ECON3102-005
Chapter 5: A Closed-Economy One-Period Macroeconomic Model (Part 2)

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INTRODUCTION

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- **What is produced and consumed in the economy is determined jointly by the economys productive capacity and the preferences of the consumer.**

EXPERIMENT 1: AN INCREASE IN G
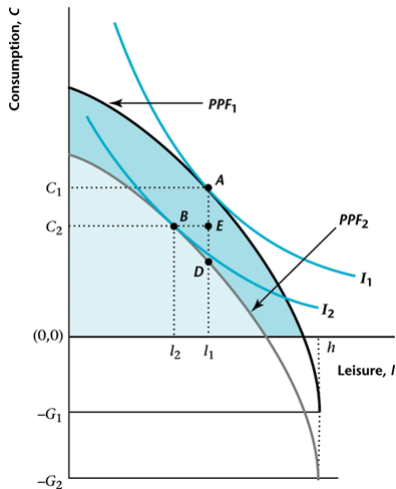
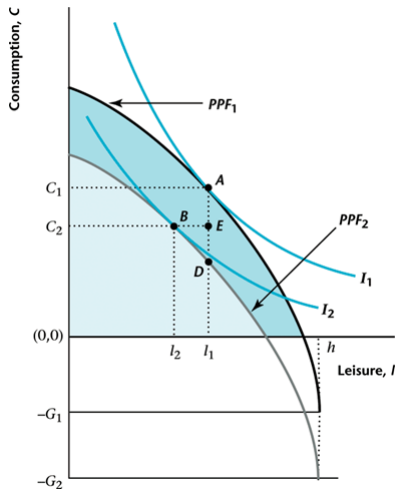- An increase in G from G_1 to G_2 shifts the PPF down.
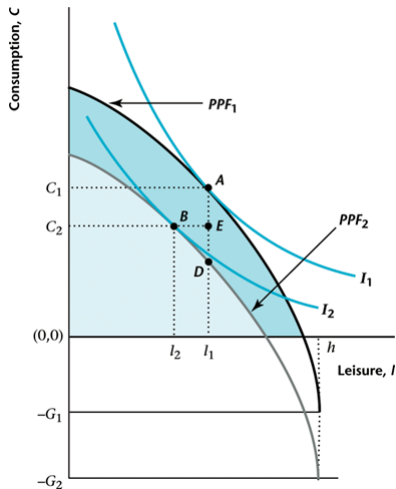
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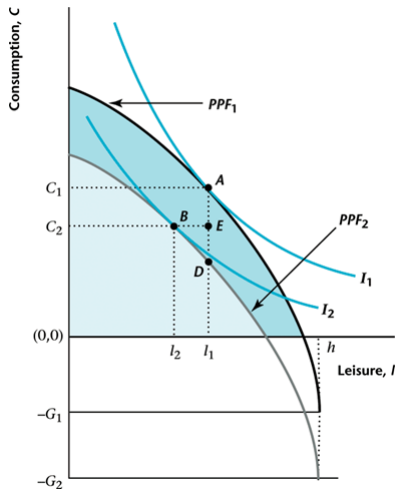
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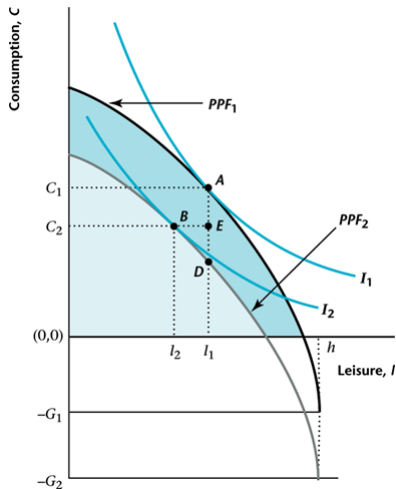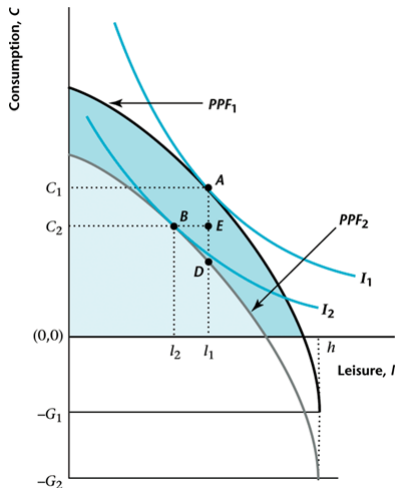- An increase in G from G_1 to G_2 shifts the PPF down.

