

Economics ..internati onal trade questions (ricardian model)



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Ricardian Model Man hours per unit Country Bananas Machines U. S. 8 2

Equador 4 4 U. S. has 3200 workers. Equador has 400 workers. (a) Equador has the absolute in Bananas. This is because the unit labor cost of production of bananas in Equador is 4 man hrs, which is lower than that of U. S. at 8 man hrs per unit.

(b) The unit productivity of labor for each country are shown as under:

Country

Bananas

Machines

U. S.

$$1/8 = 0.125$$

$$1/2 = 0.5$$

Equador

$$1/4 = 0.25$$

$$1/4 = 0.25$$

The relative factor productivity for Bananas in U. S. is $= 0.25/0.5 = 0.5$

The relative factor productivity for Bananas in Equador $= 0.25/0.125 = 2$

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The relative factor productivity in the production of Bananas is higher in Equador, so it enjoys a comparative advantage in the production of Bananas.

(c) Units of Bananas produced by US $= 3200/8 = 400$

Units of Machines produced by US $= 3200/2 = 1600$.

Equador:

Bananas produced $= 400/4 = 100$

Machines produced $= 400/4 = 100$

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The production possibility frontier for US is as follows:

Production possibility frontier for Equador can be shown as:

(d) The relative price of Bananas in the two countries in the absence of trade is:

US = 1 : (8/2) or 1: 4

Equador: 1: (4/4) or 1: 1

(e) The pattern of trade in free trade would be thus: US would import bananas at a price between 4 and 1 unit of machines. Equador would import machines if it can get more than 1 unit of machine in exchange for a unit of banana.

(f) In case of complete specialization Equador would produce only bananas and no machines. It would produce 400 bananas.

(g) A plausible free trade Terms of Trade is 1 unit of banana : 2 unit of machines. In this terms of trade US would be able to get a unit of banana for less than 4 unit of machines and Equador would be able to get 2 units of machines in exchange for 1 unit of banana. Both countries benefit through free trade.

(h) The new consumption possibility frontiers are:

In this figure QQt is the new terms of trade established between the two countries in free trade. QA and QB are the offer curves of US and equador. PQ and QR are the production possibility frontiers of US and Equador respectively.

2.

(a) Under the conditions US has an absolute advantage in Timber and Taiwan in VCRs. This can be seen in the table below in terms of the factor productivity.

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Per unit labor requirement

Country

Timber

VCRs

US

3

8

Taiwan

6

2

(b) The Autarky Price Ratio in terms of one unit of timber is :

US = 1 : 3/8 or 0. 38

Taiwan = 1 : 6/2 or 3

The free trade price ratio can be anywhere between 1 unit timber : (0. 38 to 3) of VCRs.

A plausible free trade price ratio could be 1 unit of timber : 1. 5 unit of VCRs.

The pattern of trade would be: US exports timber and imports VCRs, and Taiwan exports VCRs and imports timber.

The levels of production would be:

US produces $48/3$ or 16 million units of timber.

Taiwan produces $48/2$ or 24 million units of VCRs.

(c) Real wages of workers in Autarky is:

US = ($1/3 = 0. 33$) to ($1/8 = 0. 12$). So it is between 0. 12 to 0. 33.

Taiwan = ($1/6 = 0. 17$) to ($1/2 = 0. 5$). So it is between 0. 17 to 0. 5.

Real wages of workers in free trade is :

US : $(16 \times 1. 5) / 48 = 0. 5$

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Taiwan : $(24 \times 1/1.5)/48 = 0.5$

Both countries have benefited from free trade in the sense that they are getting more value for their exports and the real wages of the factor of production has risen as well.

(d) In case of lower unit labor requirement for timber in US, the world supply of timber would increase. The free trade price ratio would now hover between

$1 : 2/8$ or $1 : 0.25$ and $1 : 3$

Real wages in US would increase in this case while in Taiwan they would remain the same.

References

Ellsworth P. T. & Keith, J. Clark. " The International Economy." 5th ed. 1975.

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