The Rybczynski Theorem

- Formulated by economist T. Rybczynski in 1955.
- Addresses the relationship between factor endowments and production outputs in a two-good, two-factor economy.

At constant relative goods prices, an increase in the endowment of one production factor leads to

- A more than proportional increase in the output of the good that uses this factor intensively.
- An absolute decrease in the output of the other good

- The theorem basically state that if the supply of only one factor increase then the output of goods that uses that factor in large amount will also increase.

•Consider an economy producing two goods: cloths (labor-intensive) and steel (capital-intensive)
•An increase in labor supply will:

1. Expand the production possibilities frontier (PPF) outward.

2. Increase clothing production.

3. Decrease steel production due to the reallocation of resources.

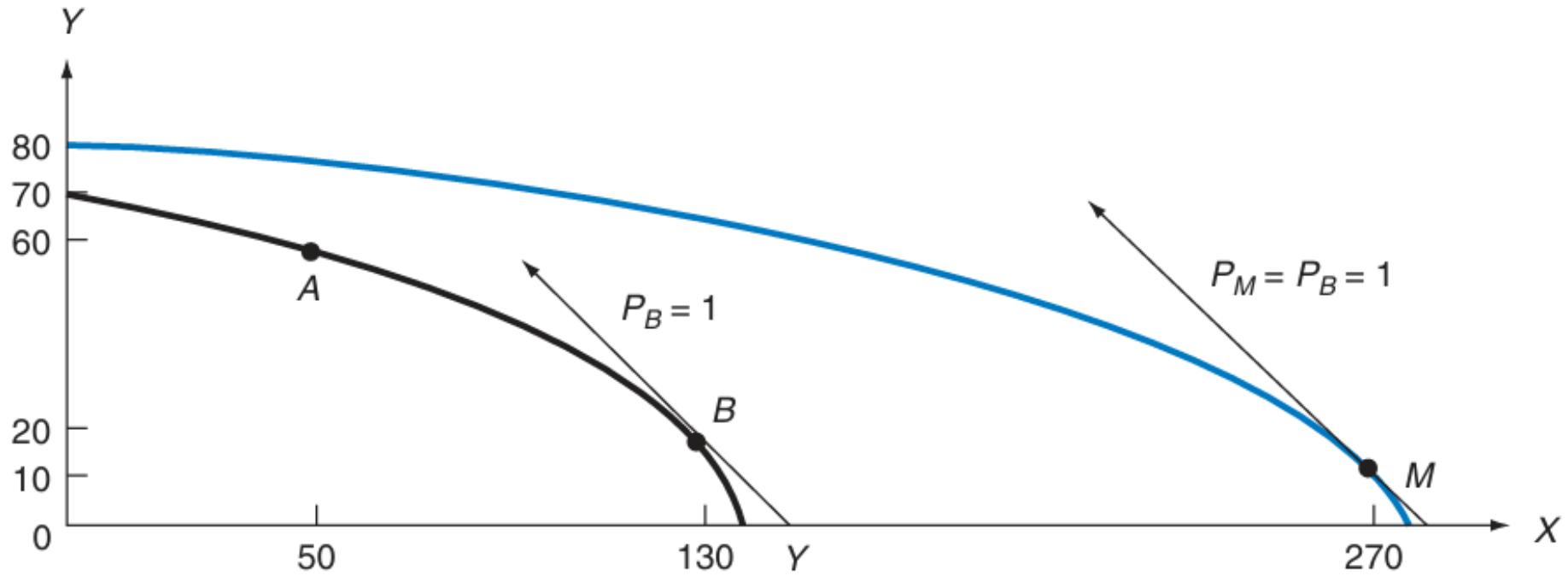

FIGURE 7.2. The Growth of Labor Only and the Rybczynski Theorem.
With trade but before growth, Nation 1 produces at point *B* (130X and 20Y) at $P_X/P_Y = P_B = 1$, as in previous chapters. After only *L* doubles and with P_X/P_Y remaining at $P_B = 1$, Nation 1 produces at point *M* (270X and 10Y) on its new and expanded production frontier. Thus, the output of X (the *L*-intensive commodity) expanded, and the output of Y (the *K*-intensive commodity) declined, as postulated by the Rybczynski theorem.

Technical Progress
by
John Hicks

Economic growth ---->Resources and technical progress
Technical progress affects economic growth, international trade, factor endowment.
=> It reduces the amount of both labour and capital required to produce any given level of output.

Technical progress refers to improvements in production methods that increase output per unit of input.

It Enhances efficiency, leading to economic growth and changes in labor and capital usage.