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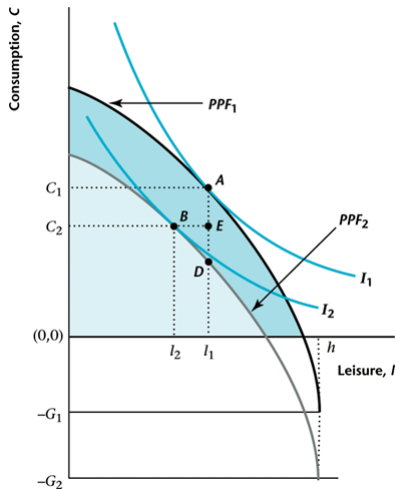
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- Total effect is A to B.

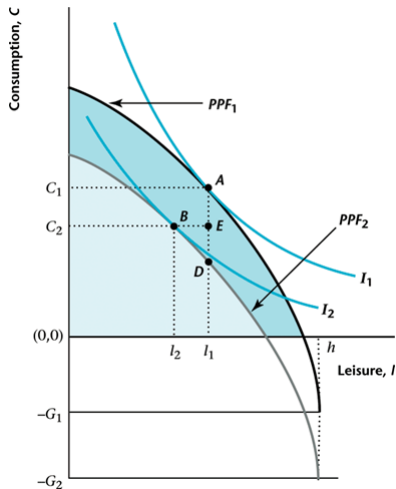- 1. c decreases, and ℓ decreases, as they are both normal goods.

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- 2. Since ℓ falls, employment should go up, and consequently, output Y.

WHAT CAN WE CONCLUDE FROM THE GRAPH?

- 3. Since the income-expenditure identity holds,
  $C = Y - G$
  and the following should also hold: $\Delta C = \Delta Y - \Delta G$
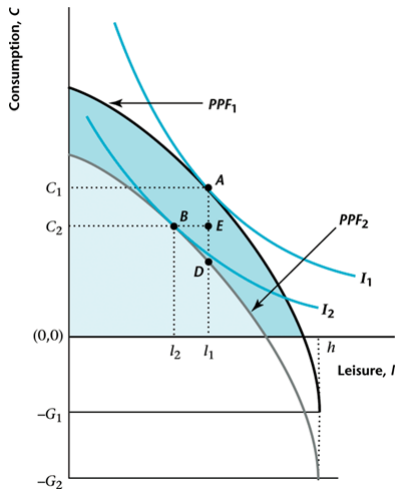 then, given $\Delta Y > 0$,

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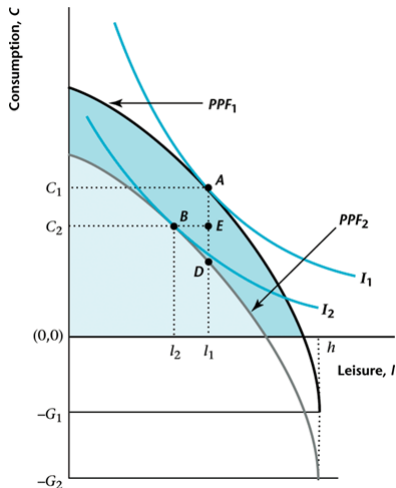 $C = Y - G$
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- Consumption is crowded out by the increase in government purchases.

- 4. The real wage falls.
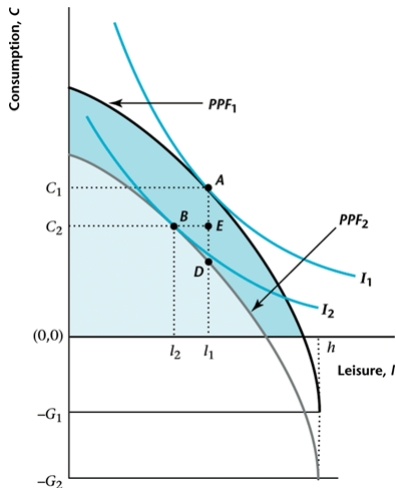
- 4. The real wage falls.

