Theories of Economic Development

References:


§ 1. Nelson’s Model

See http://www.fondazionebassetti.org/0due/docs/nelson.htm
http://www.druid.dk/conferences/nw/

Variables and Constants:

\[ Y \]: national income; \[ L \]: labor force; \[ K \]: capital stock;

\[ S \]: savings; \[ I \]: investment;

\[ y \]: per capita(worker) national income = \( \frac{Y}{L} \);

\[ \sigma \]: capital-output ratio = \( \frac{K}{Y} \).

Functions (of per capita income):

\[ n(y) \]: rate of population growth; \[ s(y) \]: average saving ratio.

The Model:

**Assumption 1**: The capital-output ratio \( \sigma \) is constant.

**Assumption 2**: The rate \( n(y) \) is negative when \( y \) is very small, and then increases, gets positive, attains the maximum, and finally starts to decrease.

**Assumption 3**: The ratio \( s(y) \) is negative when \( y \) is very small, and then increases and gets positive.

The Dynamics:

\[ \hat{y} = \left( \frac{\hat{Y}}{\hat{L}} \right) = \hat{Y} - \hat{L} = \hat{K} - n(y) = \frac{I}{K} - n(y) = \frac{S}{K} - n(y) = \frac{s(y) \cdot Y}{\sigma} - n(y). \]
Propositions:

**Proposition 1.** There can be multiple equilibria, and a poverty trap.

**Proposition 2.** To escape a poverty trap, a country may (i) increase the saving ratio; (ii) decrease the rate of population growth, or (iii) borrow from, or exploit other countries.

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**Fig.** Nelson’s Model of Development

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§ 2. **Lewis’s Model**

See [http://cepa.newschool.edu/het/profiles/lewis.htm](http://cepa.newschool.edu/het/profiles/lewis.htm)

[http://www.econlib.org/library/Enc/bios/Lewis.html](http://www.econlib.org/library/Enc/bios/Lewis.html)


(William Arthur Lewis was awarded the Nobel Memorial prize in 1979.)

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**Lewis Model:** A dual economy, the traditional sector and the modern sector. In the former, labour supply is unlimited, and the wage level is at the subsistence. Thus, the investment to improve the productivity in the traditional sector has no good effect on a developing country.