Neutral Technical Progress

•It increases the marginal productivity of both labor and capital in the same proportion at a given capital –labour ratio.
(capital-labor ratio remains unchanged after TP)

so that K/L remains the same after the neutral technical progress as it was before at unchanged relative factor prices (w/r).
•That is, with unchanged w/r, there is no substitution of L for K (or vice versa) in production so that K/L remains unchanged. All that happens is that a given output can now be produced with less L and less K.

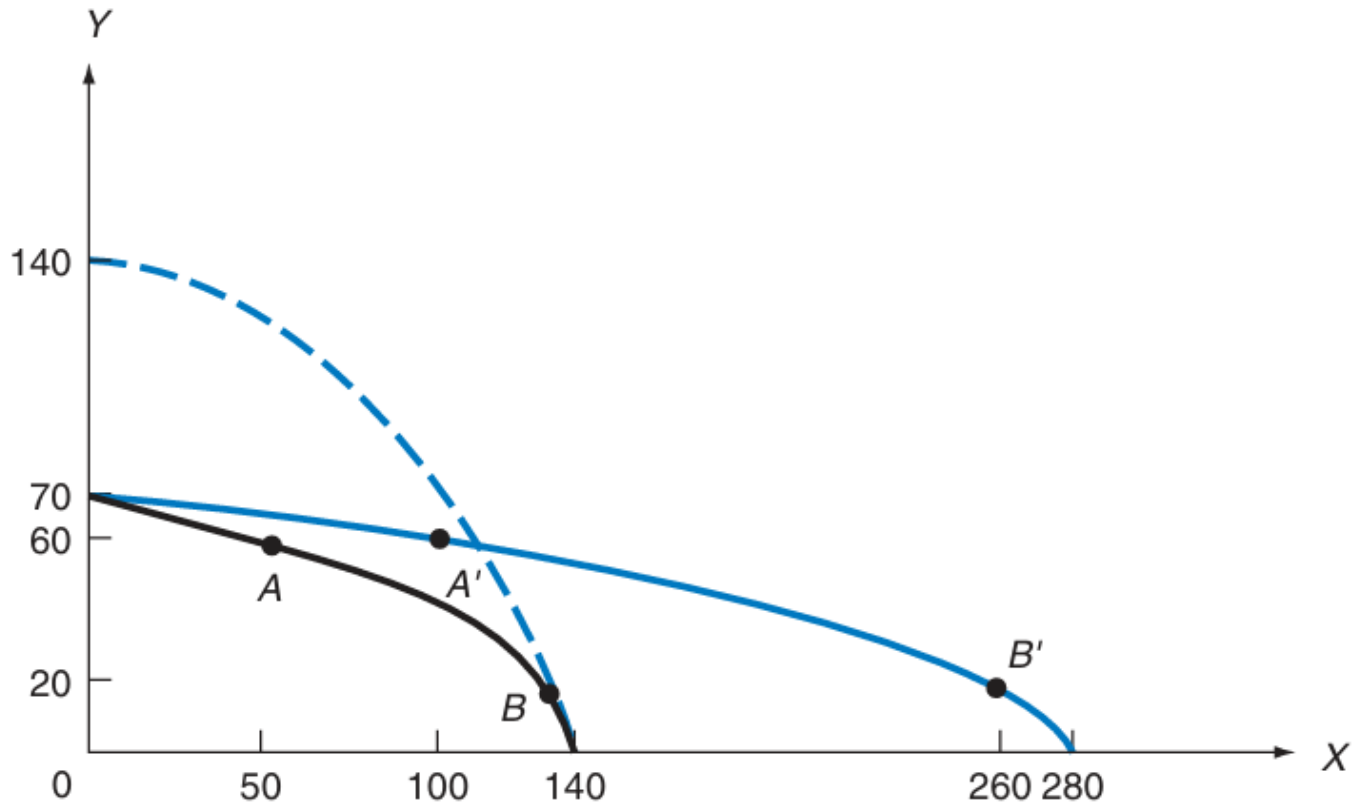

FIGURE 7.3. Neutral Technical Progress.
The figure shows Nation 1's production frontier before technical progress and after the productivity of *L* and *K* doubled in the production of commodity X only, or in the production of commodity Y only (the dashed frontier). Note that if Nation 1 uses all of its resources in the production of the commodity in which the productivity of *L* and *K* doubled, the output of the commodity also doubles. On the other hand, if Nation 1 uses all of its resources in the production of the commodity in which no technical progress occurred, the output of that commodity remains unchanged.

Labor-Saving Technical Progress (Capital using)

- It increases the productivity of capital (K) proportionately more than the productivity of labour (L).

=> K is substituted for L.

(more K is used per unit of L)

=> K/L rises at unchanged w/r.

- Since more K is used per unit of L, this type of technical progress is called labor saving
- Note that a given output can now be produced with fewer units of L and K but with a higher K/L.

