EC216 Summary:

Intermediate Macroeconomics & Data Analysis

Lewis Britton {201724452}

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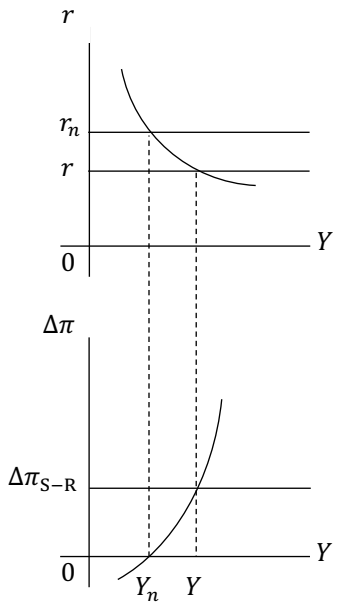
EC216 Course Summary

Summary

1) Uncovered Interest Parity
2) Fisher's Real Interest Rate Hypothesis
3) Nature of Inflation Expectations
4) Okun's Law

1) Output/GDP
2) IS-LM Model (Short-Run)
   - *Open & Closed Economies*
   - Derivation of IS (Investment & Saving Demand)
   - Derivation of LM (Money Supplied & Demanded)
3) IS-LM-PC (Medium-Run)
   - *Open & Closed Economies*
   - Aggregate Supply
   - Original PC
   - Expectations Augmented PC
   - NAIRU/Change in Unemployment PC
   - Change in Output PC
4) Labour Model (Medium-Run)
   - *Relative Wage & Price Setting*
   - Expected Prices
   - Given Prices
   - Given Wages

In Short-Run, output is determined by demand. In the Medium-Run, output is determined by supply. In Medium-Run, all output, unemployment and real interest rate remain at their natural rates due to Central Bank Monetary Policy. Seen where change in inflation is equal to zero.



CB raises *r* until it yields $[Y_n \ @ \ \Delta\pi = 0]$

Relationships

1: Uncovered Interest Parity

$$(1 + i) = (1 + i^*)\frac{E}{E^e}$$

2: Fisher's Real Interest Rate Hypothesis

$$r_t = i_t - \pi^e_{t+1}$$

- Where in the medium-run, the real interest rate must account for the expected inflation to give a true idea of the purchasing power

3: Nature of Inflation Expectations

$$\pi^e_{t+1} = \theta\pi_{t-1}$$

Where $[\theta = 0]$: No Expectations (NAIRU)
Where $[\theta = 1]$: Expectations Augmented
Where $[\theta > 1]$: Expectations Greater Than Before

4: Okun's Law

$$(u_t - u_{t-1}) = -\beta(g_{Y_t} - \bar{g}_Y)$$

- Relating change in unemployment to the change in output growth rate

Models

1: Output/GDP

$$\boldsymbol{Y = C(Y - T) + I(Y, i) + G + \left(X(Y^*, E) - IM(Y, E)\right)}$$

$Y =$ Domestic Output/Income

$Y^* =$ Foreign Output/Income

$T =$ Tax

$(Y - T) = Y_D =$ Disposable Income

$i =$ Interest Rate

$E =$ Nominal Domestic Exchange Rate

$C =$ Consumption $\left((+)\ Corr.\text{With } Y_D\right)$

$I =$ Investment $\left((+)\ Corr.\text{With } Y; (-)\ Corr.\text{With } i\right)$

$G =$ Government Spending

$X =$ Domestic Exports $\left((+)\ Corr.\text{With } Y^*; (-)\ Corr.\text{With } E\right)$

