# Trade Replication Assignment 2

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## 1 Explanations of Judgment Calls

For this replication, my focus was to perform the econometric estimations efficiently and effectively. As such, I narrowed down the number of countries and sectors I was working with down to 13 countries (Australia, Canada, Czech, Finland, France, Germany, Hungary, Japan, Korea, New Zealand, Slovenia, the United Kingdom, and the United States), and three sectors (Agriculture, Mining, and Manufacturing). Although I initially have more sectors in the datasets, I only use three in actual application. For the sake of data availability, I use annual data from 1990 to 2023. For the gravity data, I utilize distance and distance squared as my instruments, again, to focus more on the computational component of the assignment. Given our selected sectors and countries, we have replicated an equivalent version of the upper panel of table 3. We exclude column 8 (adj. TFP) from the origination paper as it requires capital, which we have excluded in our attempt, using labor as the only factor of production. Our data was collected from the OECD STAN database, OECD GDP database, IMF ITG, U.S. Customs data, the World Bank World Development Indicators, and Soderbery (2018).

Based on my understanding, there are two methods to attain elasticity data. Method 1: using the paper's method of using the theoretical model of equation (18) and its empirical counterparts (22) and (30) to compute the elasticities as parameters of interest in the regressions. We attempt the first method in the replication_2_final_version_1.do file. Results are in table 1. Method 2: Retrieve already computed elasticities from another author (Anson Soderbery, 2018). We attempt this method in replication_2_final_version_2.do. Results are in table 2. While results are different across the two methods, it would be interesting in the future to further refine the code to make the computations not only more efficient, but consistent as well.

Table 1: Dependent variables – industry shares in columns (1) to (3)

| | **Independent Variables** | (1) Agriculture | (2) Mining | (3) Manufacturing |
|---|---|---|---|---|
| Log of relative export variety in | Agriculture | **0.057**\*\*\* | 0.015 | -0.072 |
| | | (0.019) | (0.024) | (0.053) |
| | Mining | 0.015 | **0.025** | 0.061 |
| | | (0.024) | (0.052) | (0.089) |
| | Manufacturing | -0.081\*\* | -0.053 | **0.038** |
| | | (0.037) | (0.062) | (0.115) |
| | Year fixed-effects | Yes | Yes | Yes |
| | Country fixed-effects | | | |
| | $R^2$ | 0.3621 | 0.4384 | 0.3203 |

*Note:* Standard errors in parentheses.
\* $p < 0.10$, \*\* $p < 0.05$, \*\*\* $p < 0.01$.

Table 2: Dependent variables – industry shares in columns (1) to (3) using Soderbery elasticities

| **Independent Variables** | | (1) Agriculture | (2) Mining | (3) Manufacturing |
|---|---|---|---|---|
| Log of relative export variety in | Agriculture | **0.028** | -0.079 | -0.089*** |
| | | (0.077) | (0.052) | (0.033) |
| | Mining | 0.647 | **-0.206** | 0.176 |
| | | (0.393) | (0.265) | (0.171) |
| | Manufacturing | -0.674 | 0.285 | **-0.087** |
| | | (0.433) | (0.291) | (0.188) |
| | Year fixed-effects | Yes | Yes | Yes |
| | Country fixed-effects | | | |
| | $R^2$ | 0.7647 | 0.2335 | 0.2768 |

*Note:* Standard errors in parentheses.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

## 2  Citations

Soderbery, Anson, "Trade Elasticities, Heterogeneity, and Optimal Tariffs," Journal of International Economics, 114, September 2018: pp 44-62.