

Gains through increased product diversity for consumers

Gains through increased variety of specialized intermediate inputs for producers.

TABLE 14.3 THE COMPOSITION OF WORLD MERCHANDISE EXPORTS BY COUNTRY GROUP, 1990

Country Group	Exports (billions)	Share of World Exports	Share of World GDP	Export Share in GDP (%)
World	3188	100.0	100.0	14.3
High-Income Developed	2379	74.6	71.6	14.9
Intra-HID	1816	57.0	71.6	11.4
Other High Income	177	5.5	1.5	54.7
Upper Middle Income	307	9.6	6.8	20.2
Lower Middle Income	184	5.8	4.2	19.8
Low Income	141	4.4	4.1	15.4

$$\text{Intra-Industry trade index} = 100 \left[1 - \frac{ex_j - im_j}{ex_j + im_j} \right]$$

TABLE 14.4 INTRAINDUSTRY TRADE BY COMMODITY AND COUNTRY, 1990

Commodity	Canada	F.R.Germany	Japan	South Korea	UK	US
Fuels	73.1	31.8	4.7	11.9	99.9	30.7
Chemicals	92.8	75.8	99.0	50.6	89.9	75.0
Special Industrial Machinery	62.5	45.6	35.5	26.9	89.7	91.8
Computers	46.3	74.7	39.0	68.4	95.3	99.8
Automobiles	79.7	58.7	26.0	10.1	62.3	37.5
Clothing	24.1	52.1	0.2	0.2	60.7	17.3
Precision Instruments	48.9	71.6	70.4	37.6	91.6	67.7

Imperfect Competition and Increasing Returns to Scale II:

Gains through increased product diversity for consumers

Gains through increased variety of specialized intermediate inputs for producers.

(1) “Love of Variety”

Consumers like variety: an apple and an orange are better than two apples or two oranges.

But variety is costly. Scale economies (technical efficiency) are sacrificed by having a lot of diversity. Two apples can be produced for a lower cost than one apple and one orange.

Assume that both X and Y are produced with increasing returns to scale, a fixed cost plus a constant marginal cost.

Figure 1

Suppose that X and Y are symmetric, but imperfect substitutes.

(you are indifferent between one apple and one orange, but you would rather have one apple and one orange, than two apples or two oranges).

You prefer diversity. However, with scale economies, more diversity means smaller outputs of each good which in turn implies higher diversity implies higher costs (and lower quantity).

It may be optimal to have less diversity in order to have more quantity.

Figure 2

“Any color is ok as long as it is black”

In the case shown in Figure 2, it is better to have just one good produced in autarky. Utility is higher than if both are produced.

Now suppose that we put two identical countries together. By specializing, both countries can have both goods. Each country consumes at T in Figure 2.

There is no increase in technical efficiency, but a gain in utility due to more diversity. In Figure 2, consumers get half as much of each of twice as many goods.

$$U = \sum_{i=1}^n X_i^\alpha \quad 0 < \alpha < 1 \quad \text{where } n \text{ is } \textit{endogenous}$$

Suppose that there are initially n_0 goods, and that each good is initially produced in the same amount X_0 .

$$U_0 = \sum_{i=1}^n X_i^\alpha = n_0 X_0^\alpha$$

Now suppose that we give the consumer twice as many goods, but give them only half as much of each. New utility U_1 is given by

$$U_1 = (2n_0)(X_0/2)^\alpha = 2^{1-\alpha} n_0 X_0^\alpha > U_0$$

Figures 1 and 2 can be reinterpreted to be two specialized inputs into production, and the indifference curves are now isoquants.

The larger market with trade supposed more specialized intermediate goods and hence higher productive efficiency.

A carpenter, instead of having one general purpose saw, can have

table saw, ripping blade

table saw, cross-cut blade

radial arm saw

portable rotary saw

band saw

mitre saw

jig saw

bow saw

coping saw

(2) “Ideal Variety” approach

Suppose instead that individuals are only going to buy one unit of a good (e.g., an automobile). But individuals differ in their “ideal car”.

Suppose cars are “bundles of characteristics”. Imagine that there are only two characteristics, size and speed. There are two groups, WASPS and YUPPIES.

WASPS prefer size over speed, and YUPPIES prefer speed over size.

Figure 3

The straight line in this figure gives combinations of size and speed that can be produced for a given cost per unit, *for a given total output*. A is the WASPS “ideal” variety while B is the YUPPIES ideal variety.

