9

Student ID.....5904690280.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $n + d = zf'(k)$ b. $(n + d)k = szf(k)$

   c. $K' = (1 - d)K + szF(K, N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?

   a. $n + d = zf'(k)$ b. $(n + d)k = szf(k)$

   c. $K' = (1 - d)K + szF(K, N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?

   a. $n + d = zf'(k)$ b. $(n + d)k = szf(k)$

   c. $K' = (1 - d)K + szF(K, N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output remains the same

   b. growth rate of output increase and it stays there since.

   c. growth rate of output per capita increases one time and then it goes back to zero

   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?

   a. Countries with the different s, n, d, z will converge to the different level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the same s, n, d, z will converge to the same level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the different s, n, d, z will converge to the different level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the same s, n, d, z will converge to the same level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.

   $H^{s'} =$ .....$(1-u)bH^s$.....

   (b) (short answer) Define the growth rate of the economy.

   $1 + g_H$ .....$\underset{(=,<,>)}{=}$.....$1 + g_Y$

   free $(1 + g_Y) =$ ..... $\frac{H^{s'}}{H^s} = (1-u)b$ .....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output remains the same

   b. growth rate of output increase and it stays there since.

   c. growth rate of output per capita increases one time and then it goes back to zero

   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

Student ID.....5904640298.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ bwH^s ..... $b(1-u)H^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ .....$\underset{(=,<,>)}{=}$..... $1 + g_Y$
   $(1 + g_Y) =$ ..... $(1-u)b$ ..... $= (1-u)b$ / $g_Y = (1-u)b - 1$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

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Student ID 5904640306

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ (b.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ (d.) $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   (c.) $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   (a.) growth rate of output per capita increases one time and then it goes back to zero

   (b.) growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   (a.) Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   (c.) Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   (c.) Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = \dots (1-u)b\,H^s \dots$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \dots (=,<,>) \dots 1 + g_Y$
   $(1 + g_Y) = \dots (1-u)b \dots$ At $1+g_Y = (1-u)b$ / $g_Y = (1-u)b - 1$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   (b.) growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   (c.) growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

Student ID.....5904640322

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. [**Solow growth Model**] Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = \ldots H^{d'} = (1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \ldots (=,<,>) \ldots 1 + g_Y$
   $(1 + g_Y) = \ldots 1 + g_H \ldots = (1-u)b$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

Student ID: 5004640363

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?

   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?

   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?

   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ .....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ ..... $1 + g_Y$
   $(=,<,>)$
   $(1 + g_Y) =$ .....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

9

Student ID: 5904640371

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

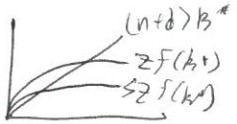
   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition? → $MP_k = n+d$

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$



4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

s↑ → $szf(k^*)$ → k^*↑ intensity.

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ ..... $H(1-u)b$ ..... = this period efficiency of human capital time by time spend for education time technology of efficiency of human capital

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ ..... $(=,<,>)$ ..... $1 + g_Y$
   $(1 + g_Y) =$ ..... $(1-u)b$ .....

   free → $Y = zuH$ → grow at rate H

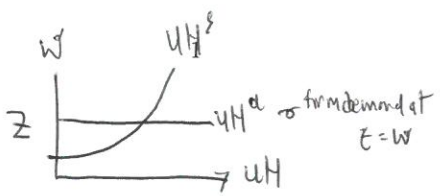
   $(1-u)$↑ b ↑ initial ↑ in Y, C

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

$H' = H(1-u)b$ → $\frac{H'}{H} = (1-u)b = 1+g_H = 1+g_Y$

$C = wuH^s$
$Y = zuH^d$

$\Pi = (z-w)uH$ → equilibrium $z = w$



9

Student ID..5904640413

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. ~~$n + d = zf'(k)$~~ b. $(n+d)k = szf(k)$

   c. $K' = (1-d)K + szF(K,N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?

