Chapter 2
World Trade: An Overview

1. ■ Chapter Organization

Who Trades with Whom?

  Size Matters: The Gravity Model.

  Using the Gravity Model: Looking for Anomalies.

  Impediments to Trade: Distance, Barriers, and Borders.

The Changing Pattern of World Trade.

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  What Do We Trade?

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Do Old Rules Still Apply?

Summary

1. ■ Chapter Overview

Before entering into a series of theoretical models that explain why countries trade across borders and the benefits of this trade (Chapters 3–12), Chapter 2 considers the pattern of world trade that we observe today. The core idea of the chapter is the empirical model known as the gravity model. The gravity model is based on the observations that (1) countries tend to trade with nearby economies and (2) trade is proportional to country size. The model is called the *gravity model,* as it is similar in form to the physics equation that describes the pull of one body on another as proportional to their size and distance.

The basic form of the gravity equation is *Tij* = *A* × *Yi* × *Yj*/*Dij*. The logic supporting this equation is that large countries have large incomes to spend on imports and produce a large quantity of goods to sell as exports. This means that the larger that either trade partner is, the larger the volume of trade between them. At the same time, the distance between two trade partners can substitute for the transport costs that they face as well as proxy for more intangible aspects of a trading relationship such as the ease of contact for firms. This model can be used to estimate the predicted trade between two countries and look for anomalies in trade patterns. The text shows an example where the gravity model can be used to demonstrate the importance of national borders in determining trade flows. According to many estimates, the border between the United States and Canada has the impact on trade equivalent to roughly 1,500–2,500 miles of distance. Other factors such as tariffs, trade agreements, and common language can all affect trade and can be incorporated into the gravity model.

The chapter also considers the way trade has evolved over time. Although people often feel that globalization in the modern era is unprecedented, in fact, we are in the midst of the second great wave of globalization. From the end of the 19th century to World War I, the economies of different countries were quite connected, with trade as a share of GDP higher in 1910 than in 1960. Only recently have trade levels surpassed pre–World War I trade. The nature of trade has changed, though. The majority of trade is in manufactured goods with agriculture and mineral products making up around 25% of world trade. Even developing countries now primarily export manufactures. A century ago, more trade was in primary commodities as nations tended to trade for things that literally could not be grown or found at home. Today, the motivations for trade are varied, and the products we trade are increasingly diverse. Despite increased complexity in modern international trade, the fundamental principles explaining trade at the dawn of the global era still apply today. The chapter concludes by focusing on one particular expansion of what is “tradable”—the increase in services trade. Modern information technology has expanded greatly what can be traded as the person staffing a call center, doing your accounting, or reading your X-ray can literally be halfway around the world. Although service outsourcing is still relatively rare, the potential for a large increase in service outsourcing is an important part of how trade will evolve in the coming decades. The next few chapters will explain the theory of why nations trade.

1. ■ Answers to Textbook Problems

1. According to the gravity model, trade exchanges are positively affected by the size of the trading economies and are negatively affected by their distance. Other conditions being the same, the two countries should trade more with their neighbors than with the countries far away from them. When trade is either much more or less than a gravity model predicts, economists search for the explanation, such as role of transport costs and geography in determining the volume of trade.

2. According to the gravity model, with other things being equal, the value of trade between any two countries is proportional to the product of the two countries’ GDPs and diminishes with the distance between the two countries. In the given situation, Ireland’s trade with the United States lies in the cultural affinities because the same language is spoken and there are a large number of Irish immigrants in the United States. Ireland also hosts many US-based corporations. Traditionally, Belgium has been the point of entry to much of northwestern Europe’s trade with the United States; also Antwerp in Belgium ranks as the second most important port in Europe, as measured by the tonnage handled. Thus, the large trade suggests that transport costs and geography are important factors in explaining Belgium’s volume of trade with the United States.