Figure 4

Point C is a “compromise variety” that gives each group as much utility as their ideal varieties. C would cost more for a *given production volume*.

However, with increasing returns to scale, producing 100,000 of variety C might be cheaper than producing 50,000 of A and 50,000 of B.

Thus in the small economy, the compromise variety might be the choice.

But suppose that we put two identical countries together. If scale economies are diminishing (the average cost curve is a hyperbole), then 200,000 of C might not be that much cheaper than 100,000 of A and 100,000 of B.

So with trade, we might switch to each country producing one variety, and each consumer type getting their ideal variety.

How do we want to think of gains from trade in the ideal-variety model?

Suppose consumers' preference line a long a line in "characteristic space", which we index to be of length one. A consumers location on the line is the consumer's ideal variety if all sell for the same price.

Suppose that in the small, closed economy there is only one product available and the producer chooses the middle of the line so as to minimize distance from the average consumer,

"Distance" from a consumer to the central product can be interpreted as how far the available product is from the consumer's ideal variety.

The average distance between a consumer and the single good is $1/4$.

Now suppose we put two countries together and the larger market can support two producers, who space themselves equally, at points $1/3$, $2/3$ on the line.

Now each consumer is on average a distance of $1/6$ from the nearest good.

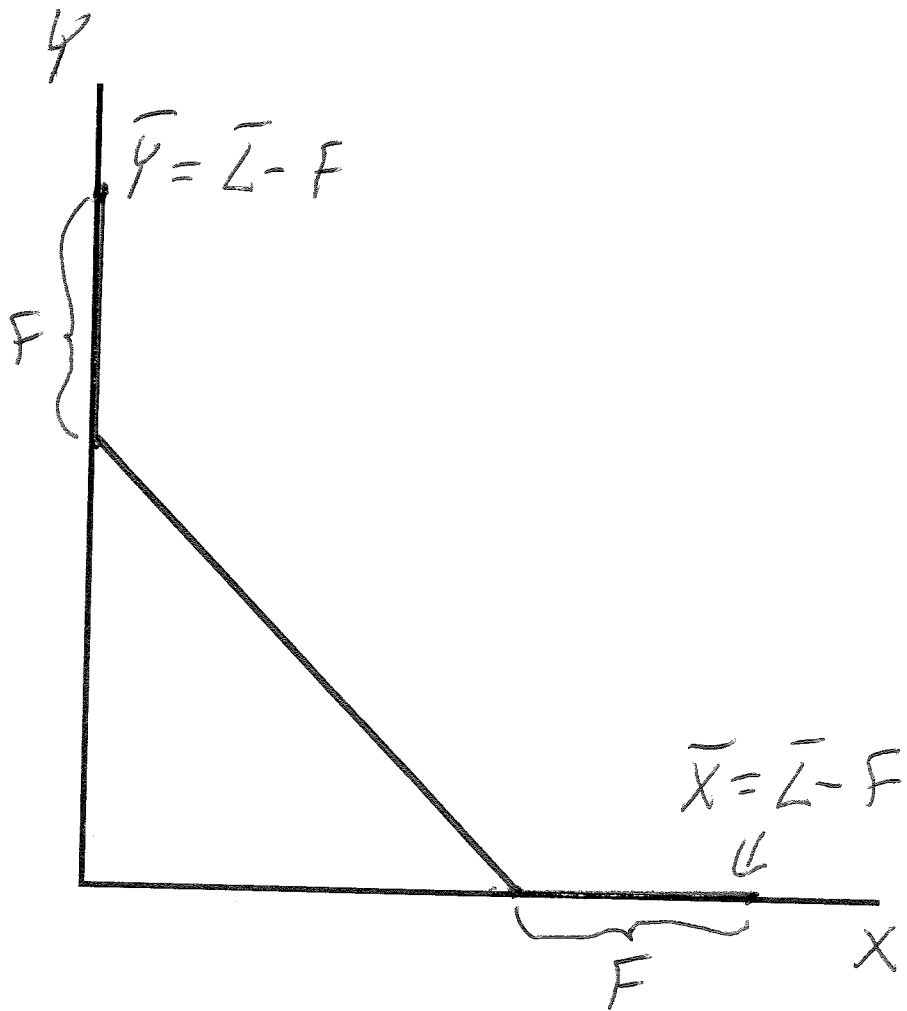
The welfare improvements and gains from trade in this case is an “on average” concept: consumers are, on average, getting a product closer to their ideal product.

1. Gains from trade may be captured in the form of increased product or input diversity instead of lower average costs for a fixed range of products.

