

Exchange Rate Economics

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- Medium-term behaviour of real exchange rates
- Invariant to exchange rate regime
- Relation to macroeconomic fundamentals

Balassa-Samuelson Model

- Small open economy
- Two sectors: traded and nontraded
- International capital mobility
- Intersectoral labour mobility
- Real exchange rate driven by productivity differential

Model Specification

- Production technologies in traded and nontraded sectors

$$Y_T = A_T F(K_T, L_T)$$

$$Y_N = A_N G(K_N, L_N)$$

- Labour market

$$L = L_T + L_N$$

- Unique wage w
- Exogenous interest rate r
- Relative price of nontradables p
- Nontraded good: consumption; Traded good: consumption and investment

Profit Maximisation by Firms

- Traded-sector firms maximise

$$\sum \left(\frac{1}{1+r} \right)^{s-t} [A_{Ts} F(K_{Ts}, L_{Ts}) - w_s L_{Ts} - \Delta K_{Ts+1}]$$

- Nontraded-sector firms maximise

$$\sum \left(\frac{1}{1+r} \right)^{s-t} [p_s A_{Ns} G(K_{Ns}, L_{Ns}) - w_s L_{Ns} - \Delta K_{Ns+1}]$$

Profit Maximisation by Firms

- Denote capital-labour ratio $K/L = k$ and output-labour ratio $Y/L = y$
- Per-worker production functions $y_T = A_T F(k_T)$, $y_N = A_N G(k_N)$

First-Order Conditions

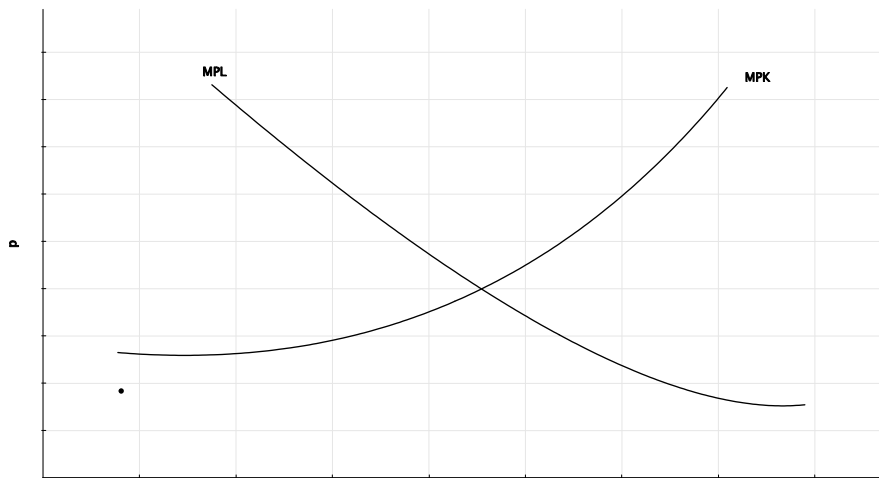
- 1 $MP_{K_T} = r \Rightarrow A_T f'(k_T) = r$
- 2 $MP_{L_T} = w \Rightarrow A_T [f(k_T) - f'(k_T)k_T] = w$
- 3 $VMP_{K_N} = r \Rightarrow pA_N g'(k_N) = r$
- 4 $VMP_{L_N} = w \Rightarrow pA_N [f(k_T) - f'(k_T)k_T]$

Recursive Solution

- $k_T = k_T(r)$
- $w = w(k_T) = w(A_T, r)$
- Equations (3)-(4) jointly determine p, k_N

graph

I



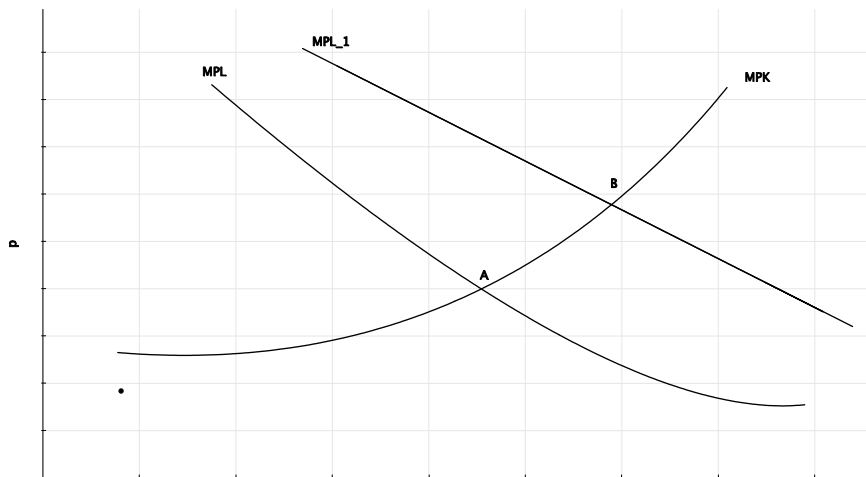
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X Axis

B-S Graph: Increase in A_T

II

graph



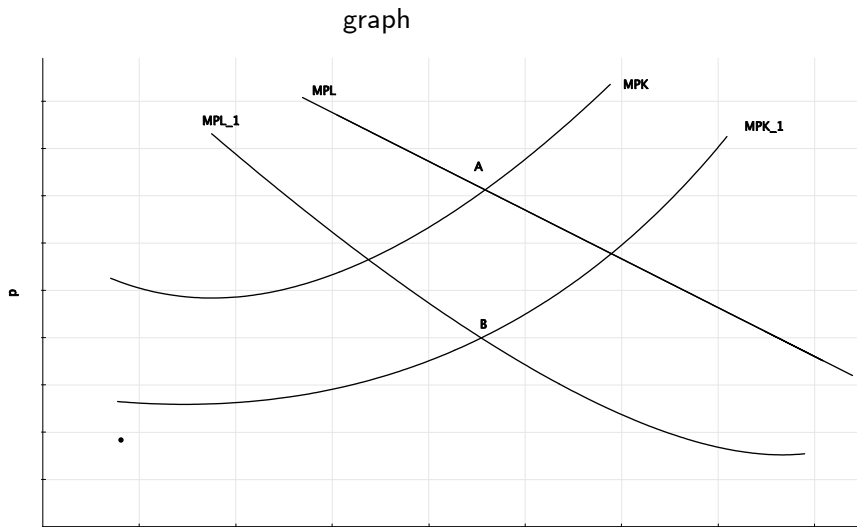
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X Axis



B-S Graph: Increase in A_N

III



3.pdf

X Axis



- $\mu = \text{labour share}$
- $\hat{p} = \frac{\mu_{LN}}{\mu_{LT}} \hat{A}_T - \hat{A}_N$

General Productivity Increase

- $\hat{A}_T = \hat{A}_N = \hat{A}$
- $\hat{p} = \left[\frac{\mu_{LN}}{\mu_{LT}} - 1 \right] \hat{A}$

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- Role of aggregate labour supply if diminishing returns to scale in nontraded sector

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- Taxes
- Housing sector

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- Retail prices of tradables have large non-traded component

$$P_T^C = P_T^P + \psi P_N$$

where P_T^C is consumer price of tradable good, P_T^P is producer price of tradable good and ψP_N is distribution cost

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- Distribution sector: terms of trade may improve in short run

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- “The Composition of Government Spending and the Real Exchange Rate” (Galstyan and Lane, JMCB, 2009)