CHAPER 5
International Trade and economic Growth

5.1 Introduction

- International trade, international investment and immigration have all grown rapidly over the pure 200 years.

- Trade often requires supporting investments in distribution and marketing facilities. Improved transportation and communications permit multinational firms to spread production according to each country's comparative of advantage. Thus, many foreign investments increase imports and exports. People frequently accompany trade and investment flows.

- International trade and international investment are two main elements of the growing interdependence of the world's economics commonly referred to as globalization.

- In 1820, exports as a % of total national output grew only 1% of the total value of world output. By 1870, the advent of railroads and steamships, and reduction of tariffs and other trade restrictions by most of the world's nations, had increased trade to about 5% of the world's output. By 1929, about 9% of the world's GDP was exported. The Great Depression and the sharp increase in protectionist trade policies dunning the 1930s, not to mention WWII, had reduced exports to less than 7% of world GDP by 1950. Since 1950, world trade as a proportion of world output bas grown rapidly again. Between 1950 and 1992, world GDP increased about fivefold while exports increased tenfold. Exports approached 14% of world GDP by 1992.

- Statistical evidence strongly confirms that there is a strong positive relationship between international trade and economic growth. Also, the evidence points to a bidirectional relationship between growth and international trade.

5.2 Theories relating trades and growth

5.2.1 Internally-generated growth hypothesis

- Jung and Marshall (1985) claim that output growth causes export growth. The growth of the economy many precede trade growth.

- Some flourishing industries can be achieved from the accumulation of human capital, cumulative production experience, technology transfer from abroad through licensing or direct investment, or physical capital accumulation.

- These industries can increase production with higher economic growth without relating to any export promoting incentives. They will also turn to foreign markets since domestic demand for their products is insufficient. Hence, higher economic growth causes higher exports.

5.2.2 Export-led growth hypothesis

- This hypothesis not only implies the presence of positive correlation between export growth and economic growth, but also that the former unidirectionally causes the latter.

- Export growth may represent an increase in demand for the country output and thus serve to increase real GNP.

- An increase in exports may lossen a binding foreign exchange constraint and allow increases in productive intermediate imports such as raw material inputs and capital goods which cannot be produced domestically and hence result in the growth of output.

- Export growth may result in enhanced efficiency and thus may lead to greater output.

- The standard neoclassical trade theory suggests that export enhances economic growth due to a better resource allocation of existing resources from the less efficient non-export sector to the higher productivity export sector and improved production efficiency.

### 5.3 International trade and the Solow model

- Trade increases the real value of goods available to consumers.

- Richard Baldwin interpreted the increase in the value of real goods produced as being equivalent to an increase in the production function because the same resources are able to produce more real output.

