The growing fragmentation of supply chains across countries have changed the way nations engage in international trade. Conventionally, studies have, for example, used data on exports to measure trade flows; however, the use of this type of data imposes many assumptions that might misrepresent the real world. For instance, the assumption that the supply chain of a product is confined in only the domestic country does not take into consideration the increasing number of foreign inputs needed to produce a final good. In this dissertation, I use the World Input-Output Database (WIOD), since this dataset allows one to track and decompose the so-called global value chain (GVC) of a product.

The first essay uses the WIOD to analyze the degree of competitiveness and integration of the manufacturing sector of Canada, Mexico, and the U.S.
(North American countries – NAC) from 1995 to 2007. Competitiveness is the capacity of a country to increase its share of jobs and income, in this case, measured by GVC income and GVC jobs. Greater integration with a region is defined as experiencing a growing rate of GVC income and GVC jobs from that specific region to meet domestic final demand of manufactured goods. I answer three main questions: (1) did the NAC region lose global competitiveness in the manufacturing sector? This is ambiguous, since the manufacturing sector of NAC experienced a decrease in the share of GVC jobs, from 7.11% in 1995 to 5.79% in 2007. However, the share of labor income associated with those jobs increased. (2) Was the NAC region successful at integrating with the ROW? Yes, the NAC have become more integrated with the ROW. The share of GVC jobs that the ROW contributed to the NAC manufacturing sector increased from 18.14% in 1995 to 29.66% in 2007; while the share of GVC labor income increased from 7.84% in 1995 to 9.60% in 2007. (3) Was the NAC region successful at integrating with the region itself? No, the NAC region has become less integrated with the NAC region itself.

The second essay uses the WIOD to derive the exchange rate pass-through (ERPT) of the manufacturing sector of NAC for the years 1995 to 2009. ERPT is defined as the percentage change in export prices that is associated with a percentage change in the nominal exchange rate. I am able to derive a measure that improves the estimates of the ERPT. In addition, I derive improved measures of marginal cost, product differentiation, and import share. Using a variance-weighted least-squares regression, I find that product differentiation and marginal cost have a positive and significant impact on ERPT, while the import share has a negative effect on the degree of ERPT. When the import share is higher, however, the export prices of manufactured goods in NACs do not adjust by as much when there is exchange rate movement.

The third essay uses the WIOD to derive a measure of vertical specialization (VS). VS measures the foreign value-added share in the output value of final manufacturing goods in a country. I use a dynamic ordinary least square (DOLS) model to examine the effect of vertical specialization, exchange rate, and exchange rate volatility on bilateral trade flows between the United States and Canada and Mexico for the years 1995 to 2007. DOLS controls for the endogeneity between the dependent variable and vertical specialization. I find that the vertical specialization has a positive effect on trade flows when non-linearities are taken into consideration. This result reflects that the fragmentation of supply chain positively impacts international trade of countries.