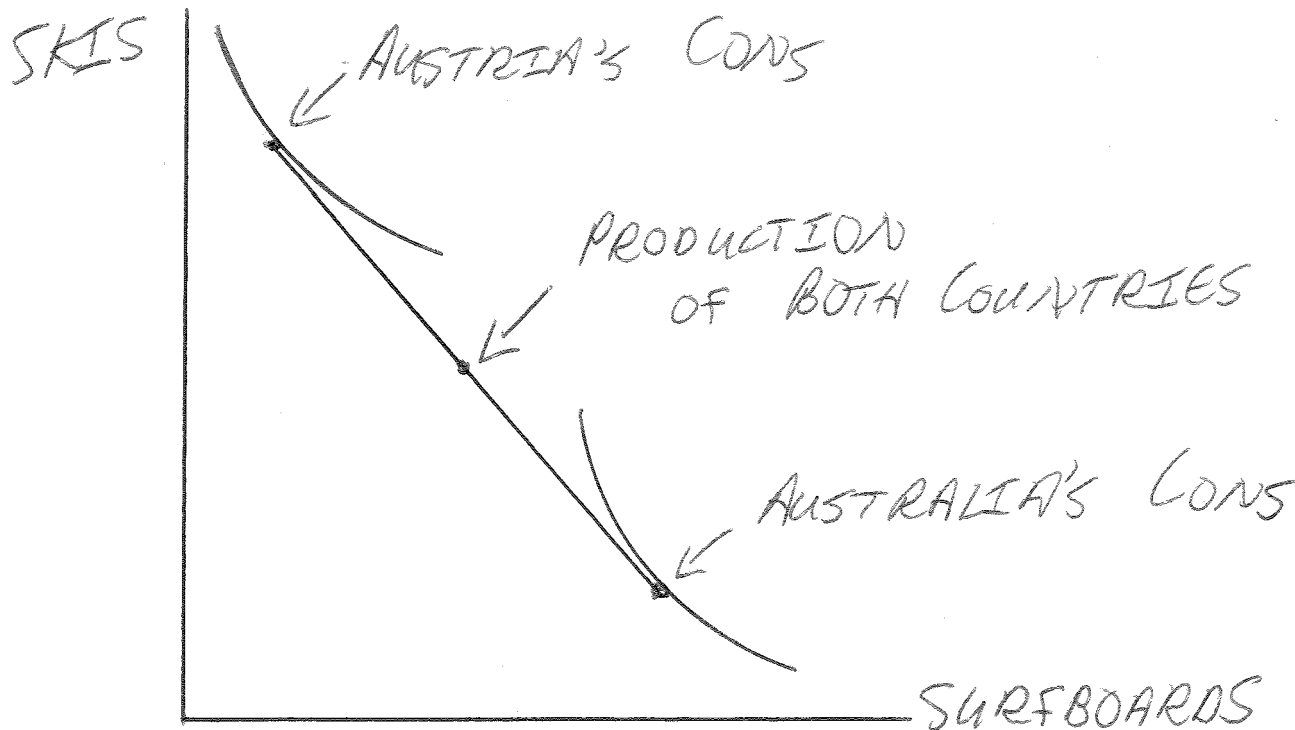


Lecture 12

Demand, Linder Hypothesis, Vernon's Product Cycle, Gravity, Grubel-Lloyd Indices, Miscellaneous

1. Different tastes between countries as a determinant of demand.

If everything on the production side of two economies is identical, then each country will import the good for which it has a high preference in demand.



2. Per capita income.

Suppose that all consumers in both countries have identical preferences, but that they are non-homogeneous. High income consumers consume more X relative to Y than low income consumers.

That is, X is a "luxury" and Y is a "necessity".

If the countries are identical except for factor productivity, then the high productivity country will export Y and import X. Per capita income becomes a basis for trade.

