



EE451

# Alternative Theories of Trade

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# Alternative Theories

- The Imitation Lag and Product Cycle (Posner, 1961)
- The Linder Theory
- Increasing Returns with Monopolistic Competition (Krugman, 1979)
- External Economies of Scale
- Intra-Industry Trade

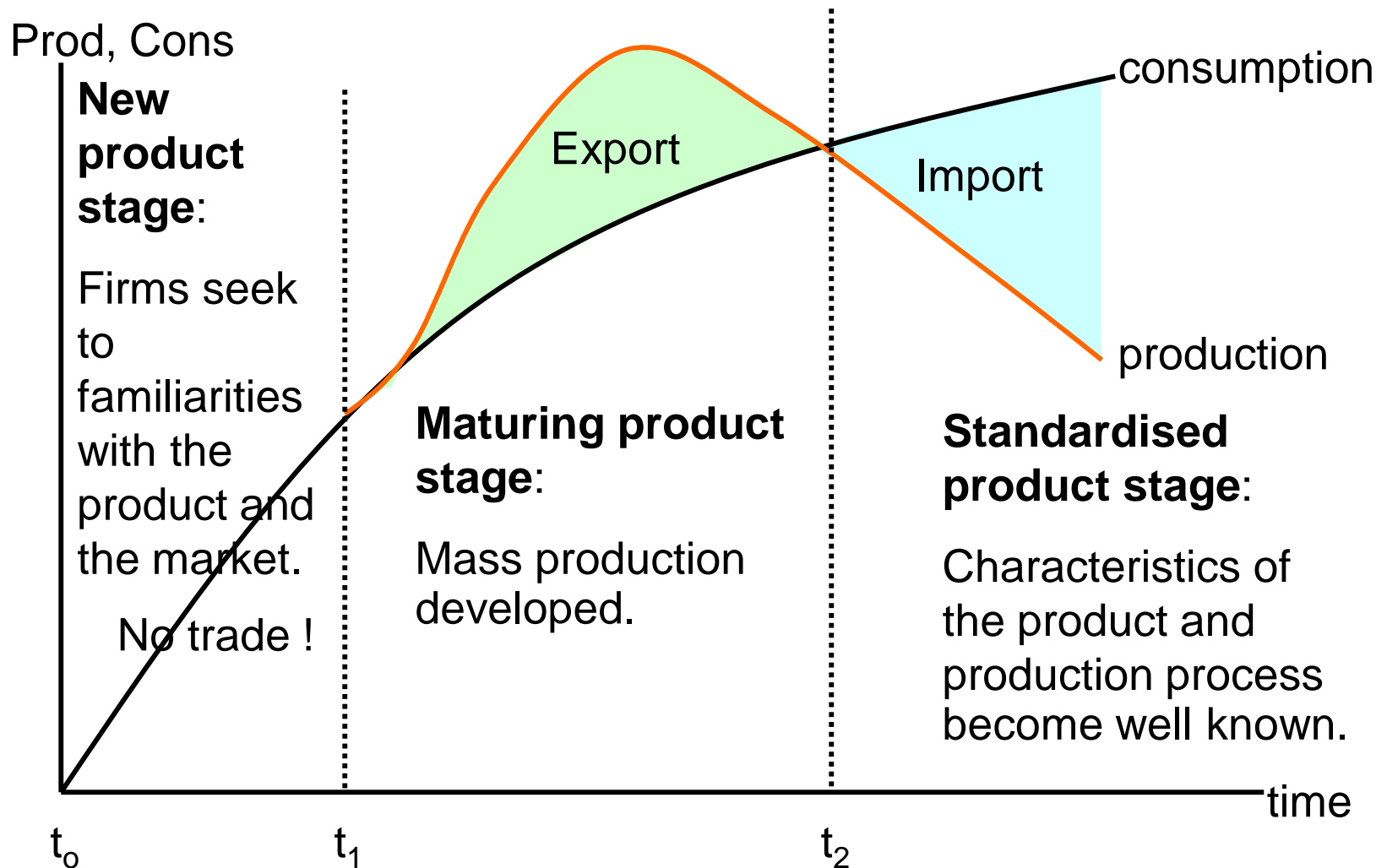
# Product Cycle Theory

- Make use of the sequence of innovation and imitation.
- Assumes
  - the same technology is NOT always available in all countries
  - there is a delay in the transmission or diffusion of technology from one country to another.
- Imitation lag: the length of time that elapses between the product's introduction in country I and the appearance of the version produced by firms in country II.
  - Learning period (acquiring technology and know-how in order to produce the product) plus Time to purchase inputs, install equipments, process the inputs and bring the finished product to market.
- Demand lag: the length of time between the product's appearance in country I and its acceptance by consumers in country II as a good substitute for the products currently consumed.

