Welfare Balanced International Trade Agreements

Jorge P. Zubelli (IMPA)

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Abstract

We consider a classic international trade model consisting of a strategic game in the tariffs of the governments. This is modeled as a two-stage game where at the first stage governments of each country use their welfare functions to choose their tariffs either (i) competitively (Nash equilibrium) or (ii) cooperatively (social optimum). In the second stage, firms choose competitively (Nash) their home and export quantities.

We compare the competitive (Nash) tariffs with the cooperative (social) tariffs and we classify the game type according to the coincidence or not of these equilibria as a prisoner's dilemma (when the competitive outcome is dominated by the social) or a lose-win dilemma (an asymmetrical situation when only one of the countries is damaged in terms of welfare in the social outcome and the other is benefited).

The lack of coincidence of the Nash and social tariffs for the welfare of the governments is a main difficulty in international trade that can be partially dealt with the use of trade agreements that impose the social tariffs and rule the distribution of the corresponding welfare gain among the two countries. We consider a welfare balanced trade agreement that has the feature of maintaining the Nash welfare shares of the two countries when the social tariffs are enforced.

We analyze the gains obtained by the countries by using such a trade agreement as well as some the changes in the shares at the level of other relevant quantities such as profits, consumer surplus, custom revenue and total output of the countries and the possible external factors associated to changes in these quantities.

We do a thorough description of the outcomes of the game and the consequences of the trade agreement. We conclude that even in the context of a simple classic model, the enforcing of a trade agreement may be a difficult issue due to some of the external factors that might arise.

This is joint work with Filipe Martins and Alberto A. Pinto (U. Porto).