John Weiss. 1985. *Manufacturing as an Engine of Growth – Revisited*. Industry & Development no. 3, pp39-62.

- **Linkages between Manufacturing & Economic Growth**
  - General Linkages
    - Demand linkages: incomes, demand for inputs, equipment and services, and availability of manufactured
    - Pecuniary linkages
      - Forex (earnings & savings)
      - Profits (savings & investment)
      - Taxes
    - Technological linkages: employment, skills and technology production and transfer
  - Linkages Specific to Manufacturing
    - Dynamic/cumulative Increasing Returns
      $p = a + bq$
      $e = a + bq, 0 < b < 1$
      - Skills, technological progress, capital goods & organization
      - Specialisation and network of suppliers
        - Kaldor
        - Young
      - Capital goods: skills & knowledge; R&D; cheaper capital goods
        - Arrow
        - Cornwall

- **Case for promoting Manufacturing and growth**
  - Case for Infant Industry
    - Endogenous Productivity Growth
      - Skills and Organization
      - Specialisation & network of suppliers
      - Technological progress – capital goods
    - Productivity Growth in other sectors
      - Pecuniary linkages: forex + savings + taxes ⇒ greater investment
      - Capital goods: cheaper and higher quality ⇒ productivity
      - Absorption of surplus labour from other sectors
  - Case for Infant Economy
    - Traditional: productivity increases over time, and costs fall, as markets expands and learning takes place
    - Dynamic increasing returns
      - Productivity gains are a function of skill, technology & specialisation
      - Productivity gains are cumulative and permanent
      - Productivity gains are bigger for the economy as a whole

Summary of main points

Arguments for manufacturing

Dynamic increasing returns – network of suppliers, skills & organization, productivity increase in other sectors
Capital goods – cheaper capital + knowledge and technological progress
Pecuniary linkages – profits and investment opportunities
Absorption of labour from other sectors, released because of productivity increases

Arguments for infant economy

Effects of dynamic increasing returns are felt at aggregate level
Impact of cumulative effects on the economy as a whole is stronger than on manufacturing sector
Impact of the output of a particular industry on the rate of growth of the manufacturing sector as a whole

Problems for LDCs

Capital goods – importers with very little production not to speak of R&D and innovation
Intermediate goods – little production and diversification
Network of suppliers – very limited and narrow
Technological capabilities – very limited, even to select, adapt and absorb foreign technology
Market – small size, narrow demand, low quality
Savings and forex shortages – limits to quantity of investment

Considerations in particular for industrial strategies in LDCs

Endogenous solution to limits to industrialisation

- Finance and investment – exports and foreign investment;
- Market – exports;
- Network of suppliers – which industries are more likely to generate increasing returns? How to develop domestic linkages? Are domestic linkages the only form of promoting increasing returns?
- Short-term costs – steps in the process of industrialization with lowest possible short-term costs;
- Developing of technological capabilities;
- How to take advantages of foreign direct investment (linkages, capabilities, capital, diversification, markets, etc.).