# Product Cycle Theory

- Net lag = imitation lag – demand lag
- 3 stages of product life
  - New
  - Maturing
  - Standardised.
- In fact, it postulates a DYNAMIC comparative advantage because the country source of exports would shift throughout the life cycle of the product.

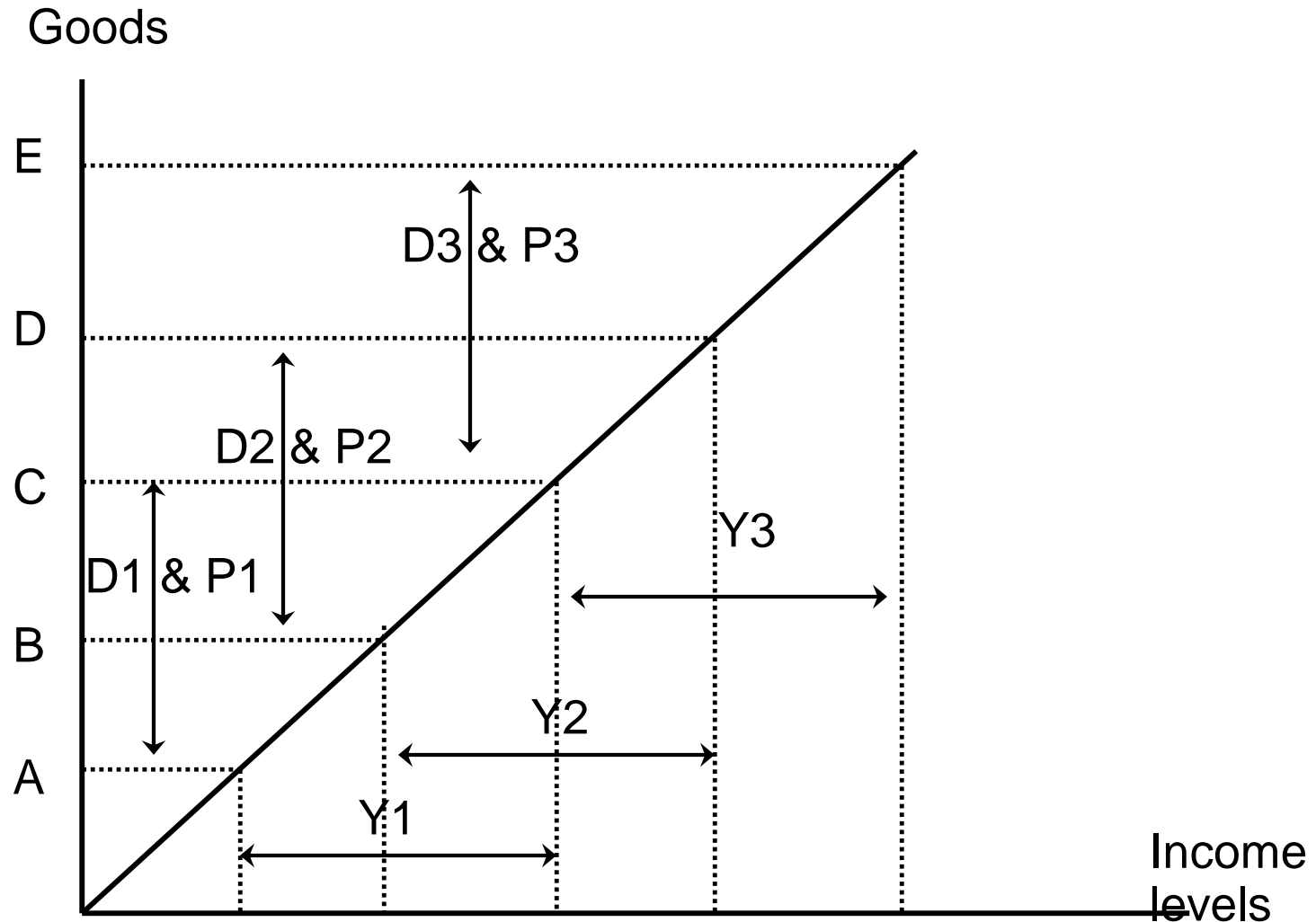
# Product Cycle Theory



# The Linder Theory (1961)

- H-O: supply-oriented
- L-T: demand-oriented
  - Tastes of consumers are conditioned strongly by their income levels
  - The per capita income level of a country will yield a particular pattern of tastes.
- Overlapping Demand

# The Linder Theory (1961)



# The Linder Model

- International trade in manufactured goods is more intense between countries with similar per capital levels than between countries with dissimilar per capita income levels.
- This conclusion is consistent with aspects of the product cycle theory.
- But did not identify the direction in which any given good would flow.

# Gravity Model

- Predict the volume of trade on a bilateral basis between any two countries which depend on
  - National income of two countries (ability to purchase & capacity to produce) or population size (to indicate market size and perhaps economies of scale)
  - Some measure of distance (as a proxy for transportation costs)
  - Variable reflecting an economic integration arrangement between two countries (eg: FTA)

# Increasing Returns to Scale

- Reasons for IRS (or economies of scale)
  - Indivisibilities of resources
  - Division of labour
  - specialisation
  - Once-and-for-all inputs (such as designing of an automobile and the proofreading of a book need no increase at all as output expands.)
- Internal economies, whereby growth of an individual firm causes cost reductions → downward sloping AC
- External economies, pertaining to the *industry level* → downward shift of the AC

# Increasing Returns to Scale

- Assume two countries experiencing *external* economies of scale, making reduction in the cost when an industry grows → PPF is convex
- Implication to market structure → capable of capturing the majority of the entire market → oligopoly/monopoly