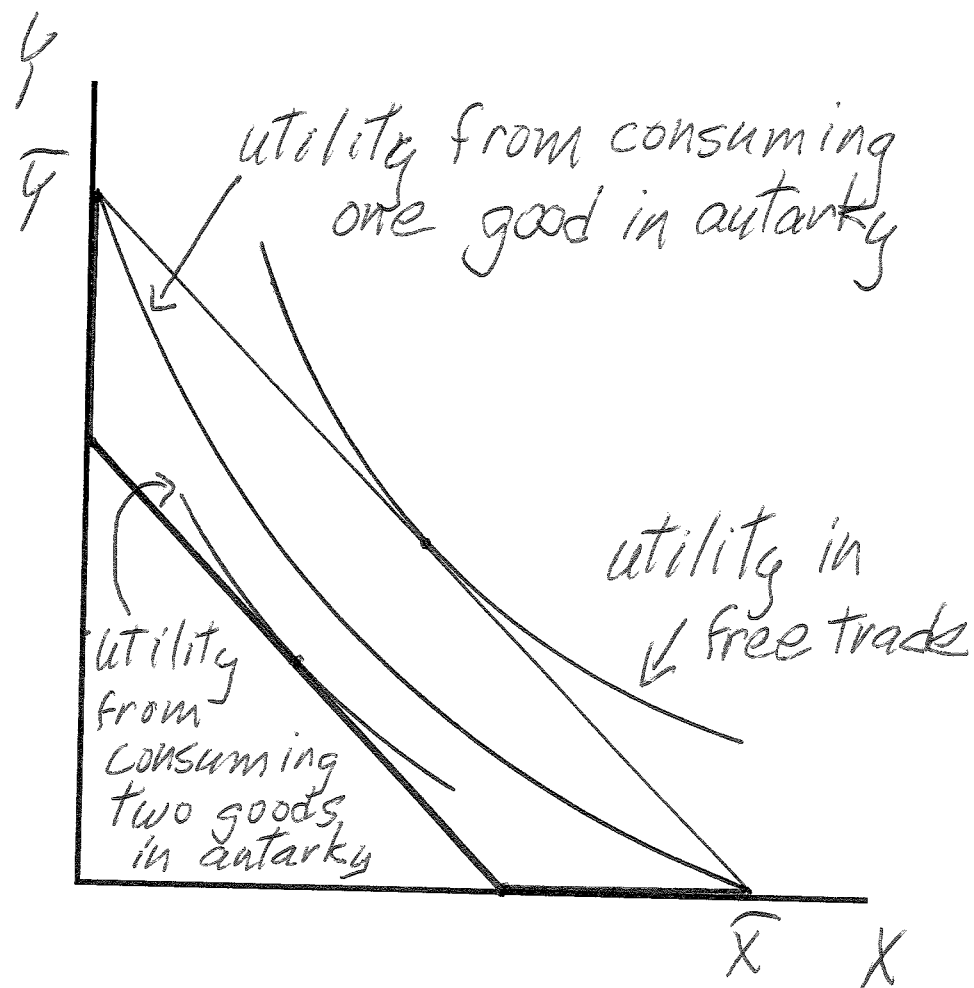
2. The “love of variety” approach views consumers as consuming more types of goods, a more varied basket, through trade.

3. The “ideal variety” approach, views consumers as choosing one product from many. Trade allows consumers, on average, to get a product closer to their ideal product.