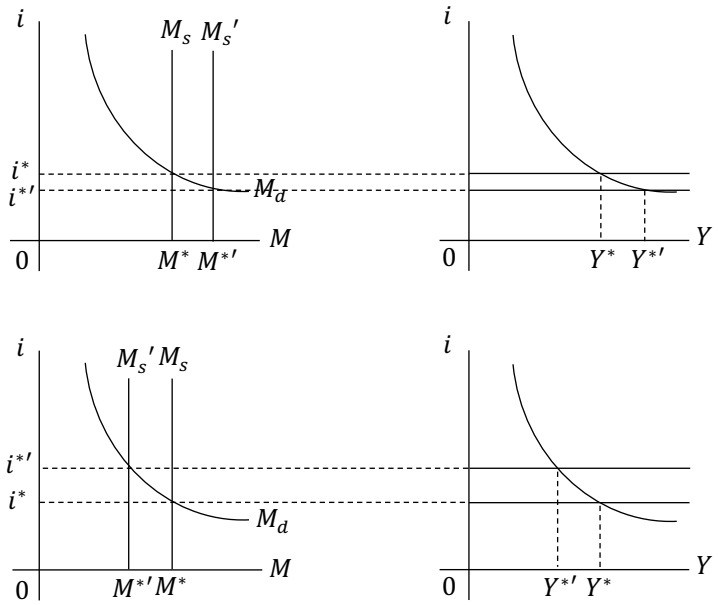
$IM =$ Domestic Imports $\left((+)\ Corr.\text{With } Y; (+)\ Corr.\text{With } E\right)$

$\epsilon = \frac{EP}{P^*} =$ Real Domestic Exchange Rate

2: IS-LM Model (Short-Run)

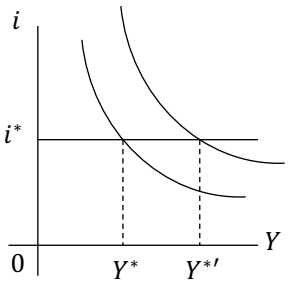
Monetary Expansion/Contraction (LM)

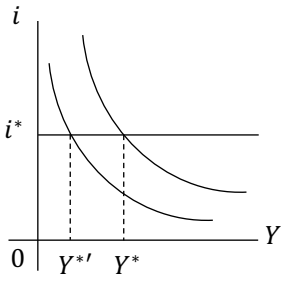
- CB changing the Money Supply therefore, Interest Rate
- **Expansion**: $M_s \uparrow$, Money Less Valuable $\therefore i \downarrow, I \uparrow, C \uparrow, Z \uparrow, Y \uparrow$
- **Contraction**: $M_s \downarrow$, Money More Valuable $\therefore i \uparrow, I \downarrow, C \downarrow, Z \downarrow, Y \downarrow$



Fiscal Expansion/Contraction (IS)

- Government changing the Budget Deficit
- **Expansion**: $(G - T) \uparrow$, Increase in Budget Deficit, $G \uparrow$ & $T \downarrow \therefore\ Y_D \uparrow, C \uparrow, I \uparrow, Y \uparrow$
- **Contraction**: $(G - T) \downarrow$, Increase in Budget Deficit, $G \downarrow$ & $T \uparrow \therefore\ Y_D \downarrow, C \downarrow, I \downarrow, Y \downarrow$





3: IS-LM-PC (Medium-Run) Phillips Curve Derivation

$$W_t = P^e(1 - \alpha u_t + z);\ \ P_t = W_t(1 + \mu)$$

Original PC:

$$\boldsymbol{P_t = P^e(1 + \mu)(1 - \alpha u_t + z)}$$

Expectations Augmented PC:

$$\boldsymbol{\pi_t = \pi^e_{t+1} + (\mu + z) - \alpha u_t\ [\theta = 1;\ \pi^e_{t+1} = \theta\pi_{t-1}]}$$

$$\boldsymbol{\pi_t - \pi_{t-1} = (\mu + z) - \alpha u_t}$$

NAIRU/Change in Unemployment PC:

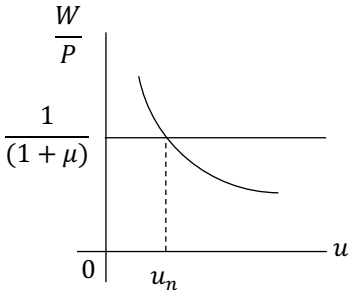
$$\boldsymbol{\pi_t - \pi_{t-1} = -\alpha(u_t - u_n)\ [\mathbf{MR}: \Delta u = 0;\ \Delta\pi = 0]}$$

Change in Output PC:

$$\boldsymbol{\pi_t - \pi_{t-1} = -\frac{\alpha}{L}(Y_t - Y_n)\ [\mathbf{MR}: \Delta Y = 0;\ \Delta u = 0;\ \Delta\pi = 0]}$$

- As *t* approaches *n*, everything returns to its Natural Rate

4: Labour Model (Medium-Run)



- $\frac{W}{P^e} = (1-u)$
- $\frac{W}{P} = \frac{1}{(1+\mu)}$