# Implication to PPF & gains from trade

# Monopolistic Competition

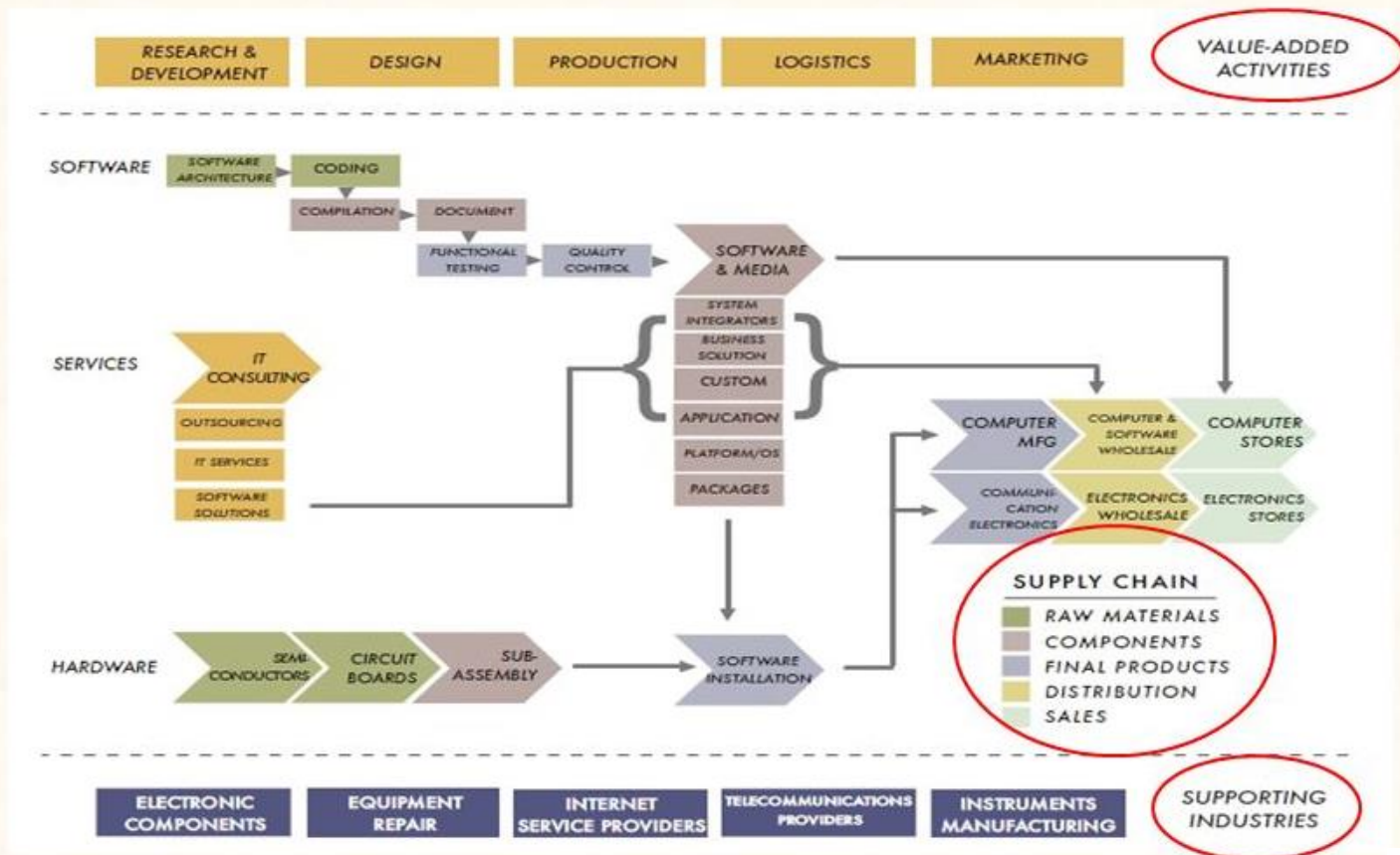
- Krugman model: internal EOS
- Differentiated products
  - Combined with IRS can easily explain intra-industry trade.
- Implications to gains from trade
  - Consumers gain access to greater variety.
  - Unit costs and price decline.
- Then the gains from trade are normally larger under monopolistic competition.