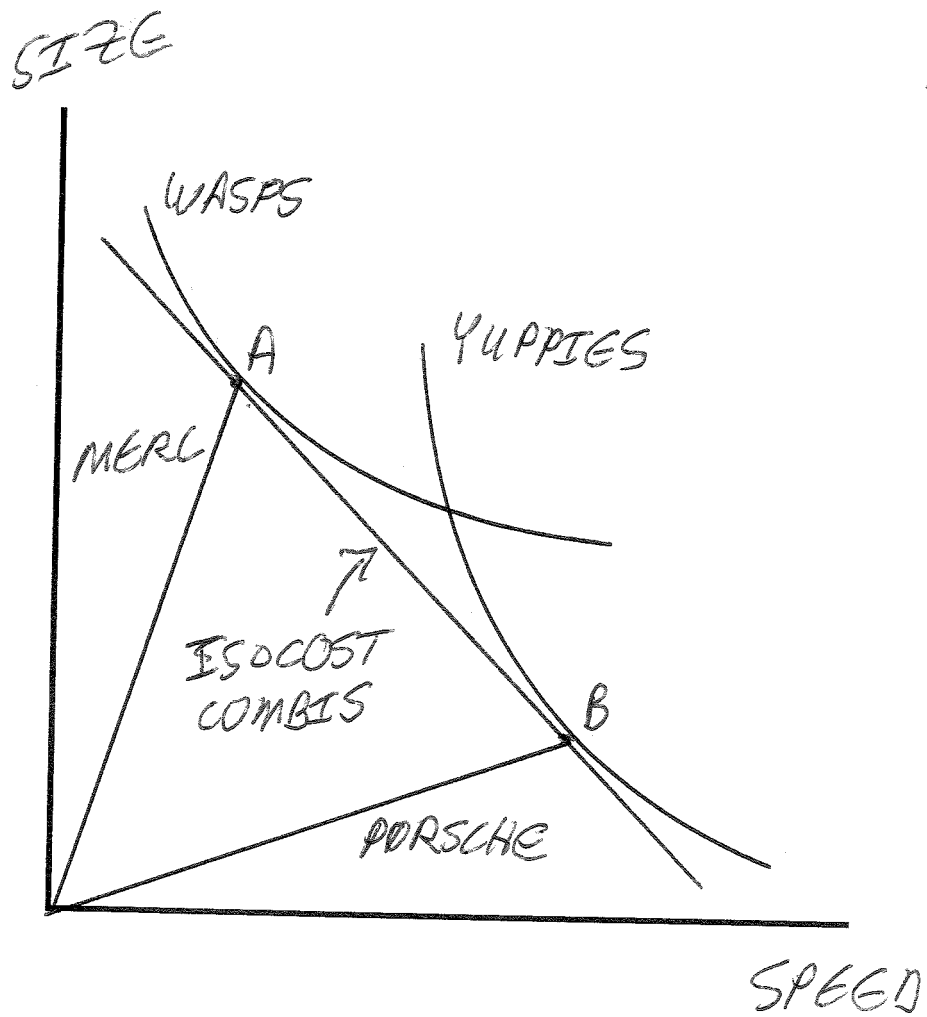
Combined with the previous set of notes: increasing returns to scale allow consumers to buy *same range of products at lower costs* (same products in larger quantity), or a *larger range of products at the same costs* through trade.



