Structural Decomposition Analysis of Changes in Effective Protection for Brazilian Tradable Goods (2005-2023)

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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 a structural decomposition of nominal import tariffs, domestic inputs, and imported inputs.

Effective protection, as conceptualized by Corden (1971), is a measure of the protection afforded to final goods, accounting for the applied tariffs on inputs and 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.

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 both 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, changes in domestic and imported technical coefficients 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 both an increase in the relative price of imported inputs in the Brazilian production process and an augmented dependence on these inputs.