Estimates of income elasticities of demand

Food	0.45
Beverages and Tobacco	1.24
Clothing and Footwear	1.00
Gross Rent	1.74

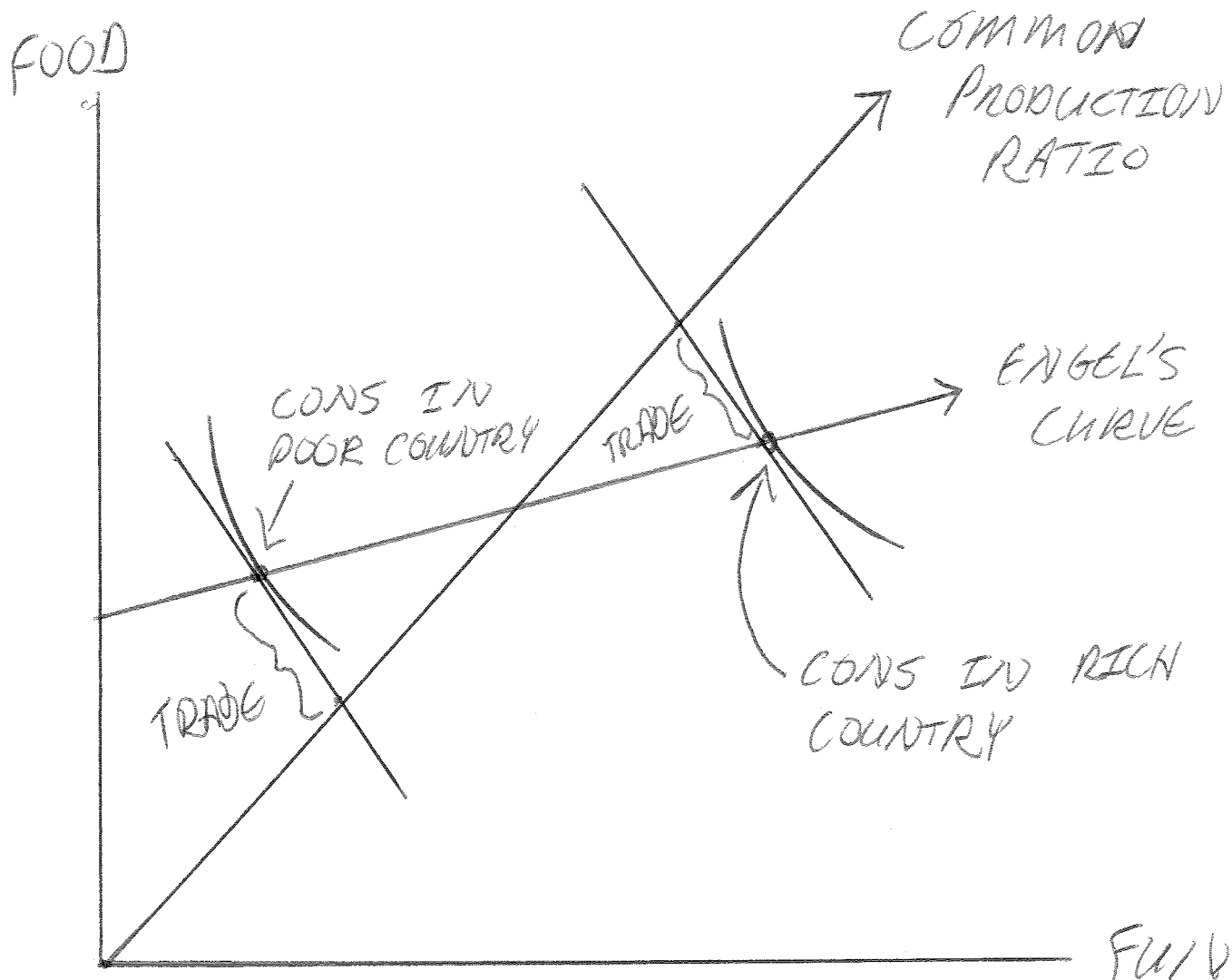
Fuel and Power	0.81
House Furniture	0.76
Medical	1.91
Trans and Communication	1.72
Recreation	1.42
Education	0.87
Other	1.25

Recall our example of the Stone-Geary utility function: origin-shifted Cobb-Douglas, with identical share parameters for all consumers.

$$U_j = \prod_i^n [C_{ij} - C_{ij}^*]^{\alpha_i} \quad C_{ij} = C_{ij}^* + \alpha_i \left[I - \sum_1^n C_{ij}^* \right] / p_i$$

where the C^* are called “minimum consumption requirements

Suppose that both countries produce goods in the same proportion, but one has a much higher per capita income than the other. This will generate trade based solely on the difference in per capita income.



