Short Essays

on implications of Krugman's and Gravity models of trade

1. **Intraindustry trade.**

The most frequent form of trade, intraindustry trade is a type of trade that occurs within the same industry, mostly between the similar countries, especially the advanced ones. It can be measured by the index where the importance of intraindustry trade is calculated by taking the share of bilateral trade flows (minimum of imports and exports out of the average of both) within the same industry, even though such index does not distinguish final and intermediate goods. For instance, when imports and exports in the same industry between two countries are equal, the value of index is one, whereas, on the contrary, if there is only interindustry trade, then the calculated value is zero.

Traditional trade models, such as Ricardian and Heckscher-Ohlin models, fail to explain the nature of intraindustry trade. The main reason for that is these classical and neoclassical models are based on the assumption of comparative advantage as the only reason for trade. The differences between countries would matter according to these models, not similarities. For example, either differences in technologies – productivities as in Ricardo's model or differences in factor endowments as in Heckscher-Ohlin model played a crucial role in the trade between particular countries, according to them. Moreover, trade between similar countries is also meaningless, as it is stated in the traditional models. Because similar countries are more or less identical in terms technologies, capital endowments and tastes. Therefore, traditional models do not predict the intraindustry trade.

According to Paul Krugman's New trade theory, the main reasons for the existence of intraindustry trade are consumers' love of varieties and internal economies of scale. The primary reason for intraindustry trade is a tendency of people to consume many varieties of the same goods, more ubiquitous with the progress of technology and globalization around the world. This makes firm a monopolist in its own variety, forming monopolistically competitive markets altogether. In addition, as it is stated in Krugman's model, there are internal economies of scale, where marginal cost is decreasing for each additional unit produced. This together with some market power may lead to increasing returns to scale that attracts potential firms to trade within the same industry. Advanced economies, such as US, EU and Japan, engage more in intraindustry trade because their degree of technology and globalization is higher. Consequently, such favourable conditions describe the nature of intraindustry trade.

2. Differences of trade conditions in Canada and Australia.

It is important to analyze the trade patterns of two similar mainly English-speaking countries Australia and Canada to see the differences. Commonwealth of Australia is an English-speaking country with an area of 7,692,024 square kilometres and a population of 24,753 million by 2016.[1] Its GDP in million current US dollars is 1,258,978$ and Australia's trade as a percentage of GDP is 20.2%.[2] On the other hand, Canada is mostly an English-speaking country (together with French as official language) with an area of 9,984,670 square kilometres and by 2016 with a population of 35.152 million. The GDP of Canada in million current US dollars is 1,529,224$ and its trade as a percentage of GDP is 32.3%. To contrast them, Canada's population is 42% greater than the Australia's and GDP of Canada is approximately 22% greater. Australia's share in world total exports and total imports are 1.19% and 1.21%, whereas Canada's are 2.45% and 2.57%, all respectively. Thus, Canada's world share of trade is more than twice as large as Australia's. The reason for that can be explained by the Gravity model of international trade.

According to Gravity model, whose main equation is among the most robust empirical patterns in economic theory, bilateral trade flows (X_{ij}) are proportional with the size of trade countries (I_i and I_j) and inversely proportional with the distance (D_{ij}) between them. An equivalent of size of a country can be either population or GDP. Hence, one of the reasons for Canada to have more trade is that its population and GDP are greater than those of Australia. Distance between two countries in Gravity model represents all in one: transportation costs, policy-induced costs for non-union members, language and culture barriers. Thus, the greater the distance the more transportation costs, the less probability to be in some union with privileged policy-induced costs and the more different the language and culture that can be observed. Canada is located in a continent with several other countries, such as US and Mexico, while Australia is a country – continent. Being on the same part of land allows people to use cheap transportation in order to trade, such as cars and trains; that is not the case in Australia. There are seas and oceans between Australia and its neighbours. Moreover, the nearest neighbour of Canada is USA which is large and developed English-speaking country, however there few English-speaking countries around Australia. Even if there are some, their sizes are very small. This is another barrier. Therefore, all these factors are the reason for Australia to have less trade than Canada.

References.

1. Economic models: Ricardo and Heckscher-Ohlin model, Krugman's and Gravity models.
2. The site www.wikipedia.org was used for determining countries' population and area statistics.
3. Official site of the World Trade Organization - www.wto.org. Trade profiles of Australia and Canada were used for various statistical data.

---

[1] These and consequent population with area statistics are from Wikipedia.
[2] This and all consequent economic statistics are from the official site of WTO.