Economic Growth

- International trade causes a one-time increase in per capita output from y^* to y^{**}. Moreover, medium-run economics growth can be achieved as the economy approaches its new steady state to y^{***}.
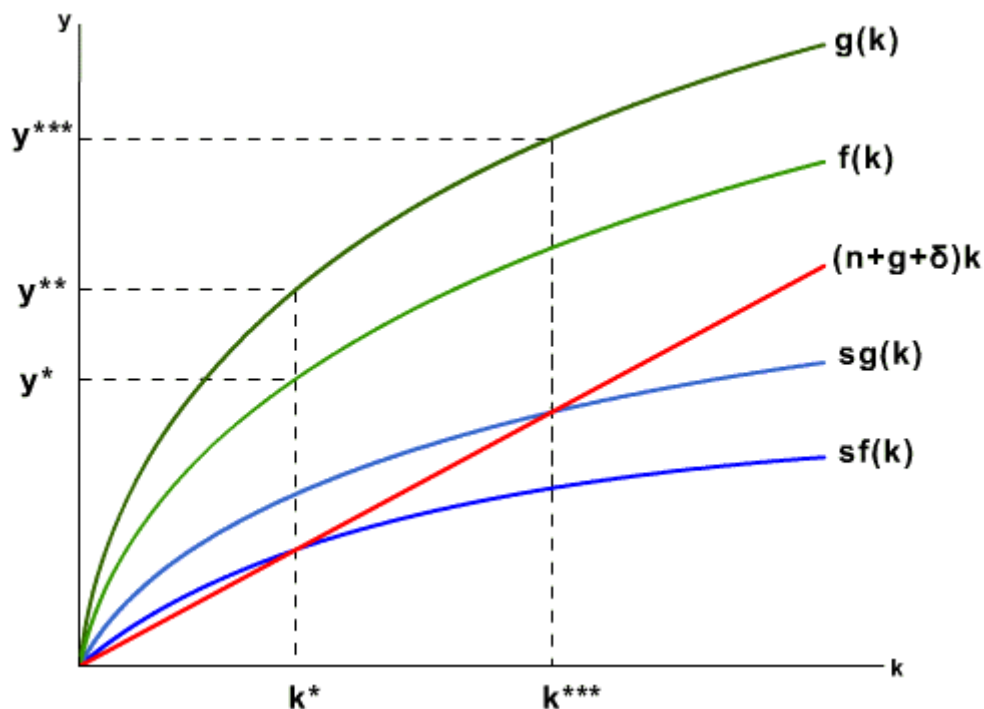
- Joy Mazumdar points out that a country may not be able to increase its rate of growth in the medium run if it exports capital goods and imports consumer goods.
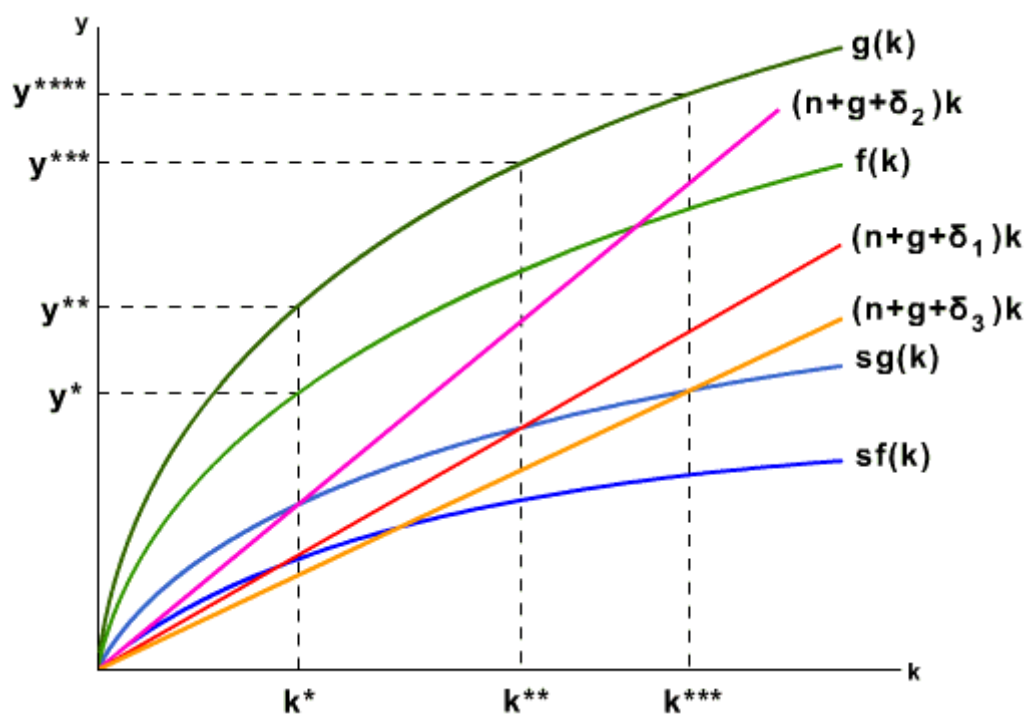
- The establishment of free trade shifts the production function from $f(k)$ to $g(k)$.

- Assume that the rise in the price of capital goods is proportional to the short-run rise in real output, the depreciation line will shift up from $(n+g+\delta_1)k$ to $(n+g+\delta_2)k$ because the higher price of capital raises the cost of replacing capital. Also, the steady-state level of k remains at k^* and hence y rises only from y^* to y^{**}.

- The gain in per capital output consists of the short-run effect of the rise in the production function. There is no medium-run growth because there is no adjustment in k.

