International Economics
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Answer key

PROBLEM 1

1.1 *A country gains from trade even if it has higher productivity than its trading partner in all industries.*

True. The Ricardian model states that it is comparative advantage and not absolute advantage that matters. Even if a country has higher productivity in all industries it benefits if it exports the goods that its labor produces relatively efficiently and imports goods that its labor produces relatively inefficiently.

1.2 *The Rybczynski theorem states that an increase in the supply of labor will, holding prices constant, lead to a fall in the output of the land intensive good.*

True. The Rybczynski theorem (or Rybczynski effect) is about the relationship between factor supplies and output in the Hecksher-Ohlin model. With a constant relative price of food and cloth there is a constant wage-rental ratio. From this wage-rental ratio the ratios of land to labor used in the production of cloth and food can be determined (cloth is relatively labor intensive). There is full employment of both factors and this condition determines the allocation of factors between the two sectors and, therefore, output in the two sectors. If there is an increase in the supply of labor then the only way both factors can be fully employed is if less labor and capital is used in the land intensive sector and more labor and capital is used in the labor intensive sector. Thus, output in the land intensive sector falls.

1.3 *The increased skill premium, which is observed in many advanced countries, can almost entirely be attributed to trade in final goods.*

False. There is substantial evidence that skill-biased technological change and offshoring (trade in intermediate inputs) have contributed to the increased skill premium. By contrast less evidence have been found for trade in final goods as the explanation. For the trade in final good explanation to hold one should see inter-industry reallocation of employment, lower import prices and a high trade share, which is at odds with empirical evidence (Feenstra & Hanson (2003)).

1.4 *In a model of reciprocal dumping the foreign and domestic markets may be analysed separately, if they are segmented and marginal costs are increasing in output.*

False. The requirement is a linear cost function (i.e., constant marginal costs). If marginal costs are increasing in output, then higher sales in one market will lead to higher marginal costs and thus affect profit maximization for the other market. The markets will therefore be interdependent and the profit maximization problem is no longer separable.

1.5 *Trade policy formation is better explained by models relying on electoral competition compared to models relying on collective action.*

False. Trade policies usually favour the interest of small groups over the general public, which is at odds with models based on electoral competition such as the median voter model. In contrast, small well organised groups will often be able to overcome the problem of collective action.

1.6 *The formation of a customs union is always improving welfare of the member countries.*

False. A customs union has free trade among its members and they agree on common external tariff rates. Formation of a customs union can reduce welfare of one or more member countries if it leads to trade diversion and not trade creation. The problem of trade diversion occurs if a country joins the customs union and as a result imports a good from a member country instead of a more cost efficient non-member. Consumers pay lower prices but the loss of tariff revenue may dominate this gain.

1.7 *Horizontal foreign direct investments are more likely between similar countries.*

True. Firms can choose to serve foreign markets by exporting or by setting up local production through horizontal foreign direct investment (in which case they become multinationals). If countries are dissimilar in terms of e.g. market size or production costs, then firms will tend to locate in the large or inexpensive market and serve the other market by exporting.

PROBLEM 2
The Monopolistic Competition Model.

Question 2.1: *List the assumptions in the Monopolistic Competition model and discuss the type of trade it aims to explain.*

In the Krugman (1979) monopolistic competition model it is assumed that countries are identical in terms of preferences, technology and factor endowments. Preferences exhibit love of variety, such that utility rises with the number of varieties for a given claim on resources. There is increasing returns to scale in production, which is modelled as fixed production cost in addition to constant marginal costs. Labor is the only production factor. The market structure is characterized by monopolistic competition, which means that there are many firms each producing their own variety, such that they face a downward sloping perceived demand schedule.

The model aims at explaining trade between similar countries, which is in contrast to traditional trade models such as the Ricardian model and the Hecksher Ohlin model, where trade takes place between countries differing in productivity or factor endowments. The type of trade explained is also dubbed intra-industry trade because countries import and export in the same industry.

Question 2.2: *Explain the main results derived in the Monopolistic Competition model and discuss empirical evidence for the model.*

Opening up for trade in the monopolistic competition model allows firms to produce at a larger scale by serving markets from one location. This leads firms to reduce prices which is a gain for consumers. At the same time consumers get access to more varieties, which also increases utility. However, the direction of trade is indeterminate, i.e., the model does determine where each good is produced. Unlike the Hecksher Ohlin model everyone gains from trade since there is only one production factor, labor.

Almost half of all world trade is intra-industry trade between similar countries, which underlines the relevance of the monopolistic competition model. Some studies have quantified the predicted gains from increased product variety. Broda and Weinstein (2006) found that the number of imported products tripled in the U.S. from 1972 to 2001. This represented a welfare gain equal to 2.6% of GDP. Mohler and Seitz (2012) found that Denmark gained 0.72% of GDP due to increased import variety from 1999 to 2008.

Question 2.3: *An extended version of the model allows for firm heterogeneity, such that firms respond differently to trade. What are the main conclusions from this extended*

version of the model?

In the extended model, where firms are different in terms of marginal costs, one can view opening up for international trade as an increase in market size. Increased market size forces worst performing firms (those with highest marginal cost) to shut down and the most productive firms to expand. This reallocation of labor from less to more productive firms is a novel additional gain from international trade. It is also found that the most productive firms export, while firms with medium high productivity/marginal costs produce only for the home market. In other words, the model explains why exporters are larger and more productive, which is a stylized fact.