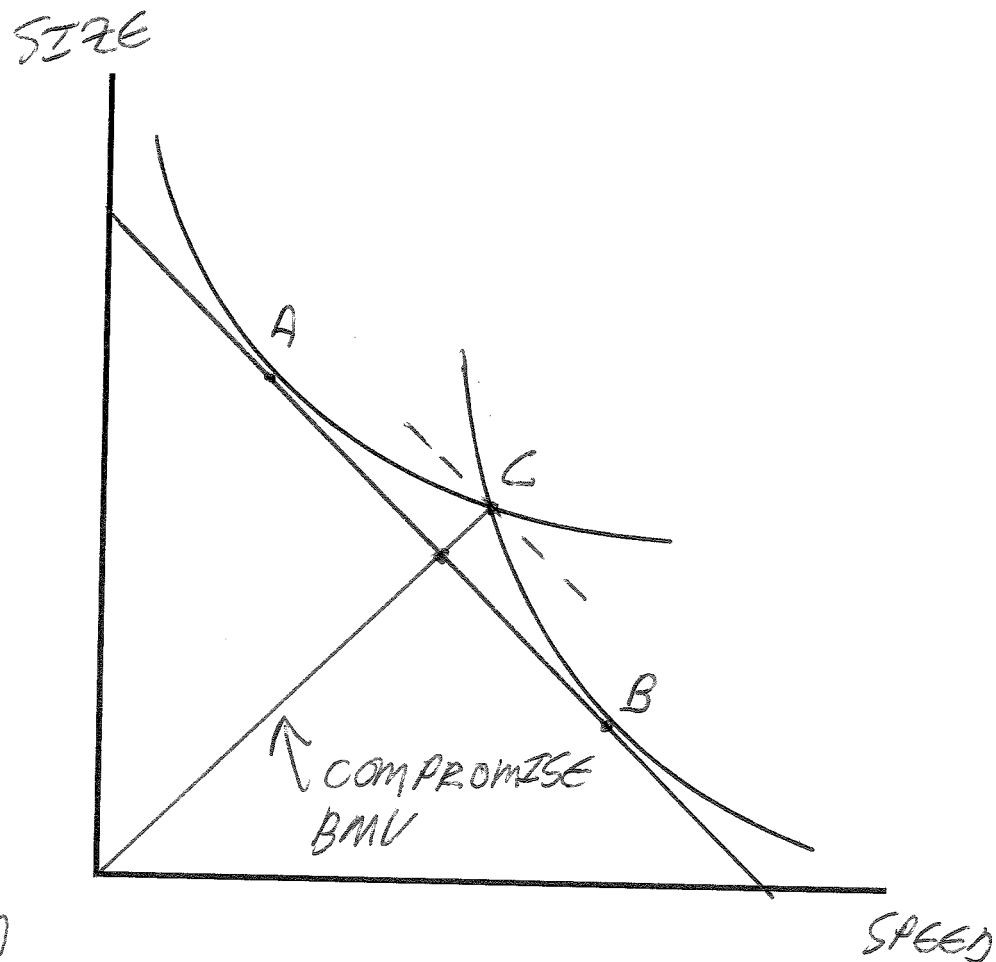
Unotes 8 Figure 1



Unotes 8 Figure 2

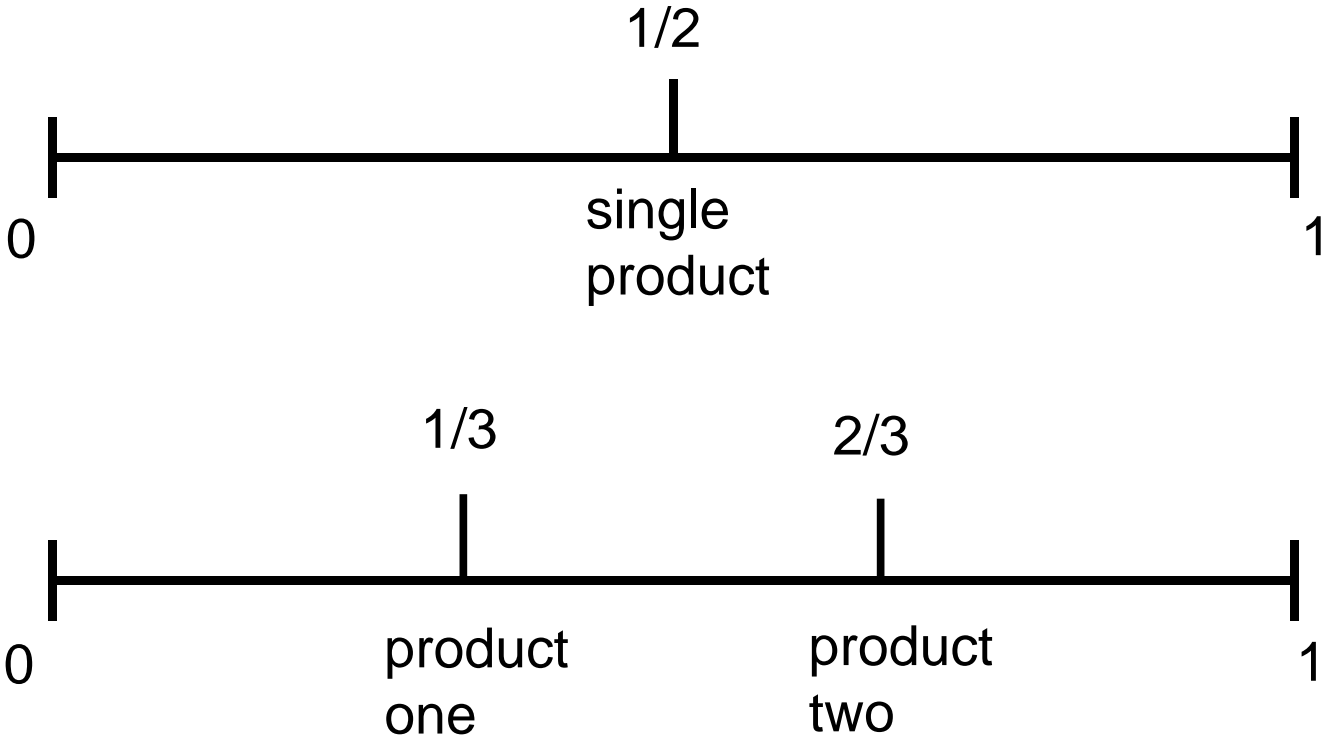


Unotes 8 Figure 3



Unotes 8 Figure 4

average distance to most preferred variety



Unotes 8

Figure 5