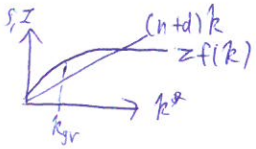
   a. ~~$n + d = zf'(k)$~~ b. $(n+d)k = szf(k)$

   c. $K' = (1-d)K + szF(K,N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?

   a. $n + d = zf'(k)$ b. $(n+d)k = szf(k)$

   c. $K' = (1-d)K + szF(K,N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$



4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output remains the same

   b. growth rate of output increase and it stays there since.

   c. growth rate of output per capita increases one time and then it goes back to zero

   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?

   a. Countries with the different s, n, d, z will converge to the different level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the same s, n, d, z will converge to the same level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the different s, n, d, z will converge to the different level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the same s, n, d, z will converge to the same level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = b(1-u)H^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{=} 1 + g_Y$
   $(1 + g_Y) = b(1+u)$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output remains the same

   b. growth rate of output increase and it stays there since.

   c. growth rate of output per capita increases one time and then it goes back to zero (Solow growth)

   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

9

Student ID 5904640702

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ — b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ — d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ — b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ — d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ — b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ — d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.

   $H^{s'} = (1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.

   $1 + g_H \underset{(=,<,>)}{=} 1 + g_Y$

   $(1+g_Y) = (1-u)b = \frac{H^{s'}}{H^s}$ good.

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

7

Student ID 5904640728

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = \ldots (1-u)bH \ldots$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \ldots (=,<,>) \ldots 1 + g_Y$
   $(1 + g_Y) = \ldots \frac{1+\Delta C}{H} = (1-u)b = \frac{H'}{H} \ldots$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

8.5 9.5

Student ID: 5904640744

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = \ldots$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \ldots\ldots (=,<,>) \ldots\ldots 1 + g_Y$
   $(1 + g_Y) = \ldots\ldots$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

7

Student ID 5904640785

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy? $s \uparrow$
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?
   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = b(1-u)H^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \overset{(=,<,>)}{=} 1 + g_Y$
   $(1 + g_Y) =$ 1 + growth rate of output $= \frac{H'}{H}$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

8

Student ID.....5904640819.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ (b.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ (d.) $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   (c.) $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   (a.) growth rate of output per capita increases one time and then it goes back to zero

   (b.) growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   (a.) Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   (c.) Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ .....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{\ldots\ldots} 1 + g_Y$
   $(1 + g_Y) =$ .....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   (c.) growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

8

Student ID..5904640827.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   (d.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   (b.) $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   (a.) $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. [**Solow growth Model**] Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same ×
   b. growth rate of output increase and it stays there since.
   (c.) growth rate of output per capita increases one time and then it goes back to zero ✓
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   s↑ y↑ k↑

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   (c.) Countries with the same s, n, d, z will converge to the same level of output per capita.
   (d.) Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   (a.) Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   (d.) Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ $(1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ $=$ $1 + g_Y$
   free $(1 + g_Y) =$ $1 + g_H = (1-u)b$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   (b.) growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

10

Student ID...5904640991.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   (d.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   (b.) $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   (a.) $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   (c.) growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   (c.) Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   (a.) Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ ....$(1-u)bH^s$.....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ ....$=$.....$1 + g_Y$
   $(=,<,>)$
   free $(1 + g_Y) =$ ....$\frac{H'}{H}$.... $= (1-u)b$ ✓✓

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   (b.) growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

7

Student ID...5904641023

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$

   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$

   d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$

   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$

   d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$

   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$

   d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ .....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ .....$_{(=,<,>)}$ $1 + g_Y$
   free $(1 + g_Y) =$ .....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

6

5904641056

Student ID.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?
   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ .....$(1-u)bH^s$.....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ .....$(=,<,>)$ $1 + g_Y$
   $(1 + g_Y) =$ .....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

7

Student ID.....5104641155.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   (d.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   (b.) $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   (a.) $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. [**Solow growth Model**] Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   (c.) growth rate of output per capita increases one time and then it goes back to zero
   (d.) growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   (b.) Countries with the different s, n, d, z will converge to the same level of output per capita.
   (c.) Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   (a.) Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   (c.) Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ .....$(1-u)\,b\,H^s$.....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ .....$=$ (=,<,>) .....$1 + g_Y$
   $(1 + g_Y) =$ .....$(1-u)\,b$ ✓ good.....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   (b.) growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

Student ID.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. [**Solow growth Model**] Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = $.....