- Now assume that a nation imports mostly capital goods and exports mostly consumer goods. The depreciation line will shift down to $(n+g+\delta_3)k$ since it is much easier to replace worn-out capital with now-cheaper foreign-produced capital. The new steady-state levels of k and y will be at k^{***} and y^{****}.

- In general, developing economies import more capital goods and export fewer capital goods than do developed economies. Hence, Mazumdar suggests that capital-importing developing economies may gain more from international trade than the developed economies do.

5.4 International trade and long-run growth

- Consider the R&D model of technological progress:

$$g = f(L, \pi, \beta, r)$$

where: g = rate of technological progress

L = factors and resources devoted to innovation

π = potential profit from innovation

β = amount of resources needed to generate an innovation

r = rate of interest with which future profit is discounted

- International trade can make the development of new products more profitable

because a larger potential market means greater demand for new products.

- An increase in potential profit raises the present value of innovation curve form PVI_1 to PVI_2. This also lead to an increase in the number of innovations from q_1 to q_2.

- International trade is likely to cause the costs of innovation β to decline. Trade's effect on the flow of ideas across borders expands the number of nonrival ideas available to innovators in all countries.

- A decline in β from β_1 to β_2 lowers the cost of innovation curve. This in turn increases the frequency of innovations and reduces how long innovators can exploit their temporary monopoly positions. A decline in β lowers the PVI curve from PVI_1 to PVI_2. The fall in implies that fewer resources are needed to produce an innovation.

