Decomposing the effective rate of protection in Brazil between 2005 and 2023: trade policy or technical change effects?

Topic:
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The primary objective of this study is to comprehensively analyze the evolution of effective protection for Brazilian tradable goods over the years 2005, 2008, 2014, 2021, and 2023. This analysis involves the estimation of the effective tariff and a structural decomposition of it into its main components: nominal import tariffs, domestic inputs, and imported inputs in order to distinguish trade policy and technical change effects.

As conceptualized by Corden (1971), effective protection measures the protection applied to final goods, discounting the applied tariffs on inputs weighted by their significance in the final good's value (technical coefficients of the input-output model). This study employs a partial equilibrium analysis, utilizing information on the productive structure and considering changes in domestic value added in comparison to a counterfactual scenario of a free market. In fact, the Effective Protection of an Activity (EPA) is defined as the disparity between observed added value and the hypothetical added value in a tariff-free scenario for both the activity and its inputs. This difference is presented as the percentage variation in protected domestic value-added, influenced by tariffs on the final good and imported inputs.

The proposed decomposition categorizes effective protection into three components: the impact of changes in nominal tariffs on imported goods, domestic inputs, and imported inputs. Given that tariffs affect the direct import of the product and its inputs in national production chains, a specialized treatment is necessary. The Bennet method, suggested by de Boer and Rodrigues (2020), is employed for this purpose.

Calculation of EPA requires two essential pieces of information: the nominal tariff protection structure provided by the Secretariat of Foreign Trade (SECEX) of the Brazilian Ministry of Development, Industry, and Commerce and the production structure obtained from national Input-Output Tables (IOT). As official MIPs are released by the Brazilian Institute of Geography and Statistics (IBGE) at five-year intervals ending in zero and five, this study uses IOT estimates by Alves-Passoni and Freitas (2020) for non-corresponding years.

The novelty of this study lies in its methodology, which unravels the changes in effective protection. Unlike previous studies that calculate effective protection without identifying the key elements explaining the change, this research aims to fill this gap.

Preliminary findings reveal a decline in effective protective tariffs over time, primarily attributable to nominal tariffs. However, domestic and imported technical coefficient changes exhibit opposite trends, generally contributing positively to increased effective protection. Notably, despite imported inputs constituting 30% of total inputs in the Brazilian economy, they play an equal or greater role in decreasing effective protection compared to domestic inputs. This may be attributed to an increase in the relative price of imported inputs in the Brazilian production process and an augmented dependence on these inputs.