3. No, if every country’s GDP were to double, world trade would not quadruple. Consider a simple example with only two countries: A and B. Let country A have a GDP of $6 trillion and B have a GDP of $4 trillion. Furthermore, the share of world spending on each country’s production is proportional to each country’s share of world GDP (stated differently, the exponents on GDP in Equation 2-2, *a* and *b,* are both equal to 1). Thus, our example is characterized by the table below:

|  |  |  |
| --- | --- | --- |
| **Country** | **GDP** | **Share of World Spending** |
| A | $6 trillion | 60% |
| B | $4 trillion | 40% |

 Now let us compute world trade flows in this example. Country A has an income of $6 trillion and spends 40% of that income on country B’s production (spending 60% on their own production). Thus, exports from country B to country A are equal to $6 trillion × 40% = $2.4 trillion. Country B has an income of $4 trillion and spends 60% of this on country A’s production. Thus, exports from country A to country B are equal to $4 trillion × 60% = $2.4 trillion. Total world trade in this simple model is $2.4 + $2.4 = $4.8 trillion.

What happens if we double GDP in both countries? Now GDP in country A is $12 trillion, and GDP in country B is $8 trillion. However, the share of world income (and spending) in each country has not changed. Thus, country A will still spend 40% of its income on country B products, and country B will still spend 60% of its income on country A products. Exports from country B to country A are equal to $12 trillion × 40% = $4.8 trillion. Exports from country A to country B are $8 trillion × 60% = $4.8 trillion. Total trade is now equal to $4.8 + $4.8 = $9.6 trillion. Looking at trade before and after the doubling of GDP, we see that total trade actually doubled, not quadrupled.

4. The gravity model of trade states that the value of trade between two countries is proportional to each country’s GDP. As GDP in East Asian countries has increased relative to other countries, we should expect trade flows involving East Asian countries to increase. The table below gives real GDP (adjusted for inflation) for several regions in 1980, 2000, and 2019 from the World Bank

|  |  |  |  |
| --- | --- | --- | --- |
|  | 1980 | 2000 | 2019 |
| East Asia | $4.6 trillion (16.5%) | $11.0 trillion (22.0%) | $25.0 trillion (29.4%) |
| Europe and C. Asia | $11.6 trillion (41.6%) | $17.5 trillion (35.0%) | $24.5 trillion (28.9%) |
| Latin America | $2.5 trillion (8.9%) | $3.9 trillion (7.8%) | $6.2 trillion (7.3%) |
| North America | $7.3 trillion (26.1%) | $13.8 trillion (27.7%) | $20.2 trillion (23.9%) |

 East Asia’s share of world GDP has increased from 16.5% in 1980 to 29.4% in 2019. Over this same period, Europe, Latin America, and North America’s shares of world GDP have declined. The gravity model of trade would thus predict that not only will we observe an increase in intra East Asian trade, but East Asian have also become larger trade partners for non-East Asian countries.

 Intuitively, as countries become wealthier and the consumption demands of their populations rise, imports into these countries will increase. Thus, while many of these countries used to focus their exports to other rich nations, over time they became part of the rich nation club and thus were targets for one another’s exports. For example, when South Korea and Taiwan were both small, the product of their GDPs was quite small, meaning that despite their proximity, there was little trade between them. Now that they have both grown considerably, their GDPs predict a considerable amount of trade between them.

5. As the chapter discusses, a century ago much of world trade was in commodities, whose production is largely determined by climate or geography. The United Kingdom imported goods that it could not make itself such as cotton or rubber from countries in the Western Hemisphere or Asia. As the United Kingdom’s climate and natural resource endowments were fairly similar to those of the rest of Europe, it had less of a need to import from other European countries since they were not producing the commodities it wanted to import from Asia or the Americas.

 The Industrial Revolution saw significant growth in technology and the diversity of goods being produced. Trade shifted away from primarily being in commodities and toward more manufactured goods. These manufactured goods were less dependent on geographic factors and more affected by income and skill levels in the countries they were produced in. More recently, there has been increased trade in services, which again are less influenced by geography and more by skill levels and local institutions. The shift toward more trade with other European countries reflects the shifting composition of goods being traded away from commodities whose production was determined by geographic factors and toward manufactures and services that are more influenced by labor and capital characteristics in a country. This has also been influenced by Britain’s (until recently!) membership in the European Union, a free trade region in Europe.