Tracing Chinese Value-Added in the US-Mexico Trade: A Global Input-Output Analysis, 2000-2023

Topic: Input-Output Analysis: Trade and Global Value Chains policies (8)
Author: Rodrigo Morales-LÃ³pez
Co-Authors: Brenda Murillo-Villanueva

The primary objective of this research is to evaluate the evolution and characteristics of the insertion of Chinese value-added into the US-Mexico trade from 2000 to 2023. Taking 2017 as a critical inflection point for the analysis due to the onset of the trade war between the United States and China, the study addresses five specific aspects: a) which country (the US or Mexico) incorporates higher Chinese value added in the US-Mexico trade, b) the degree of integration of Chinese value added in this trade relationship, c) the final market of absorption of the Chinese value added embodied in the US-Mexico trade, d) the sectoral origin and sophistication of the Chinese value added embodied in the US-Mexico trade, and e) the overall relevance of this value added in the US-Mexico trade for the Chinese economy.

To address these aspects, this study employs a global input-output model. Specifically, it applies the export decomposition methodology proposed by Borin and Mancini (2023). This analytical framework allows for the decomposition of gross exports into their value-added components, while consistently isolating domestic and foreign double-counting terms. By applying this method, it is possible to facilitate a detailed examination of trade flows from two distinct angles: the exporting-sector perspective, which addresses the first three aspects (a, b, and c) mentioned above; and the origin-sector perspective, which resolves the remaining two (d and e).

The empirical analysis relies on the global input-output tables from the Asian Development Bank (ADB). The study covers the year 2000 and an annual series from 2007 to 2023. A crucial feature of this dataset is that the information is available in constant 2010 prices, allowing the analysis to isolate the effects of price changes over the study period. Furthermore, the total output is disaggregated into 35 economic sectors, which for this study are grouped into four main categories: primary sector, resource-based manufacturing, technology-based manufacturing, and services.

The novelty of this research lies in providing updated empirical evidence on trade triangulation among China, Mexico, and the US, specifically in the context of the US's protectionist policies implemented since 2017. While previous literature has primarily focused on the exporting sector perspective to assess the degree of penetration of Chinese value-added, this paper bridges the gap by also incorporating the origin sector perspective to evaluate the sophistication of the value-added and its relevance to the Chinese economy. Furthermore, unlike earlier studies that often relied on aggregated manufacturing data and used current prices, which fail to isolate real structural changes from simple price fluctuations, this research uses constant 2010 prices, disaggregates the data to reveal internal sectoral dynamics, and extends the analysis through 2023.

The results reveal that US protectionist policies did not substantially reverse the insertion of Chinese value added. Instead, China's structural presence in North American supply chains remains firm, with Mexico consolidating as the primary intermediary, ultimately driven by US consumption. Finally, the study highlights a recent sectoral adjustment: a deceleration in the previously rapid growth of manufacturing based on technology, which has been compensated by a growing participation of manufactures based on natural resources.