- Why? Note that the slope of the PPF at ℓ_1 is bigger (in absolute terms) than the slope at ℓ_2.
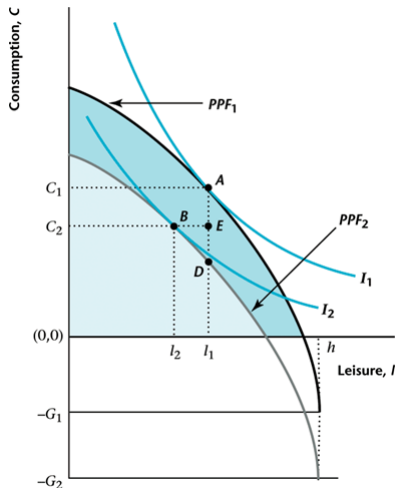
- A larger government (measured by increased spending) results in more output being produced and reduced consumption.
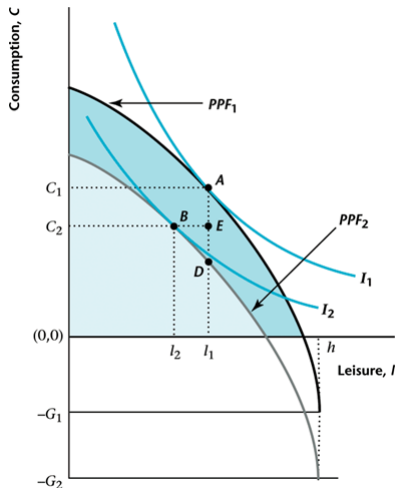
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- Overall:
$$c^* \downarrow$$
$$\ell^* \downarrow$$
$$Y^* \uparrow$$
$$T^* \uparrow$$
$$w^* \downarrow$$

