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The revival of regional trade arrangements: a GE evaluation of the impact on small countries☆

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Abstract

In this paper we analyse the implications of various potential regional trade arrangements on the globe for small, medium, and large countries using a general equilibrium multi-region model of world trade. We show that the effects of regional trade arrangements on member and non-member countries are different for different equilibrium concept and the nature of agreements. In a traditional competitive equilibrium framework the welfare effects are small and non-member nations lose marginally due to a trade diversion. In a non-cooperative Nash equilibrium framework small non-member nations are worse affected. Since the larger regions can bring the terms of trade in their favor by retaliation, and hence could gain from retaliation, the growth of regional trade arrangements is a great cause of concern for the smaller regions. This concern becomes stronger if these trade arrangements are customs unions (CU). This makes small and medium size nations seeking trading arrangement with larger nations as a safe heaven strategy.

JEL classification: D5; F0; F1

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☆ The views expressed in this paper are those of the authors and do not necessarily reflect the opinions of the institutions with which the author is affiliated.

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1. Introduction

In recent years there has been an outburst of literature on the regional trade arrangements using general equilibrium models. Most of these modeling exercises display simulation results of various trade arrangements on the globe from a static competitive general equilibrium analysis and indicate very small effects from trade integration both on the member nations' and non-member nations' trade and welfare. The reason is that in most of these countries trade barriers are already at a low level due to unilateral, regional or multilateral under the GATT (WTO) tariff liberalizations that had taken place in the eighties and nineties. Even though the estimated effects of a trade integration on a non-member nation from these model simulations are very small, there has been widespread and growing concerns among the developing nations about the growth of regionalism. Why is this growing concern among small and medium size countries? The kind of analyses mentioned above cannot provide much light on the reasons behind the proliferation of regional trading arrangements. In this paper, we argue that a proper understanding of the reasons behind their concern about the growth of regionalism in many developing countries like India requires going beyond the traditional approach and by incorporating the potential cost of these arrangements in the event of a retaliatory trade regime. Here we use both the traditional models of comparative static competitive equilibrium in which tariffs are externally fixed and models of non-cooperative Nash (1950) equilibrium under which each country sets their optimal tariff subject to given tariff rates in other regions and a global equilibrium is reached when regional optimizing behaviors are mutually consistent across all regions. We find significant differences in the impacts of regional trade arrangements between these approaches.

We chose India as the single country and seven other aggregated regions in the model. Choice of India is because the author has access to data on India and it is one of the most vocal developing nation in the WTO. India, here, could be viewed as a representative small non-member nation. The model we use for evaluation of the impacts of various regional trade arrangements on India and other region is an enlarged version of the retaliatory Nash tariff and trade structure first set out in Gorman (1957) and Johnson (1953–1954), and subsequently expanded in Ghosh and Whalley (1997), Hamilton and Whalley (1983), Kennan and Riezman (1990), Markusen and Wigle (1989), and Perroni and Whalley (1996). Each region in the model has a fixed supply of one differentiated good. It captures trade, consumption, production as well as tariffs by region.

We compute global competitive equilibria in which tariff rates are exogenously specified and the effect of trade integration are simulated by changing the applicable tariff rates exogenously. We also compute global retaliatory Nash non-cooperative equilibria of a tariff game; tariff rates are thus endogenously determined. Implications for formation of trading arrangements are then analyzed under both the solution concepts.