

Development Policy Lecture 5

The Lewis Model



Sir Arthur Lewis



- Born in 1915 in St. Lucia, which was a British colony until 1958.
- Won a scholarship to the London School of Economics in 1932. Completed his PhD in 1938
- Taught at the University of Manchester and Princeton University, was UN advisor to Ghana, and Vice-Chancellor of the University of the West Indies
- Lewis was knighted in 1963 and awarded the Nobel Prize for economics in 1979



St Lucia

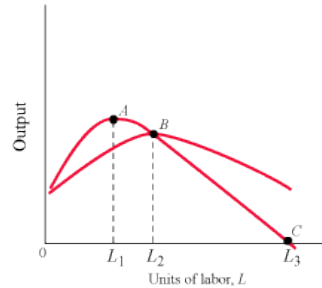
Thomas Malthus, 1766-1834

- *Essay on the Principle of Population*, 1798
- Population growth far exceeds the growth of food production
- Rising food prices reduce real wages below subsistence, which reduces population growth (lower fertility and higher mortality rates)
- Therefore wages would tend to gravitate towards subsistence levels.
- Malthus was concerned with average rather than marginal productivity of agriculture.

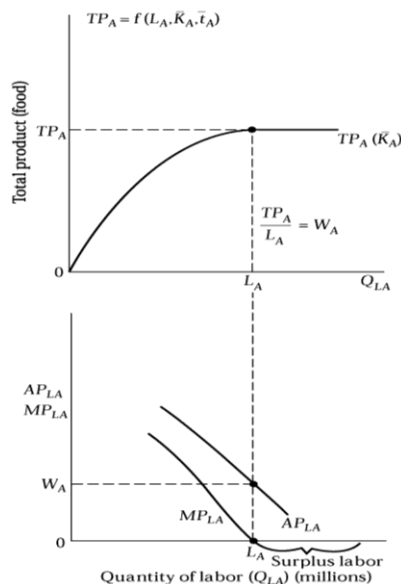


Marginal and average product of labor

- Marginal product of labor falls more sharply than the average product.
- Employer in competitive market will only hire to the point at which the $MPL = \text{wage}$.
- Malthus was not thinking of competitive firms but farm households producing for subsistence on rented land.
- The average wage can be interpreted as the average revenue product of farm production of a family sharing the proceeds of farm production equally.

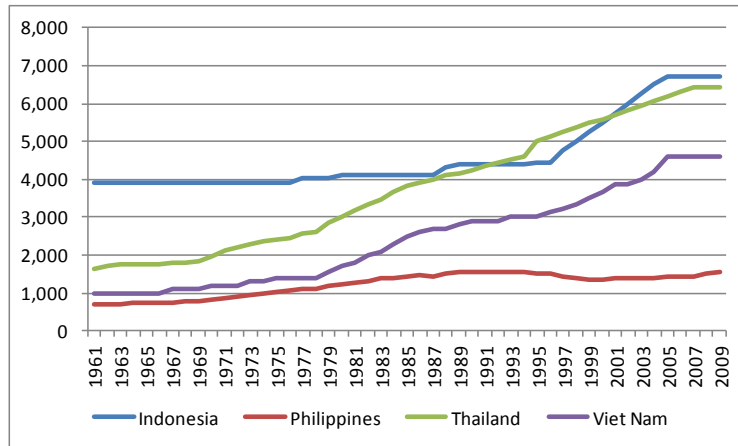


MPL, APL and output



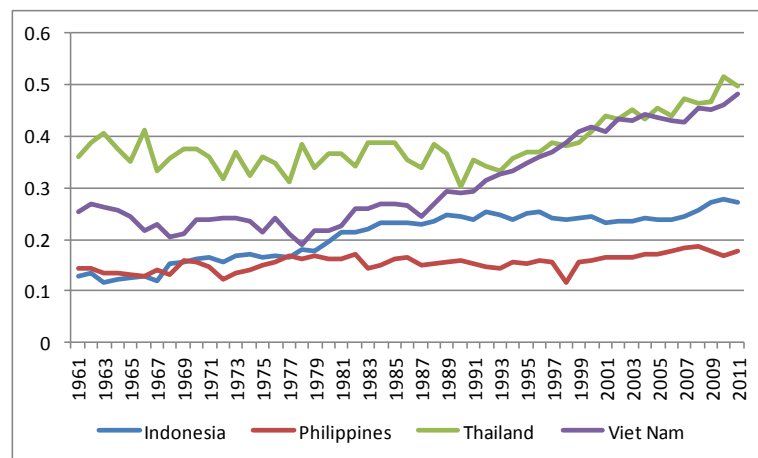
- Total product per unit of labor does not rise when marginal product of labor is zero.
- Average product of labor in the traditional sector sets the subsistence wage in the traditional and modern sectors.
- Agricultural production does not fall as workers move into the modern sector

