Economic Growth and International Trade

Chayun Tantivasadakarn
Faculty of Economics, Thammasat University
Outline

• Classifying the Trade Effects of Economic Growth
• Sources of Growth and the Production-Possibilities Frontier
• Factor Growth, Trade and Welfare
  – The Small-Country Case and the Rybczynski Theorem
  – The Large-Country Case
The trade effects of production growth

Assuming a small country, the world relative price, $P$, is constant. This country exports $X$ and imports $Y$.

Chayun Tanti
The trade effects of production growth

- Neutral production effect: production of export and import good grow at the same rate.
- I. Protrade production effect: production of export good grows faster than the production of import good.
- II. Ultra-protrade production effect: production of export good grows while the production of import good shrinks.
- III. Antitrade production effect: production of import good grows faster than the production of export good.
- IV. Ultra-antitrade production effect: production of import good grows while the production of export good shrinks.
The trade effects of consumption growth

- As income increases, consumption can be in 4 regions.
The trade effects of consumption growth

• Neutral consumption effect: consumption of export and import good grow at the same rate.

• I. Antitrade consumption effect : consumption of export good grows faster than the consumption of import good.

• II. Ultra-antitrade consumption effect: consumption of export good grows while the consumption of import good shrinks.

• III. Protrade consumption effect: consumption of import good grows faster than the consumption of export good.

• IV. Ultra-protrade consumption effect: production of import good grows while the consumption of export good shrinks.
Combine trade effects of economic growth

• The overall effects of economic growth on trade depend on both production and consumption.

• If both production and consumption effects are the same type (e.g., protrade), the net effect will be of the same type as the two individual effects.

• If one effect is protrade (antitrade) and the other is neutral, the net effect will be protrade (antitrade).

• Other combinations will give various net effects.
Combine trade effects of economic growth: examples

Reduction in trade

Ultra-antitrade production effect
Ultra-antitrade consumption effect

Expansion of trade

Protrade production effect
Neutral consumption effect

Chayun Tanti
Sources of Growth: Technical progress

- **Neutral Technical progress**: increase the productivity of L and K in the same proportion; K/L ratio is unchanged.

- **Labor-saving technical progress**: increase the productivity K proportionately more than that of L; K/L ratio rises.

- **Capital-saving technical progress**: increase the productivity L proportionately more than that of K; K/L ratio falls.
Sources of Growth: Technical progress

- PPC is shifted out by the improvement of technology.
  - Commodity-neutral technical progress: the progress affects both goods equally.
  - Commodity-specific technical progress: the progress affects only one good.
Sources of Growth: Factors of Production

- Balanced growth: L and K grow at the same rate. PPC is shifted out parallel to the old one.
- Only one factor grows: PPC is shifted out biased toward the good that uses that factor intensively.
Factor Growth and trade: The Small-Country Case

- An increase in L endowment will shift the PPC biased toward the X (L-intensive good) axis from $XY$ to $X'/Y'$ by Rybczynski Theorem.
- Since $P$ is constant, the equilibrium moves from $E$ to $E'$. 
- $X$ production increases while $Y$ production decreases.
- If $L$ is the abundant factor, there is an ultra-protrade production effect.
- If $L$ is the scarce factor, there is ultra-antitrade production effect.
Factor Growth and welfare: The Small-Country Case

• If capital grows or there is technical progress, welfare will be increased since higher output means the country can reach a higher community indifference curve.
  – Assuming that the social benefits from output increase are not offset by negative income distribution effects.

• If labor force increases, the community indifference curve is changed since the new labor force may have different tastes.
  --> use per capita income to approximate.
  – By CRTS assumption, output will expand by a smaller percentage than the increase in the labor force. Per capita income will be fallen and so is the welfare.
Factor Growth and trade: The Large-Country Case

- In the large country case, growth can change the TOT.

- Assuming a protrade case, Home’s offer curve rotates out from OH to OH', causing the TOT to change to P₁.

Chayun Tanti
Factor Growth and Welfare: The Large-Country Case

- The deterioration of Home’s TOT from $P_0$ to $P_1$ after growth rotates the budget line counter clockwise.
- Home produces less of export good X and more of import good Y (movement from D to J).
- The relatively higher price of Y shifts consumption from E to K.
  - A reduction in the degree of specialization and trade.
  - A decrease in welfare compared with the case when TOT is unchanged ($U_2$ to $U_1$).
  - An increase in welfare compared with no growth ($U_0$ to $U_1$).
Immiserizing growth

- If the post-growth TOT is declined sufficiently, production move from D to J and consumption move from B to K.
- Consumer may attain a lower welfare compared with the pre-growth since the indifference curve is $U_1 < U_0$. 