International Economics
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Answer key

PROBLEM 1

1.1 True. The firm wants to set quantities for the two markets such that marginal revenues are equal to marginal costs, see figure 6-8 in Krugman and Obstfeld (2009). Marginal revenue in the world market is equal to the price. This in turn determines the quantity sold in the home market: marginal revenue in the home market must equal the world market price. Since the firm has monopoly power in the home market, this means that the price is higher in the home market.

1.2 True. Trade may increase because of lower transaction costs, greater price transparency and lower exchange rate uncertainty. More trade is likely to improve welfare due to the standard efficiency gains.

1.3 False. A quota leads to a lower level of domestic production and a higher prices compared with a tariff. A quota creates more monopoly power than a tariff because imports cannot exceed the quota level. In contrast with a tariff the monopolist cannot raise the price too much because then they will be undercut by imports.

1.4 False. First, there is only weak evidence that "dirty industries" move to countries with lax environmental regulation (so-called pollution havens). Second, it is not clear that negative externalities are associated with pollution havens.

1.5 True. Labor moves from countries where it is abundant to countries where it is scarce. This leads to real wage convergence and higher output as a result, see Figure 7-3 in Krugman and Obstfeld (2009).

1.6 True. Knowledge in a firm is often embodied in a group of individuals. Such knowledge is often more easily transfered to subsidiaries if it takes place within a single firm. Problems associated with vertical integration (i.e., coordination of supply and demand between upstream and downstream firms) may be reduced within a single firm.

1.7 False. Most studies find that outsourcing and skill biased technological change are the main drivers behind increased wage inequality. Trade in final goods cannot be the explanation because i) relatively low trade volumes means low factor content, ii) small changes in relative import prices which is at odds with the Stolper-Samuelson Theorem, and iii) employment changes has taken place within and not between industries.

PROBLEM 2

Consider a closed economy, North, which has two sectors of production, Milk and Shoes. Both goods are produced using two production factors, labor and land, that are fixed in supplies. The production of Milk is relatively land-intensive, and the production of Shoes is relatively labor-intensive. Both sectors use constant returns to scale production technologies, and perfect competition prevails in all markets.

Question 2.1: *Characterize the relationship between factor prices and factor intensities.*

The situation corresponds to that of Krugman and Obstfeld (2009) where Food is replaced by Milk and Cloth is replaced by Shoes. The relationship between factor prices is derived from an isoquant as in Figure 4-4: A higher wage-rental ratio leads to a higher land-labor ratio. This, in turn, leads to a relationship between wage-rental ratios and land-labor ratios as depicted in Figure 4-5.

Question 2.2: *Characterize the relationship between factor prices and goods prices.*

Since production of shoes makes use of relatively little land, a rise in the price of land will have a relatively small impact on the price of shoes. In contrast, since milk production uses relatively more land, a rise in land prices will have a relatively large effect on milk prices. Therefore, there must be a one-to-one relationship between the wage-rental ratio and the price of shoes relative to the price of milk. See Figure 4-6.

Another economy, South, also produces Milk and Shoes using the same production technologies. The only difference between North and South is in their factor endowments. North is relatively labor-abundant and South is relatively land-abundant. Assume now that North and South trade.

Question 2.3: *Explain how goods prices adjust. What good is exported by North and what good is exported by South?*

The situation here corresponds the Krugman and Obstfeld (2009), where Home is replaced by North (they are relatively labor-abundant) and Foreign is replaced by South (they are relatively land-abundant). Because shoe production is relatively intensive in the use of labor, North produces a higher ratio of shoes to milk than South. Put differently, North has a larger relative supply of shoes, so its relative supply curve lies to the right of South's. As illustrated in Figure 4-11 opening up for trade means that the relative price of shoes rises in North and declines in South. This price change means that North will export Shoes and South will export milk.

Question 2.4: *How are workers and landowners in North affected by trade?*

The impact on workers and landowners in North follows from the fact that relative prices change as described above and the Stolper-Samuelson theorem: Owners of a country's abundant factor gain from trade and owners of a country's scarce factor lose. In this case, since North is relatively abundant in labor, workers gain and landowners lose.