worker equals depreciation per worker.
E) output per worker is less than capital per worker.

37) In the absence of technological progress, a decrease in the saving rate will cause which of the following?
A) decrease temporarily the growth of output per worker
B) decrease the steady state growth of output per worker
C) increase temporarily the growth of output per worker
D) increase the steady state growth of output per worker
E) have an ambiguous effect on the growth of output per worker

38) In the absence of technological progress, we know with certainty that an decrease in the saving rate will cause which of the following?
A) decrease steady state consumption
B) increase steady state consumption
C) have no effect on steady state consumption
D) decrease steady state consumption only if the decrease in saving exceeds the increase in depreciation
E) decrease steady state consumption only if the decrease in saving is less than the decrease in depreciation

39) As an economy adjusts to an decrease in the saving rate, we would expect output per worker
A) to decrease at a constant rate and continue decreasing at that rate in the steady state.
B) to decrease at a permanently higher rate.
C) to increase at a permanently higher rate.
D) to return to its original level.
E) none of these

40) Suppose the following situation exists for an economy: $K_{t+1}/N < K_t/N$. Given this information, we know that
A) saving per worker equals depreciation per worker in period t.
B) saving per worker is less than depreciation per worker in period t.
C) saving per worker is greater than depreciation per worker in period t.
D) the saving rate fell in period t.
E) none of these

41) At the current steady state capital-labor ratio, assume that the steady state level of per capita consumption, (C/N)*, is *greater* than the golden rule level of steady state per capita consumption. Given this information, we can be certain that
A) a reduction in the saving rate will cause a decrease in the steady state level of per capita consumption ((C/N)*).
B) an increase in the capital-labor ratio will cause an increase in (C/N)*.
C) the capital labor ratio will tend to decrease over time.
D) the capital labor ratio will tend to increase over time.
E) a reduction in the saving rate will have an ambiguous effect on (C/N)*.

42) Suppose the economy is initially in the steady state. A reduction in the depreciation rate (δ) will cause
A) an increase in K/N.
B) an increase in Y/N.
C) an increase in C/N.
D) all of these
E) none of these

43) Which of the following will likely cause a reduction in output per worker?
A) a reduction in education expenditures
B) a reduction in the saving rate
C) a reduction in on-the-job training
D) all of these

44) In the model where it is assumed that the state of technology does not change, what parameters and/or
variables cause changes in steady state output per worker?
A) savings rate
B) depreciation rate
C) human capital per worker
D) all of these
E) none of these

11.3 Getting a Sense of Magnitudes

1) If the saving rate is 1 (i.e., s = 1), we know that
A) K/N will be at its highest level.
B) Y/N will be at its highest level.
C) C/N = 0.
D) all of these

2) Suppose an economy experiences a 5% increase in human capital. We know that this will cause
A) Y/N to increase by more than 5%.
B) Y/N to increase by exactly 5%.
C) Y/N to increase by less than 5%.
D) no change in Y/N.
E) a reduction in output per worker.

3) Suppose an economy experience a 4% increase in each of the following variables: N, K, and H (human capital). Given this information, we know with certainty that
A) Y will increase by more than 4%.
B) Y will increase by exactly 4%.
C) Y will increase by less than 4%.
D) Y will increase by less than 12% but by more than 4%.
E) none of these

4) Suppose there are two countries that are identical in every way with the following exception: Country A has a higher saving rate than country B. Given this information, we know with certainty that
A) the growth rate will be higher in A than in B.
B) the growth rate will be the same in the two countries.
C) the level of consumption per worker will be higher in A.
D) the level of consumption per worker will be higher in B.