

Economic Sanctions Exercise

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ABSTRACT

This paper covers an in-class exercise in which students participate in an “international trading exercise” eventually involving economic sanctions. Students are divided into ‘buying’ countries and ‘selling’ countries. Buyers and sellers are given valuation cards and earn consumer surplus and profit, respectively. Participants learn that economic sanctions very well may not do much other than make prices somewhat higher (and quantity somewhat lower) than if no sanctions existed. Students learn economic rationale behind this insight.

INTRODUCTION

Students have heard of one nation imposing economic sanctions on another, especially when one citizens and/or members of government of one country finds conduct of another country unacceptable. Often, students believe this is an effective way to get such a country to mend its ways.

I have developed an in-class market exercise in which students trade across nations. In the first round (or set of rounds), there are no trade restrictions. In the next round (or set of rounds), one nation bans sales to another nearby country. Students find that the sanctions do not have a strong impact on the economy of the nation subject to sanctions. Below, I present the instruction sheet given to students.

TRADE AND SANCTIONS

There are four countries to consider: A, B, C, D

“Buyer” countries: A, B

“Producer” countries: C, D

Countries A and C are very close to each other and therefore have no transportation costs (as an approximation). Countries B and D are very close to each other and therefore have no transportation costs (as an approximation).

Countries A and D are far apart, and there will be “transportation” costs of \$1 per unit.

Countries B and C are far apart, and there will be “transportation” costs of \$1 per unit.

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Trade and try to acquire as much “net benefit” as you can. If you are a seller, you may sell to either buyer country or the other seller country. You may also buy from any country that has any for sale and

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you may re-sell to any country. If you are a seller country, you can only receive net benefit from ultimately selling.

If you are a buyer, you may buy from either seller country or the other buyer country. You may also sell to any country that is buying. If you are a buyer, you can receive net benefit from buying (obviously). However, you can also receive net benefit by buying and re-selling.

You may advertise your offers (be they “buy” or “sell” offers) either by writing them on the board, or holding up a paper that states your “price,” or by speaking out loud and trying to find a trading partner that way.

Each slip of paper I give you represents 1 unit of the product to be traded. If you make no deal, you will receive no net benefit. (If you are a producer, you will not incur any cost if you do not make a deal because you will not have to manufacture your unit. However if you do make a deal to sell, you will incur that cost.) A unit, once produced, can be traded multiple times in a given round. However, once a round is over, that unit does not store until the next round. Think of it as a “perishable” item.

Trade will be completely “free” in the first round (i.e., no artificial trade barriers like tariffs, quotas, sanctions, etc.). However, things may change in subsequent rounds!

UNDERLYING DEMAND AND SUPPLY CURVES FOR VALUATION AND COST SLIPS

For the buyers, I hand out valuation slips (that give reservation prices). Each slip represents maximum willingness to pay for a single unit. Each slip is only used once. If a student buys a unit, s/he subtracts the price paid (which is bargained) to obtain the net gain.

For the sellers, I hand out ‘cost’ slips. Each slip represents the seller’s (marginal) cost. If a seller bargains to sell at a certain price, the seller subtracts the cost from the price received (and this will be the seller’s net gain).

I have not always given students the underlying demand and supply equations from which the buyer and seller ‘slips’ are generated, but I will list them here.

$$\text{Demand: } P = 20 - Q$$

$$\text{Supply: } P = 5 + 0.5Q$$

The demand equation applies to each of the two buyer countries. The supply equation applied to each of the two seller countries. Because of the transportation cost for country C to sell to country B (and for D to sell to A), trade usually has not taken place between these countries. In other words, the nations that are close to each other trade (i.e., country C sells to country A and country D sells to country B). The equilibrium price with these two equations is $P^e = \$10$, and $Q^e = 10$ (both in country A and B). In the first round (or set of rounds if two rounds are used with no restrictions on trade), the average price has usually been pretty close to \$10, and the quantity has usually been 10 (or within 1 of 10).

Next, I introduce sanctions. I have told various stories in the past about why country C does not wish to sell to country A (like human rights violations in country A). Students have often laughed and teased

each other (good naturedly) about why they will not trade. However, seller country D has no such convictions and is willing to sell to any country as long as buyers are willing to pay more than their 'costs.'

What typically happens should be expected. The decrease in supply from country C to A tends to increase the price in country A, *ceteris paribus*. However, this will give sellers in country D incentive to sell to country A (even with the transportation cost). However, with the transportation costs, the price will tend to be higher and the quantity traded lower than when we had free trade. Then country C will sell to country B because they refuse to sell to country A. With two seller countries competing to sell in country B, the price will tend to come down and quantity up in that country relative to the case of free trade.

In fact, in the trials I have conducted, the price in country A did increase (from about \$10 to about \$11 and the quantity decreased from about 10 to 9. In country C, the price decreased (from about \$10 to \$9 - \$9.50) and quantity increased (from about 10 to 11).

INSIGHTS FOR STUDENTS

Students get to experience how market forces cause change when we move from free trade to a situation where one country imposes economic sanctions on another. They find that such sanctions may only work to make prices somewhat higher and quantity somewhat lower. In other words, economic sanctions may not have a significant effect on the country that is the target. We discuss the economics behind this as above.

REFERENCES

- Bergstrom, Theodore and John H. Miller (2000), *Experiments with Economic Principles: Microeconomics*, 2nd Edition, Irwin/McGraw-Hill.
- Smith, Vernon L. (1962). "An Experimental Study of Competitive Market Behavior," *Journal of Political Economy*, 70(2), pp. 111-137.