# Product Differentiation in Automobiles

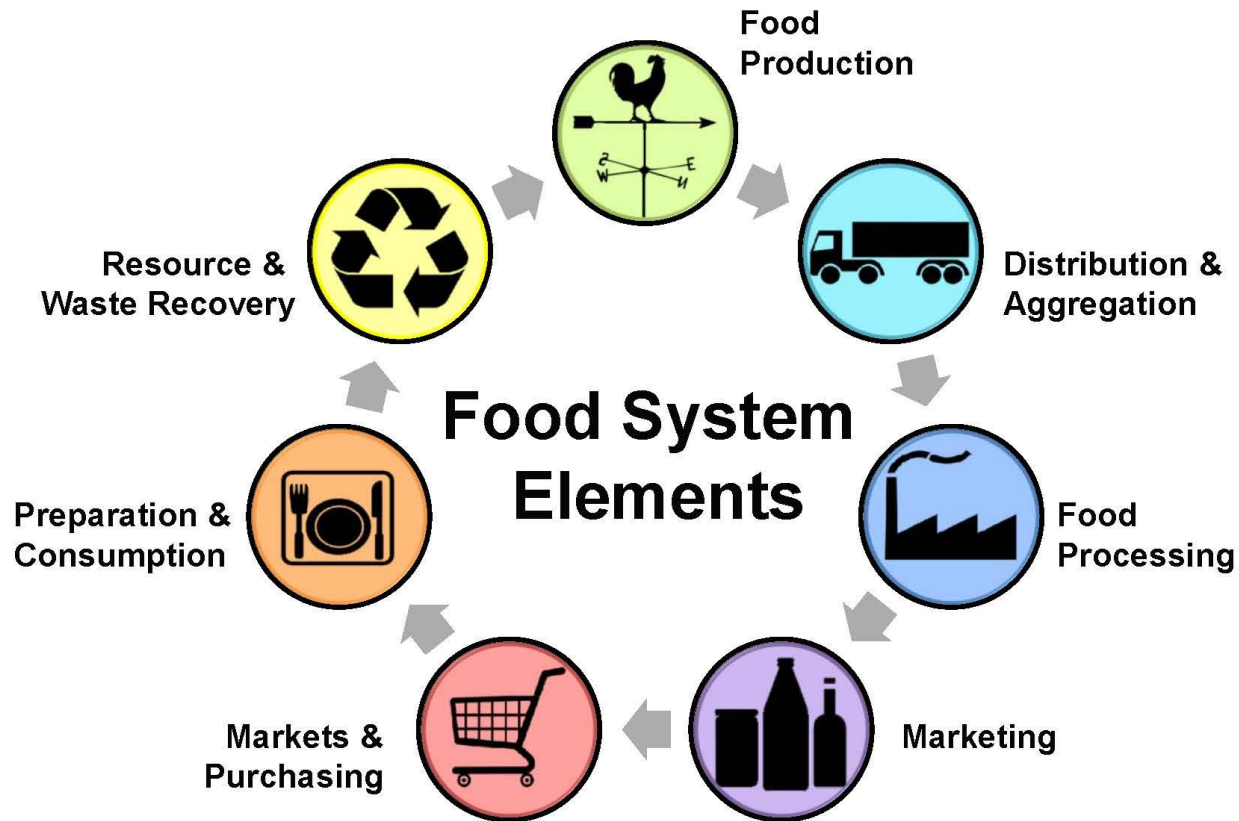
- Variety of Car Models
  - BMW 3-series/ 5-series/ 7-series/ M5/ M6/ X3/ X5/Z4
- **Toyota** Glanza. / Fortuner. / Innova Crysta. / Yaris. / Etios Liva. / Land Cruiser. / Corolla Altis. / Camry.
- **Audi** Q3. / A3. / Q7. / A4. / S5. / R8. / Q5.
  - etc.

# What is a value chain?

A value chain describes the full range of activities that firms and workers carry out to bring a product from its conception to its end use and beyond.



Source: CGGC (<http://www.cggc.duke.edu>), More Information: Global Value Chains ([www.globalvaluechains.org](http://www.globalvaluechains.org))



*Adapted by Christy Shi, Center for Environmental Farming Systems.*

*From: Wilkins, J. and Eames-Sheavly, M. Discovering the Food System; An experiential learning program for young and inquiring minds. Cornell University, Departments of Nutritional Science and Horticulture. <http://www.discoverfoodsys.cornell.edu/>*

# Intra-Industry Trade

- Trade in the same product category.
- Basic reasons for IIT
  - Product differentiation
  - Transport costs
  - Dynamic economics of scale
  - Degree of product aggregation
