

## Problem Set 1: International Product Markets

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**Due:** Thu, November 6, before 12:30pm

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### 1 Trade Patterns and Gains from Trade

The *Ricardian* and *Heckscher-Ohlin* theories of international trade stress different aspects of *comparative advantage*. [You may use numeric examples, graphs, or clear verbal arguments for any of your answers.]

1. Discuss prime differences between the *Ricardian* and the *Heckscher-Ohlin* theory of trade. State their main predictions for the pattern of trade.
2. *Ricardian trade*. Mexico and California grow avocados and produce motorcycles. Mexico's workers can produce 300,000 motorcycles and grow 15 million avocados, while California's workers can produce 1 million motorcycles and grow 20 million avocados. In your argument, start from a point of autarky and open markets to international trade. What are Mexico's and California's opportunity costs of motorcycle manufacturing in terms of coffee? What is the pattern of trade? If the world price is 1 motorcycle for 30 coffee, how many motorcycles will Mexico Mexico make, and how many motorcycles will California make? In your analysis, demonstrate that there are gains from trade for both California and Mexico.
3. *Heckscher-Ohlin trade*. What will happen to real wages for avocado growers and motorcycle-making workers in Mexico and California under the assumption that avocado growing is low-skill intensive, motorcycle manufacturing is high-skill intensive, Mexico is low-skill labor-abundant and California is high-skill labor-abundant?

### 2 Trade and Inequality

International trade affects the distribution of incomes within trading countries. [You may use numeric examples, graphs, or clear verbal arguments for any of your answers.]

1. Explain the difference between measures of poverty and income inequality. Can poverty decline in the presence of increasing income inequality?
2. South America is the continent with arguably the most pronounced swings in inequality over the past two decades. By many measures, *income inequality* in Latin America has become more pronounced over the 1990s but less extreme over the 2000s. Discuss two potential explanations [of your choice] why international trade in final goods may have been a cause.

Offer two alternative explanations [of your choice] why international trade may not have been the cause.

3. Offer an explanation why foreign direct investment and trade in intermediate goods may overturn the rationale from trade in final goods.

### **3 Offshoring, Intra-firm Trade and the Boundary of the Firm**

Discuss three reasons why a firm wishing to enter a new market abroad would want to own multinational assets rather than engage in a contractual relationship.

Explain how offshoring of intermediate production stages with different relative skill requirements can simultaneously raise demand for relatively more skilled workers in the offshoring and the inshoring location.

### **4 Trade in Primary Goods**

Trade in primary commodities and agricultural merchandize poses special challenges to an exporting country. Discuss three reasons [of your choice] why world markets for these commodities are different from other markets. For the three causes you discuss, offer economic policies that could alleviate or remove the challenges.

### **5 Trade Interventions**

Trade interventions can restrict or promote trade.

1. Suppose the home economy is large in at least some export and some import markets. Explain why trade restrictions on the export side or the import side will improve a large country's terms of trade. Why do we not observe export tariffs as frequently as import tariffs?
2. In multilateral trade negotiations, it is important to compute the restrictiveness of quantitative non-tariff measures such as quotas in terms of their ad-valorem tariff equivalents. Explain how such as number can be computed using a partial-equilibrium approach.
3. Explain why an export subsidy worsens a country's terms of trade. Under what conditions may export promotion, such as East Asian economies used to pursue it, be preferable to import protection, such as other developing economies used to pursue it under Import Substitution Industrialization?

### **6 External Economies**

Give two examples of sources for external economies of scale. [You may try to avoid examples from class; as is generally the case, thinking of own examples helps solidify ideas.]

Brazil has a large domestic consumer market and wants to launch a micro-processor chip industry. No entry occurs although average Brazilian production costs would be lower than anywhere else in the world at any given scale. The Brazilian government hires you as a consultant. Explain why the Brazilian market is empty. What policy options can you offer the Brazilian government? What are their advantages and disadvantages? For how long should the policies remain in place? [You may use numeric examples, graphs, or clear verbal arguments for your answers.]

## 7 Growth and its Effects on Trade

Given differences in per-capita incomes, trade may not suffice to bridge the gap in consumption levels between unequal regions. Consider Mexico and California. Mexico has a lower per-capita income than California. [You may use numeric examples, graphs, or clear verbal arguments for any of your answers.]

1. Explain how Mexico could attempt to bridge the consumption gap that remains to California.
2. How do the terms of trade respond when Mexico increases its labor productivity in the export sector? Will it still reap gains from trade?
3. The possibility of “immiserizing growth” causes concern in Mexico. Explain how “immiserizing growth” may come about. Will Mexico still reap gains from trade under “immiserizing growth”?

## 8 Trade and its Potential Effects on Growth

State three main sources of growth. Which of the three is arguably the most lasting source?

There are several mechanisms by which trade may affect productivity change. [You may use numeric examples, graphs, or clear verbal arguments for any of your answers.]

1. Suppose there are external economies of scale, driven by free entry into industrial clusters. Explain how comparative advantage changes over time as entrants join a cluster.
2. Suppose there is learning by doing in a model with multiple goods and productivity differences across countries. Explain how the pattern of comparative advantage changes over time as each trading partner learns by doing.
3. Define the Balassa (1965) measure of comparative advantage. Applying it to Latin American economies, does there appear to be lock-in of comparative advantage?
4. What is the impact of adjustment costs and temporarily idle production factors after trade reform on growth?

## **9 Trade and Incentives for Efficiency and Innovation**

State the principal-agent problem when there is uncertainty over both a project's return and an agent's effort. In which ways can foreign trade affect competition, product-market shares and a project's return? How can foreign trade therefore alter incentives for efficiency and innovation?