3. The Linder hypothesis

- (1) Heckscher-Ohlin theory is fine for primary products.
- (2) However, manufactured goods do not exist "in nature".
- (3) Entrepreneurs create new manufactured goods in response to perceived demand.
- (4) Demands are closely related to per capita income.
- (5) After a product is introduced, where does the entrepreneur look for additional markets?
 - (1) Entrepreneurs export to markets with similar per capita incomes.
- (7) This is suppose to help explain the large volume of trade among the high income developed countries.

4. The product cycle (Vernon)

- (1) New products are first introduced in the high income countries ala Linder. Production must initially take place near the market: production may require special skills, and critical revision.
- (2) Exports begin to other high income countries.
- (3) As development proceeds, (a) exports begin to lower income countries as incomes grow there, (b) production becomes more standardized, requiring less skilled labor.
- (4) Eventually production shifts to the lower income countries as producers in the high-income countries move on to the next generation of products.
- (5) Finally, the original product may be exported back to the high income country which first introduced it.

- (6) This theory does not necessarily contradict HO and Linder: the high income, skilled-labor-abundant country exports the skilled-labor intensive goods, it is that a given good is skilled-labor intensive at one point in time, unskilled-labor intensive later.

The Linder Hypothesis seems to explain why the high-income developed countries trade so much, but not why the low income countries trade so little.

The following features seem to complete the explanation Markusen (AER 1986), Markusen and Wigle (EJ 1990)

1. The skilled-labor and capital-intensive differentiated goods are high income elasticity goods.

The high-income countries that produce the differentiated manufactured goods also spend a high fraction of their incomes on these goods. Each differentiated good is sold in each market, so trade among the high-income countries is very high.

The unskilled-labor abundant (poor) countries have a high demand for the low income-elasticity labor-intensive goods. So instead of exporting a lot of these goods, they are consumed at home. The low income countries don't trade much.

2. The low income countries are simply poor - they have a low share of world income. Thus they do not trade much.
3. The pattern of world protection has historically been biased against the low-income countries.

The high-income countries have high protection against the labor-intensive manufactured exports of the low-income countries (regarding them as a threat to local manufacturing).

The low-income countries have high protection against the goods from the high-income countries (regarding them as necessities).

The Gravity Equation.

It turns out that a very simple equation predicts the volume of bilateral trade between two countries very well

$$\ln T_{12} = \beta \ln Y_1 + \beta_2 \ln Y_2 + \beta_3 DIST \quad \text{where}$$

T_{12} = bilateral trade volume between countries 1 and 2

Y_i = income of country i

$DIST_{12}$ = distance between countries 1 and 2

Note that this predicts a higher level of trade between countries of similar size, but also that trade remains proportional to total income as both countries get larger.

Theories that help explain this success:

- (1) National (“Armington”) product differentiation. Countries in fact produce distinct goods, even if they have similar names and product classifications. In other words, countries are completely specialized. Even if countries have identical relative endowments, there will be trade because products are not the same across countries.
- (2) Monopolistic-competition. We have already discussed this. Intra-Industry trade rises with increased country-size similarity.
- (3) Imperfect competition with segmented markets (“reciprocal dumping”). When countries have similar relative endowments, trade (cross-hauling intra-industry trade) is highest when they have the same size.

Recent papers: Evenett and Keller (JPE), Feenstra, Markusen, and Rose (CJE 2001) give evidence, other references.

The Grubel-Lloyd Index

Country i, industries j and k.

$$(1) IIT_{ijk} = \left[1 - \frac{|exports_{ijk} - imports_{ijk}|}{exports_{ijk} + imports_{ijk}} \right] * 100$$

Table 1. Grubel-Lloyd Indices (averaged over all countries in sample)

AFFIL SALE		TOTA TRADE 1997	
TMFG	82.9	TMFG	84.4
FOOD	73.5	FOOD	86.1
CHE	86.8	CHE	86.5
PRIM	71.5	PRIM	68.5
MAC	52.3	MAC	93.2
ELEC	98.4	ELEC	90.9
TRAN	52.6	TRAN	86.9
OTHE	81.6	OTHE	63.0