Do we observe these effects in practice?
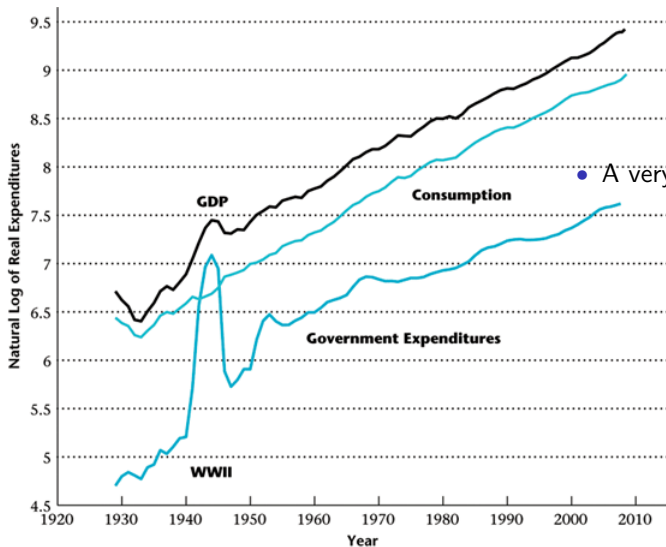
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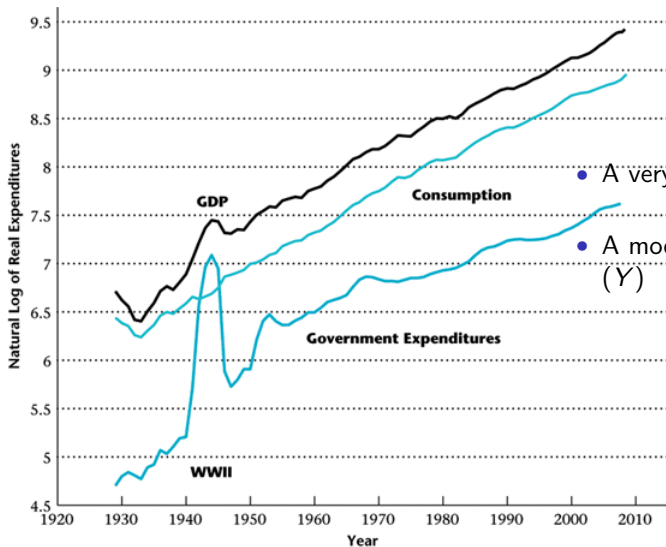
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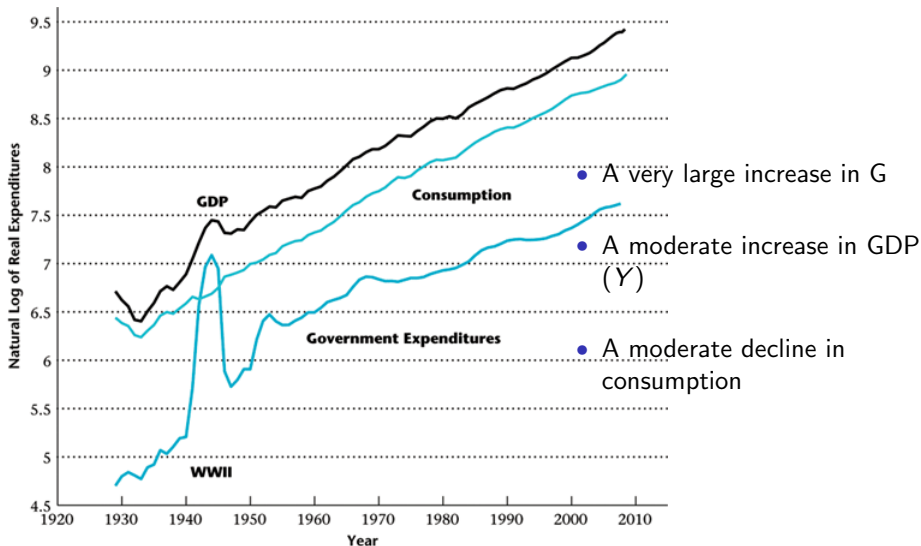
- A very large increase in G
- A moderate increase in GDP (Y)
- A moderate decline in consumption

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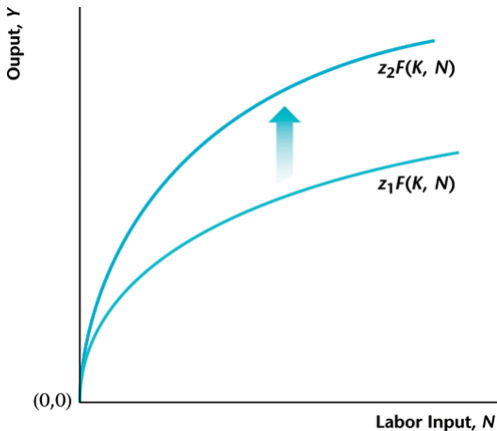|	Cyclicality	Lead/Lag	Variability Relative to GDP
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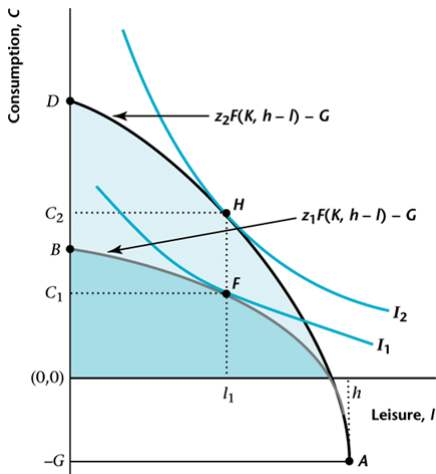|	Cyclicality	Lead/Lag	Variability Relative to GDP
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- The answer is NO.

