

Problem Set

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June 19, 2017

[1] Growth Rates

Assume that Y (output), K (capital), A (technology) and L (labor force) grow at constant annual rate of g_Y, g_K, g_A, g_L , respectively.

- (1) Compute the growth rate of effective labor AL .
- (2) Compute the growth rate of per-capita output, Y/L .
- (3) Compute the growth rate of $(K/L)^\alpha$.
- (4) Compute the growth rate of $Y/(AL)$.

[2] Kaldor's fact

Recall Kaldor's stylized facts.

1. Output per worker Y/L grows at a sustained rate.
 2. Capital per worker K/L grows at a sustained rate.
 3. Rental rate $r + \delta$ (gross) is constant.
 4. Capital output ratio K/Y is constant.
 5. Capital share $(r + \delta)K/Y$ and labor share wL/Y are constant, where w is the wage rate.
 6. Among the fast growing countries of the world, there is an appreciable variation in the rate of growth.
- (1) Show that Facts 1 and 4 imply Fact 2.
 - (2) Show that Facts 3 and 4 imply Fact 5.

Answer sheet. Please write your name and id number.