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H$ .....$1 + g_Y$
   $(=, <, >)$
   $(1 + g_Y) = $.....

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5

Student ID.....5904649361.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $n + d = zf'(k)$ b. $(n + d)k = szf(k)$

   c. $K' = (1 - d)K + szF(K, N)$ (d.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?

   a. $n + d = zf'(k)$ (b.) $(n + d)k = szf(k)$

   c. $K' = (1 - d)K + szF(K, N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?

   (a.) $n + d = zf'(k)$ b. $(n + d)k = szf(k)$

   c. $K' = (1 - d)K + szF(K, N)$ d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output remains the same

   (b.) growth rate of output increase and it stays there since.

   (c.) growth rate of output per capita increases one time and then it goes back to zero

   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?

   (a.) Countries with the different s, n, d, z will converge to the different level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   (c.) Countries with the same s, n, d, z will converge to the same level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   (a.) Countries with the different s, n, d, z will converge to the different level of output per capita.

   (b.) Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the same s, n, d, z will converge to the same level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.

   $H^{s'} = \ldots b(1-u)+zuH^d \ldots$ X $b(1-u)+H^s$

   (b) (short answer) Define the growth rate of the economy.

   $1 + g_H \ldots\ldots (=,<,>) \ldots\ldots 1 + g_Y$

   free $(1 + g_Y) = \ldots\ldots$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output remains the same

   (b.) growth rate of output increase and it stays there since.

   (c.) growth rate of output per capita increases one time and then it goes back to zero

   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

8

Student ID..5904641411...

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = \ldots b(1-u)H \ldots$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \ldots =_{(=,<,>)} \ldots 1 + g_Y$
   $(1 + g_Y) = \ldots 1+g_c \ldots = ?\ b(1-u)$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

8

Student ID 5904641429

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ (b.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ (d.) $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   (a.) $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   (c.) $n + d = zf'(k)$ S ↑ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   (a.) growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   (a.) Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   (b.) Countries with the different s, n, d, z will converge to the same level of output per capita.

   (c.) Countries with the different s, n, d, z will converge to the different level of output per capita.

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7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.

   $H^{s'} =$ $(1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.

   $1 + g_H$ $\underset{(=,<,>)}{\leq}$ $1 + g_Y$

   free $(1 + g_Y) =$ $1 + g_H$ $= \frac{H^{s'}}{H^s} = (1-u)b$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero ✗

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   (c.) growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

9

Issa Dal

Student ID 5904641998

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   (d.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   (b.) $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   (a.) $n + d = zf'(k)$
   (b.) $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   (c.) growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
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   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   (a.) Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
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7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = b(1-u)H^d$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{=} 1 + g_Y$
   free $(1 + g_Y) = \frac{H'}{H} = (1-u)b$ ✓ good

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   (b.) growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

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Student ID.....5904641528.....