Recall from Chapter 4 that a change in TFP has direct effects over the production function; for $z_2 > z_1$ we have that

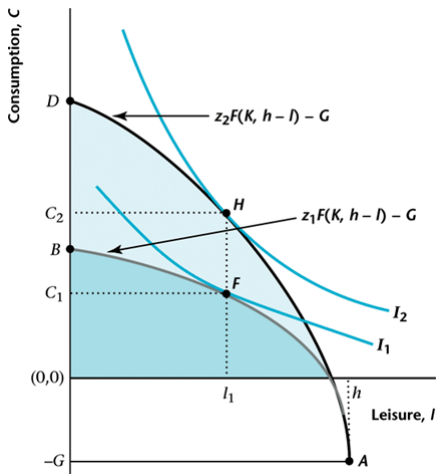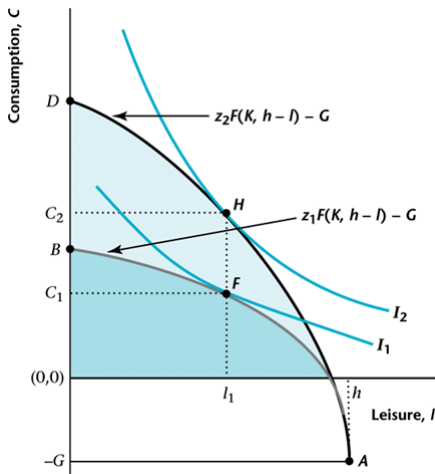- The original competitive equilibrium is at point A.

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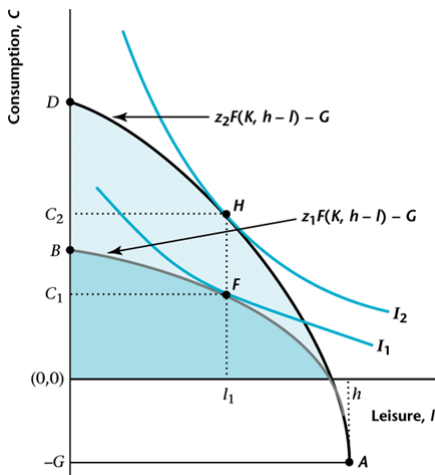
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- Leisure may rise or fall depending on the **income and substitution effects**.
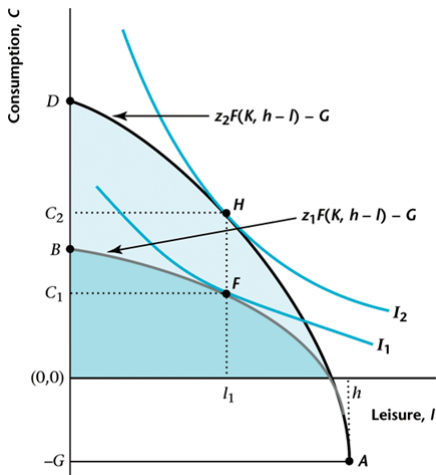
- Since $Y = C + G$, and G is constant, then output should increase!
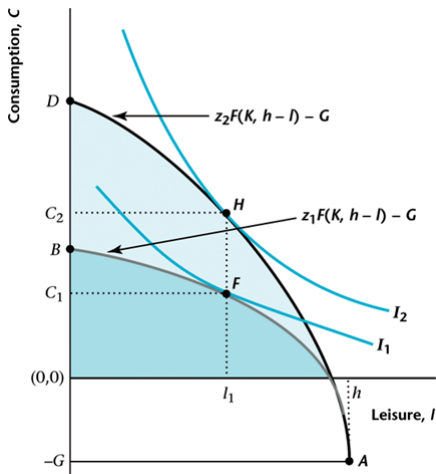
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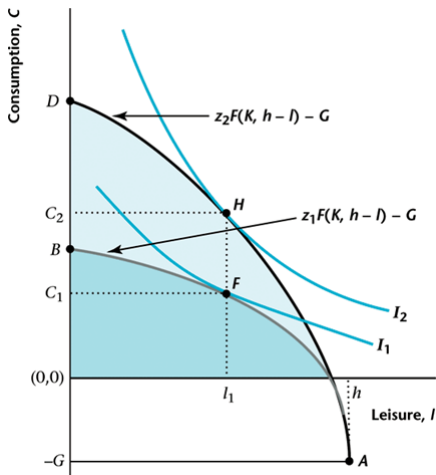
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- The real wage should go up.