Area equipped for irrigation (ha., thousands)



Source: FAO Stat

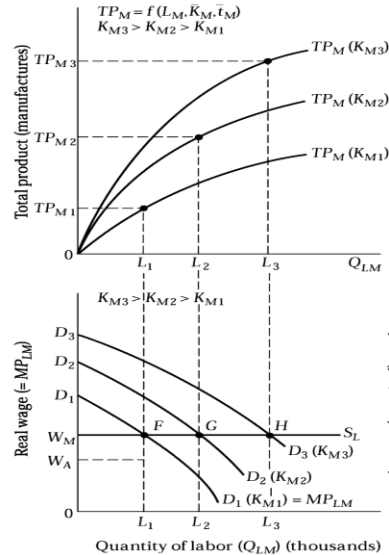
Rice paddy production per capita (tons)



Source: FAO Stat, WDI

Accumulation in the modern sector

- Labor moves to the modern sector at a constant wage.
- Profits accrue to investor in the modern sector, which provides capital for re-investment
- Increasing returns to scale mean higher profits in larger enterprises.
- Eventually labor demand absorbs all surplus labor, and real wages in the modern sector rise.

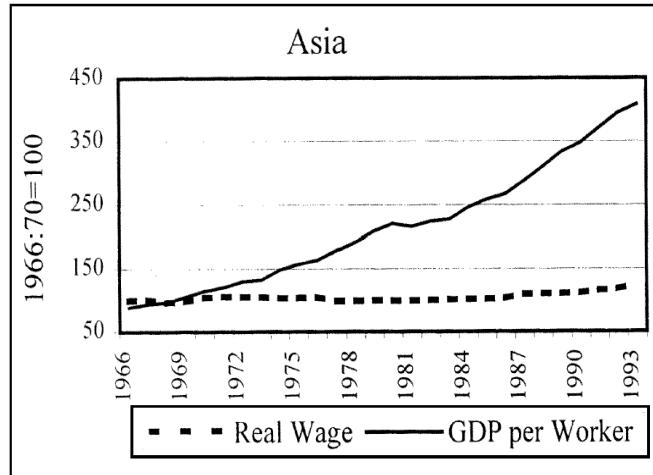


Land and Labor productivity in East Asia and Sub-Saharan Africa

		Asia	Africa
Land productivity (kg grain/ha)	1965	3,112	484
	1980	4,730	555
	1994	6,629	794
Labour productivity (kg grain/person)	1965	3,234	2,905
	1980	4,597	3,337
	1994	7,608	3,690

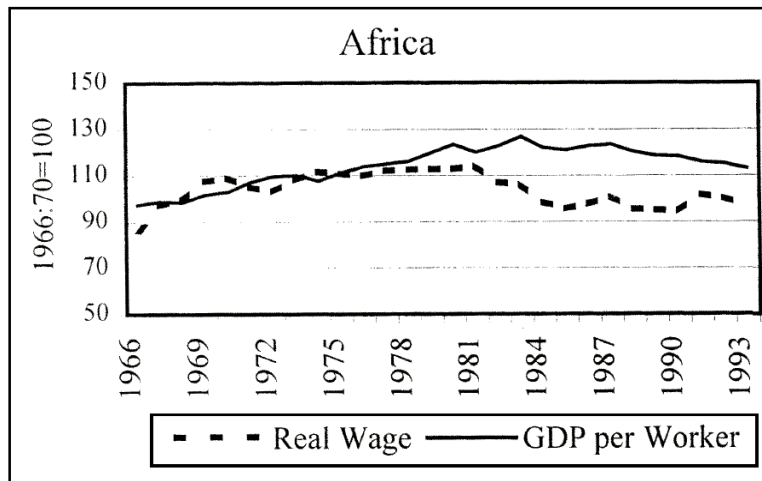
Source: Karshenas 2001

Real wages and productivity, East Asia



Source: Karshenas 2001

Real wages and productivity, Sub-Saharan Africa



Source: Karshenas 2001