Capital-Saving Technical Progress (Labour using)

- It increases the productivity of Labour (L) proportionately more than the productivity of capital (K).
- As a result, L is substituted for K in production and L/K rises (K/L falls) at unchanged w/r.
- Since more L is used per unit of K, this type of technical progress is called capital saving.
- Note that a given output can now be produced with fewer units of L and K but with a higher L/K (a lower K/L).

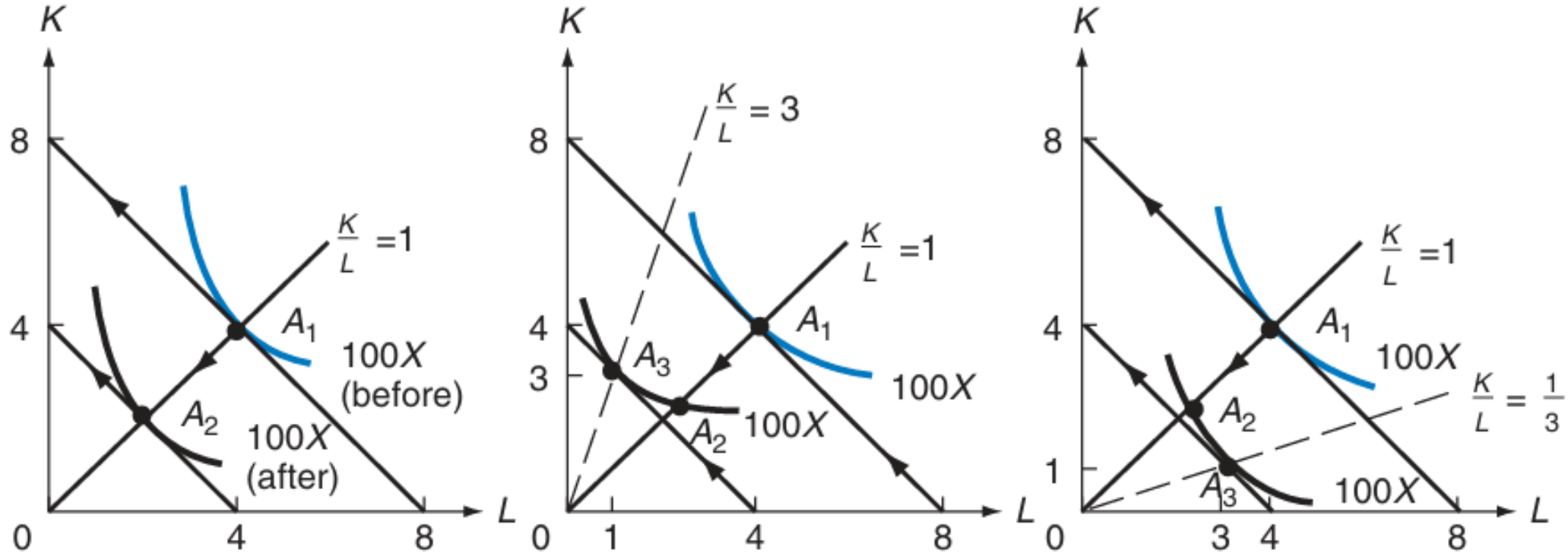

FIGURE 7.11. Hicksian Neutral, L-Saving, and K-Saving Technical Progress.
In all three panels of the figure, we begin at point A_1, where 100X is produced with $4L$ and $4K$ before technical progress occurs. After neutral technical progress, the same 100X can be produced with $2L$ and $2K$ (point A_2 in the left panel), leaving $K/L = 1$ at unchanged $w/r = 1$ (the absolute slope of the isocosts). With L-saving technical progress, the same 100X can be produced with $3K$ and $1L$ (point A_3 in the middle panel) and $K/L = 3$ at unchanged $w/r = 1$. Finally, with K-saving technical progress, the same 100X can be produced with $1K$ and $3L$ (point A_3 in the right panel) and $K/L = \frac{1}{3}$ at unchanged $w/r = 1$.

Theory of Immiserzing Growth

By

Jagdish Bhagwati

- Economic growth can make any country worse off even more than before its growth
- Because if growth is heavily based on export then it can possible because of more export
- Terms of trade of exporting can deteriorate which make its growth worse off
- Terms of trade improve when Exp > Import
- Terms of trade deteriorate when Imp>Exp

- A country is growing because of export, as a result country will increase production and export.
- But Demand is less elastic in foreign countries
- As a result, Price of exportable goods falls, that means import price is relatively high in comparison to export price.

- Terms of trade = Exp P/ Imp P

- TOT before growth = Qm/Qx=8/4=2
- TOT after growth=Qm/Qx=4/4=1
- Economic growth becomes worse off after growth.