  - Differing income distributions in countries
  - Differing factor endowments and product variety

# Intra-Industry Trade

Grubel and Lloyd (1975) define IIT as the difference between the trade balance of industry  $i$  and the total trade of this same industry.

## ■ How to measure IIT

$$I = 1 - \frac{\sum |(X_i / X) - (M_i / M)|}{\sum [(X_i / X) + (M_i / M)]}$$

$I = 1$ : 'total' intra-industry trade → a country's exports and imports within a given industry are equal.

$I = 0$ : a country either exports or imports, not both, according to what comparative advantage model predicts.

# Indexes of IIT for US industries, 1993

Power-generating machinery	0.97
Electrical machinery	0.96
Medical and pharmaceutical	0.86
Office machinery	0.81
Telecommunication devices	0.69
Road vehicles	0.65
Clothing and apparel	0.27
footwear	0.00

# Manufacturing IIT as % of Total Manufacturing Trade, 1992-2000

	1992-95	1996-00		1992-95	1996-00
Czech	66.3	77.4	NZ	38.4	40.6
Slovak	69.3	76.0	Australia	29.8	29.8
Mexico	74.4	73.4	Norway	37.5	37.1
Hungary	64.3	72.1	Greece	39.5	36.9
US	65.3	68.5	Turkey	36.2	40.0
UK	73.1	73.7	Korea	50.6	57.5
Ireland	57.2	54.6	Japan	40.8	47.6