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ (b.) $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ (d.) $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   (c.) $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   (a.) growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   (a.) Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   (c.) Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = (1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \overset{(=,<,>)}{=} 1 + g_Y$
   $(1 + g_Y) = (1-u)b$ goal

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   (c.) growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

8

Student ID 5904641569

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ — b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ — d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ — b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ — d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ — b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ — d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = (1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{=} 1 + g_Y$
   $(1+g_Y) = \frac{H^{s'}}{H^s} = \frac{H'}{H} = (1-u)b$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

9

Student ID. 5904641775

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = \ldots (1-u)bH^s \ldots$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \ldots = \ldots 1 + g_Y$
   $(=,<,>)$
   free
   $(1 + g_Y) = \ldots \frac{H'}{H} = (1-u)b \ldots$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

8

Student ID 5904691783

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$ b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

   c. $n + d = zf'(k)$ d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.

   b. Countries with the different s, n, d, z will converge to the same level of output per capita.

   c. Countries with the different s, n, d, z will converge to the different level of output per capita.

   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = (1-u)bH$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{=} 1 + g_Y$
   $(1 + g_Y) = (1-u)b$ goal.

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero

   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

   c. growth rate of output increase and it stays there since.

   d. growth rate of output remains the same

10

Student ID: 5904691791

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

2. In solow growth model, what is the the steady state condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

3. In solow growth model, what is the the golden rule condition?

   a. $K' = (1-d)K + szF(K,N)$
   b. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$
   c. $n + d = zf'(k)$
   d. $(n+d)k = szf(k)$

4. Suppose saving rate increases, what is the effect on the economy?

   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

5. What is **absolute** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?

   a. Countries with the same s, n, d, z will converge to the same level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the different s, n, d, z will converge to the different level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the endogenous growth model, suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1-u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = (1-u)bH$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{=} 1 + g_Y$
   $(1 + g_Y) = (1-u)b$ good.

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output per capita increases one time and then it goes back to zero
   b. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)
   c. growth rate of output increase and it stays there since.
   d. growth rate of output remains the same

free

8

Student ID. 5904641874

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} =$ $b(1-u)H^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{\ldots\ldots} 1 + g_Y$
   $(1 + g_Y) =$ growth of output $+ 1 = \frac{H^{s'}}{H^s} = b(1-u)$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

6

Parncheevan Rittagorn

Student ID 5904697932

EE312 (2/2017 Section 046402): Ch.11 Growth Models

Quiz 9 :You have 10 minutes.

PART 1. (10 marks) Short answer and Multiple choices.

1. In solow growth model, what is the law of motion of capital per capita?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

2. In solow growth model, what is the the steady state condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

3. In solow growth model, what is the the golden rule condition?
   a. $n + d = zf'(k)$
   b. $(n + d)k = szf(k)$
   c. $K' = (1 - d)K + szF(K, N)$
   d. $k' = \frac{(1-d)}{(1+n)}k + \frac{szf(k)}{(1+n)}$

4. **[Solow growth Model]** Suppose saving rate increases, what is the effect on the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)

5. What is **absolute** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

6. What is **conditional** convergence?
   a. Countries with the different s, n, d, z will converge to the different level of output per capita.
   b. Countries with the different s, n, d, z will converge to the same level of output per capita.
   c. Countries with the same s, n, d, z will converge to the same level of output per capita.
   d. Countries with the different s, n, d, z will converge to the same level of output per capita.

7. (3 marks) In the **endogenous growth model,** suppose that there are three possible uses of time. Let u denote the fraction of time spent working. Let $(1 - u)$ be the fraction of time spent accumulating human capital. Let b be efficiency of human capital accumulation technology. $Y = zuH^d$.

   (a) (short answer) Define the law of motion of human capital.
   $H^{s'} = (1-u)bH^s$

   (b) (short answer) Define the growth rate of the economy.
   $1 + g_H \underset{(=,<,>)}{\leq} 1 + g_Y$
   $(1 + g_Y) = \frac{H^{s'}}{H^s} = (1-u)b$

   (c) (Multiple choices) Suppose the government gives people more incentives to spend more time studying. What is the effect of this policy on the growth rate of the economy?
   a. growth rate of output remains the same
   b. growth rate of output increase and it stays there since.
   c. growth rate of output per capita increases one time and then it goes back to zero
   d. growth rate of output per capita increases one time and then it goes back to n (n is population growth rate)