Assignment 2

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1. **Theoretical part**

   (a) Consider the Krugman model version that we studied in class whenever we assume a CES utility function.
      i. When we have a country trading with an identical trading economy, in particularly, $L = L^*$, what are the level of exports relative to output?
      ii. Determine what is the impact of σon the equilibrium number of varieties? What about on the equilibrium price per variety? What about on welfare? Provide some intuition.
      iii. Suppose now that we add a trading partner to the home economy that is identical in every dimension except in size, that is, now $L^* > L$. Recompute the equilibrium of such world economy. What are now the level of exports relative to output?

2. **Data part**

   (a) **(Intra-industry trade)** In this exercise we explore what does Mexico import and export vis-à-vis the US accross sectors. We will use the same dataset from assignment 1. To start, you should go to the World Integrated Trade Solutions (WITS) webpage[1] and create your account (username and password). Once you login, under 'Advanced Query' select 'Trade Data (UN Comtrade)'. Fill out 'Query Name', 'Query Description', choose 'Comtrade' as Data Source and then press 'Proceed'. On the next page do the following: (1) for Reporters select Mexico; (2) under Products choose SITC Revision 3 as the 'Nomenclature', and then from 'Clusters' choose ALL3 – Group (3-digit); (3) for Partners choose United States; (4) for Years choose 1990-2010; (5) for Trade Flows choose Exports and Imports. When you download the data you will have the option to select a file format (excel or csv is best), and also an option to add more columns. You should add 'Product Description' to Selected Columns. Then Download the data.
      i. The Grubel-Lloyd index is a measure on how important is intra-industry trade between two countries. It is defined as:

$$Index = 1 - \frac{1}{N}\sum_{i=1}\frac{|X_i - M_i|}{(X_i + M_i)}$$

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[1]Which can be found on https://wits.worldbank.org/WITS/

where X are exports, M imports, i is the industry and N is the number of sectors. Construct a time series of the index between 1990-2010 and plot your results. What can you infer on the pattern of trade?

ii. Repeat the previous question by modifying your querry to include instead in 'Clusters', ALL5 – Subsidiary Heading (5-digit). How does your answer to the previous question changes? Why do you think the results are different?