Introductory Macroeconomics

In-Tutorial #9
Week Starting 10th May 2021

Questions.

1. Bill and Scott are both capable of producing beer and soda. Assume the following table describes the number of minutes that it takes for each person to produce each product.

	Beer	Soda
Bill	30	15
Scott	60	30

   (a) What is Bill's opportunity cost for producing beer? Soda? What about Scott's?

   (b) Are there possible gains from trade in this setting? Explain why or why not?

   (c) Moving to international trade, do you think countries are more likely to gain from trading with nations with similar characteristics or by trading with nations that have very different characteristics?

2. One of the important events in world trade in recent months has been the escalation of a trade war between the USA and China. This trade war has increased tariffs in both the USA and in China. For concreteness, let's consider what happens to welfare in the USA economy from the USA imposing tariffs on Chinese goods. Are there any individuals that gain from the imposition of tariffs? If so, identify these individuals and explain why. Are there any individuals that lose from the imposition of tariffs? If so, identify these individuals and explain why. On aggregate, economists advocate that trade is welfare improving. If that is the case, why would politicians such as Trump advocate a policy that damages the economy and why would voters support such a politician?

3. In many developed economies there has been an increase in wage inequality. In the last few decades, workers with a high level of skills have experienced larger increases in wages than workers who are less skilled.

   (a) One explanation for the rise in wage inequality focuses upon the role of international trade and the integration of some large developing economies into the global economy. Suppose that these large developing economies have a comparative advantage in products that require unskilled labour. Explain how this will affect the wage differential between skilled and unskilled workers.

Solutions to In-Tutorial Work.

1. (a) Bill produces a beer in 30 minutes. In that time, he could produce two sodas. Hence, Bill's opportunity cost of one beer is two sodas. Equivalently, the opportunity cost of producing one soda is 0.5 beer for Bill. Scott produces a beer in 60 minutes. In that time, he could produce two sodas. Hence, Scott's opportunity cost of one beer is two sodas. Equivalently, the opportunity cost of producing one soda is 0.5 beer for Scott.

   (b) In this case, the opportunity costs of production for Bill and Scott are exactly the same. The price of beer in terms of sodas can fall into one of the following three categories.

   First, if the price of beer is more than two sodas, they would both self-produce beer as purchasing beer in the market is more costly.

   Second, if the price of beer was less than two sodas, they have two options to attain beer. They can produce sodas and then purchase beers by paying sodas in the market. Alternatively, they can self-produce beer. As they are better off with the first option, they would both produce sodas.

   Third, if the price of beer was equal to their opportunity cost of beer, they are indifferent between self-producing beer and purchasing beer from the market.

   In all three cases, the trade between Bill and Scott does not occur, because both produce beer. Trade can only occur when Bill and Scott are to specialise in different goods.

   (c) This suggests that countries gain from trade by trading with partners who differ from them. This allows them to specialise in goods that their partners are less productive in producing and this allows for greater gains from trade. If countries are identical, then their opportunity cost of production will be similar and it will be difficult to realise gains from trade.

2. The imposition of tariffs is a way of reducing the degree of trade integration. In the lecture we discussed that the welfare of employed workers depends upon the wage that they receive. For a competitive firm that produces good k, the nominal wage rate that they pay for its worker is given by $P_k MPL_k$, where P_k is the price of good k and MPL_k is the marginal product of labour for the firm. Suppose that good k is imported. In this case, tariffs on the imported good will raise the price of good k. This will help workers involved in the production process of good k as they receive higher nominal wages.

   There are also losers as a result of the increase in tariffs. Most notably, some less productive employed workers will lose jobs as the domestic production of good k is replaced by imports. Moreover, the customers who purchase good k tend to lose as a result of the higher prices.

   One way to identify winners and losers formally is through supply and demand analysis in Figure 1. It shows the effect of the imposition of a tariff on an imported good k. Initially, producers and consumers face the world price and consume at q_D and produce at q_S. The volume of imports is $q_D - q_S$. The tariff raises the price of the good and the supply increases to q'_S, while the consumption falls to q'_D. Hence, the volume of imports is now $q'_D - q'_S$. The area $ABCD$ is the gain in producer surplus. The area $CEFG$ is the increase in tariff revenue that goes to the government. Finally, there is the loss in consumer surplus of the area $AHGD$. Aggregating over gains and losses it turns out the overall welfare loss is BCE plus GFH. Therefore, the imposition of tariffs reduces the trade volume and leads to aggregate welfare losses.

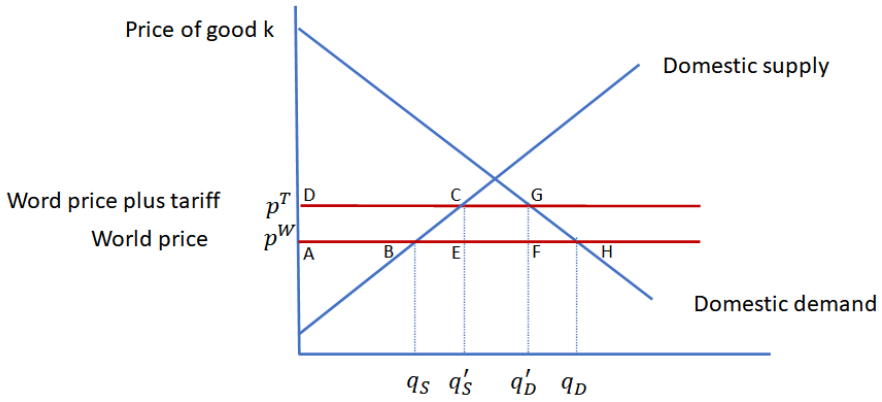

Figure 1: Effect of tariff on welfare

There are a couple of potential explanations for why tariffs are popular among the public and why politicians support tariffs.

(i) One highlights the political economy of the situation. The gains from trade tend to be very dispersed among the whole population. Lower car prices due to trade benefit everyone (at least everyone that purchases a car) by reducing car prices by perhaps $1000s of dollars. However, the costs of trade tend to be very concentrated among a relatively small number of people. Auto workers in the Geelong area may have lost tens of thousands of dollars in lost wages when manufacturing closed in the region. As a result, people hurt by trade may vote for politicians in support of trade restrictions but people who benefit from trade may not change their vote since they view other issues as more important.

(ii) Maybe people are unaware of the economic costs of tariffs due to poor communication by economists.

3. (a) Here, we think of developing economies as having a comparative advantage in the production of goods that require low skill while developed economies have a comparative advantage in the production of goods that require a relatively high skill level. This follows from the observation that individuals in developed economies devote a greater amount of their time to education that we would typically think as of increasing skills.

The direction of trade suggests that an economy exports a good whose international price is higher than its autarky price. This good is what the economy has a comparative advantage of producing. Moreover, an economy imports a good whose international price is lower than its autarky price. This good is what the economy does not have a comparative advantage of producing. So, we can think that developed economies export goods that require a high skill. When trade opens, in developed economies, the price of these goods increases, and so does the nominal wages of high-skilled workers. Conversely, developed countries will import goods that require a low skill. When trade opens, in developed economies, the price of these goods decreases, and so does the nominal wages of low-skilled workers.