SUMMARY
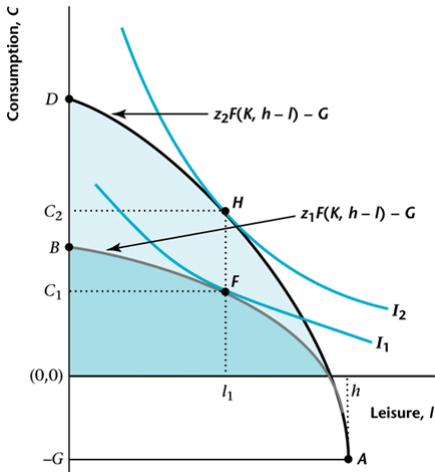
- The shift in z generates an increase in MP_N, moving both the demand for labor and the real wage up. Since workers have more income given the number of hours, C increases. However, ℓ may increase or decrease due to the income and substitution effects.

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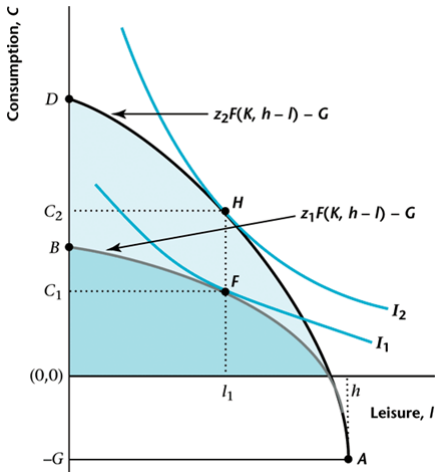
- The shift in z generates an increase in MP_N, moving both the demand for labor and the real wage up. Since workers have more income given the number of hours, C increases. However, ℓ may increase or decrease due to the income and substitution effects.

- However, as z increases, the consumer is able to reach U_2. Hence, an increase in total factor productivity **unambiguously increases** the aggregate standard of living!
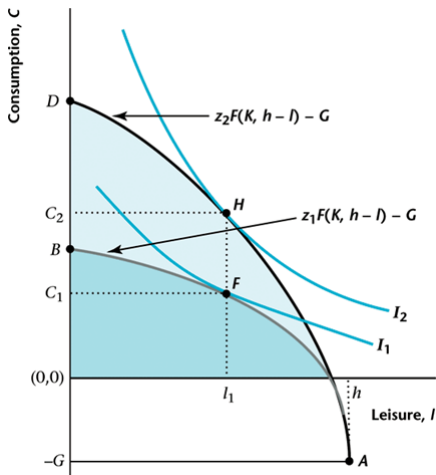
- Overall,

$$c^* \uparrow$$
$$N^*?$$
$$T^* \leftrightarrow$$
$$Y^* \uparrow$$
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- The answer is YES.

How relevant is TFP for the business cycle?

If we measure TFP by the Solow Residual, then apparently, the answer is "very much".
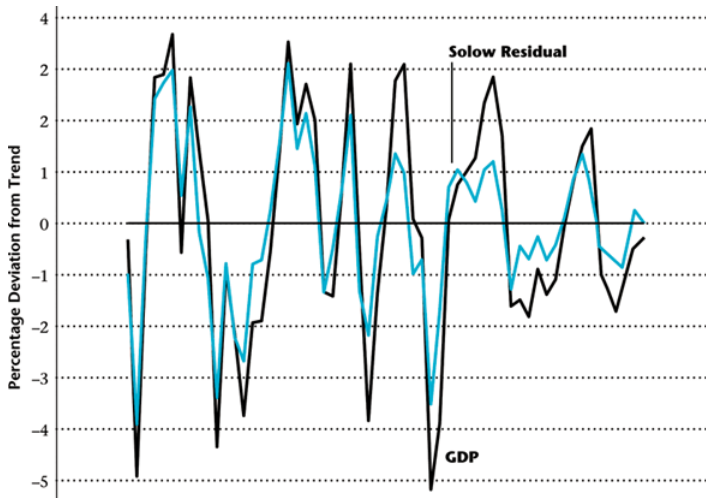
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- Although limited, our simple one-period model has been able to give us some insight on how the economy works. We'll be using a lot of this when we go into the two-period model framework.