- An increase in effective L reduces the cost of resources, thus lowering the COI curve from COI_1 to COI_2.
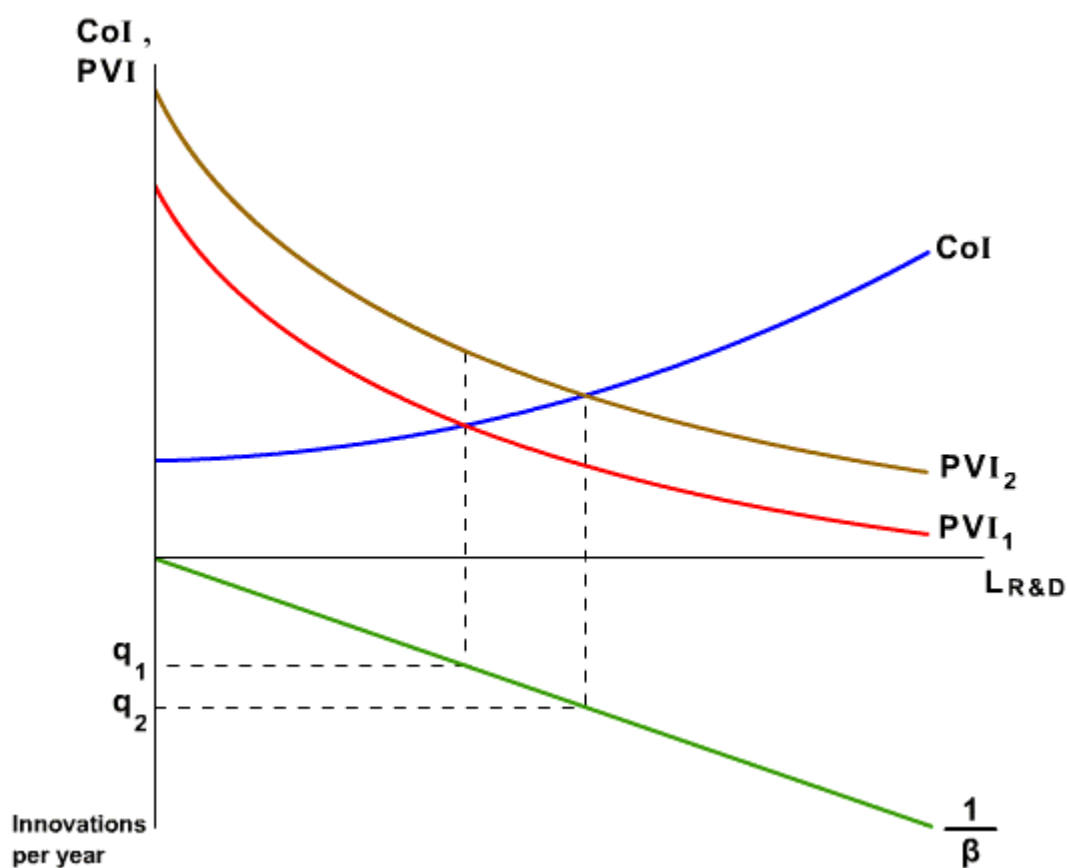
- It is not clear how the variable **r** is affected by international trade and hence **r** is taken as exogenous here.
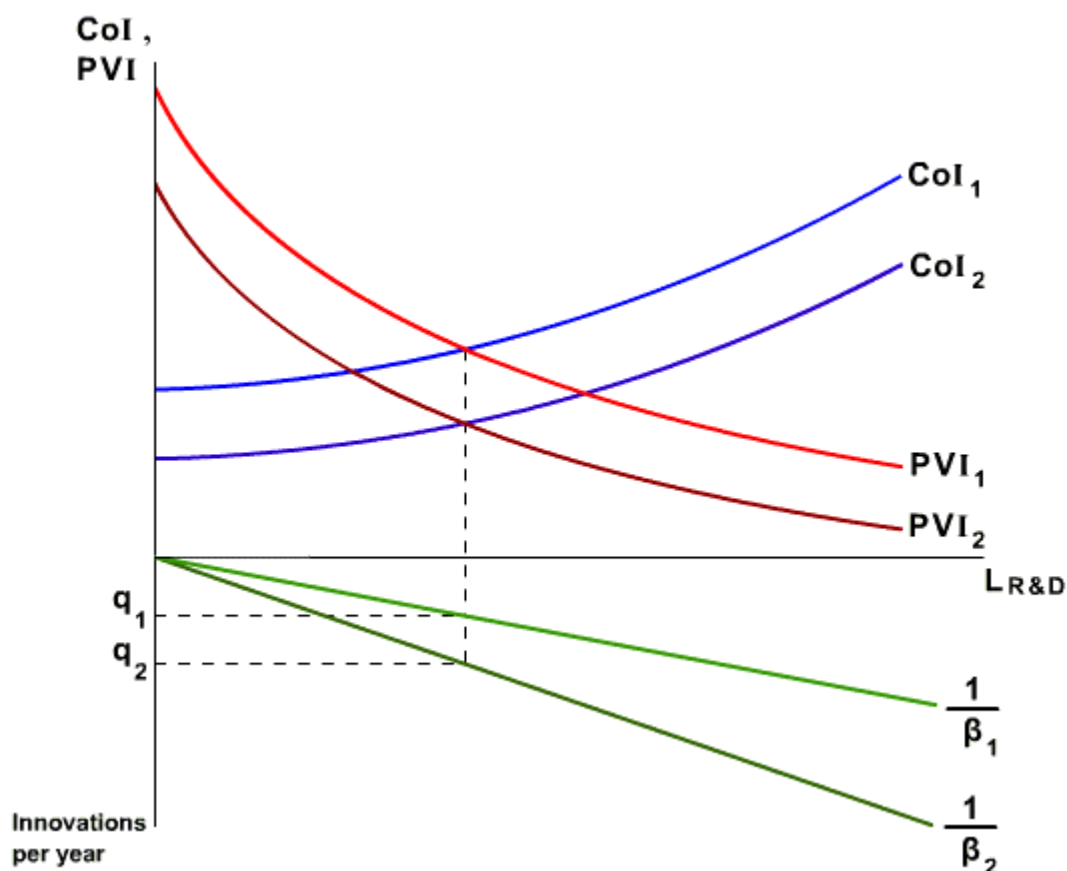
- Trade's expansion of the market increases π and shifts the **PVI** curve up, thereby offsetting the downward shift of the same **PVI** curve by the decline in β. And the increase in effective L further contributes to the downward shifting of the **COI** curve. The net effect shows the **COI** curve shifting down by more than the PVI curve.

- Actually the **PVI** curve might not shift down, or it might shift up if the profit effect is strong relative to the innovation increases the amount of innovation because trade's reduction in the costs of innovation from $\dfrac{1}{\beta_1}$ to $\dfrac{1}{\beta_2}$.