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**AN INTEGRATED APPROACH TO AGRICULTURAL TRADE  
AND DEVELOPMENT ISSUES:  
EXPLORING THE WELFARE AND DISTRIBUTION ISSUES**

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## **ABSTRACT**

Computable general equilibrium (CGE) analysis has been widely used to analyse the economic effects of trade liberalization initiatives. By way of illustration, this paper begins by reviewing CGE studies of trade liberalization within the Asia Pacific Economic Cooperation (APEC), including studies of the effects of agricultural trade liberalization. Although these studies predict substantial welfare gains, they fail to address the developmental and political economy issues which typically cause Governments to hold back from agricultural trade liberalization. Distributional effects are central to these issues. Using a proposal known as the APEC Food System as a case study, the paper outlines and illustrates an extension of CGE methodology that allows an exploration of the distributional effects of agricultural trade liberalization, and of how welfare and distribution outcomes can be modified by various types of policies designed to improve labour productivity in the agricultural sector. In the process it is shown how this extended CGE methodology can throw light on the potential of appropriately designed policies of this kind to simultaneously improve both welfare and distribution outcomes of trade liberalization.

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## I. INTRODUCTION

Computable general equilibrium (CGE) analysis has become a well-established methodology for the estimation of trade and welfare effects resulting from trade liberalization. This paper reports on the possibility of extending the use of CGE analysis to explore important issues related to the link between trade and development, in particular the impact of trade liberalisation on income distribution, and the ways in which both the welfare and distribution effects of trade liberalization may be modified by various development-related policies. These possibilities are illustrated by reference to research on agricultural trade liberalization in the Asia Pacific Economic Cooperation (APEC) region, but it is suggested that the approach used may have more general application. While the policy issues raised in relation to APEC are interesting they are not the main focus of this paper, having been covered more extensively elsewhere, for example in Gilbert, Scollay and Wahl (2000). A considerable amount of explanatory material about the APEC issues is provided for illustrative purposes, but this is primarily aimed at highlighting the potential analytical contribution of the methodological approach which is the main focus of the paper.

The paper begins with a brief backgrounding of the APEC initiatives which are the subject of the research used in the paper for illustrative purposes. A brief outline of

the use of CGE techniques in modelling trade and welfare effects then follows. Next, the paper shows how CGE modelling has been extensively applied in a relatively conventional way to analyse trade and welfare effects of potential APEC trade liberalization. The nature of the results obtained from these modelling efforts is then discussed at some length, and particular attention is paid to recent work on agricultural trade liberalization. This leads into a discussion of how these conventional approaches, which reflect the standard analytical approaches to trade liberalization, fail to address the political economy problems and development concerns which are fundamental to the practical policy issues raised by agricultural trade liberalization. A proposal known as the APEC Food System which emerged within APEC in an attempt to address these concerns is then briefly outlined. Any economic modelling approach aimed at exploring the policy implications of such a proposal clearly has to be capable of taking distributional effects into an account. The remainder of the paper describes how the conventional CGE modelling techniques were extended in an effort to meet this requirement, and the nature of the results which were obtained. While the modelling experiments described here are obviously crude and exploratory, it is suggested that the approach taken has the potential to be developed as a useful tool in the analysis of trade and development issues.

## II. THE APEC APPROACH

The APEC programme is an interesting example of the kind of trade liberalization initiative which has been the subject of extensive CGE modelling work. In 1994 the leaders of the APEC member economies agreed to the goal of free trade and investment in the Asia-Pacific region by 2010 for industrialized economies and by 2020 for developing economies. This objective was to be pursued within APEC through members' commitment to programmes of trade and investment liberalization and facilitation (TILF) and economic and technical cooperation ("Ecotech"). Since APEC includes all major economies of the Pacific Rim,<sup>1</sup> including the United States, Japan and China, and accounting for over half of world gross domestic product (GDP) and a little under half of world trade, this is potentially a very significant initiative.

APEC distinguished itself from conventional preferential approaches to regional trade liberalization by adopting the principle of "open regionalism, involving commitment to non-discriminatory liberalization through the process of 'concerted unilateralism' ". There has long been an unresolved issue within APEC as to whether it is satisfactory for this non-discriminatory liberalization to be implemented uncon-

ditionally, without reciprocation being required from the rest of the world, or whether it should be conditional on such reciprocation. These two different approaches to "open regionalism" are referred to respectively as "unconditional non-discrimination" and "conditional non-discrimination".

Considerable effort has been expended by a large number of researchers on quantifying the likely effects of the trade liberalization contemplated in APEC's stated objectives. Studies have focused on the overall trade and welfare effects of APEC liberalization, and also on comparing the effects under "unconditional non-discrimination" with those under "conditional non-discrimination". Another focus has been the role within the overall APEC liberalization programme of sectoral liberalization initiatives such as early voluntary sector liberalization (EVSL). Some studies have also considered the effect of liberalization in a single sector such as forestry (Gilbert, 1998) or agriculture and food products (Scollay and Gilbert, 1999b). Because the APEC liberalization programme is potentially so extensive, the use of CGE methods has proved to be most useful in this task.

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