

Factor Market Flexibility and the Implications of Trade Policy Reforms

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Abstract

1. Introduction
2. Factor Market Operations in CGE Models
 - 2.1 Perfect Mobility
 - 2.2 Sluggish
3. Factor Market Segmentation and Imperfect Mobility
4. Data and Model
5. Experiments
6. Results and Analyses
7. Concluding Comment

Analyses of trade policy reforms between developed and developing regions using global CGE models often conclude that while the absolute gains for developed economies outweigh the absolute gains for developing countries the relative gains for developing countries are larger. However analyses of the results typically demonstrate that the extent of structural change in developing countries is many times greater than in developed economies; in previous studies the authors have found that the proportions of factors reallocated to different activities in developing economies can be in excess of one hundred times the proportions reallocated in developed economies. Moreover explorations of the properties of these simulation exercises demonstrate that the factor reallocations are often a critical determinant of the results; for instance if factor use by activities is fixed, an extreme assumption, then typically there are no gains in developing economies

In the majority of global CGE models it is commonly assumed that factors are perfectly mobile across activities irrespective of whether full employment or excess supplies of factors are assumed. Such an assumption implicitly assumes that each factor is perfectly homogenous and

that differences in the marginal productivities of a factor across activities are solely attributable to activity specific differences. Consequently factors are assumed to be perfectly mobile and reallocations across activities are costless. Furthermore it is assumed that factors in different segments, e.g., skilled and unskilled labour, cannot be reallocated across segments. Arguably these assumptions are relatively poor representations of the operation of actual labour markets.

An alternative assumption, used in the GTAP model among others, is that factor reallocations are 'sluggish' and that constant elasticity of transformation (CET) functions control factor reallocations: most frequently it is used for land and the authors know of no cases where it has been applied to labour factors. This assumption evidently impedes factor reallocations and thereby reduces the flexibility of factor markets. But it is not without limitations. In particular the limitations imposed on price definitions/linkages by CET functions are known and the units with which factors are measured, and hence that are used to clear factor markets, are opaque.

This study adapts a typical global CGE model, the GLOBE model, so as to increase the factor market segments and then to allow imperfect reallocation between related segments. Thus, for instance, unskilled labour can be segmented between groups of activities, e.g., agriculture, manufacturing and services, and then reallocations between the different unskilled labour segments are controlled by migrations functions where the elasticities of transformation are less than infinity and market clearing for unskilled labour is defined across the related segments. Within the segments the perfect mobility assumption is retained. Arguably each factor category could be segmented by each activity but this would require the specification of (unknown) elasticities between each segment, which arguably requires too many assumptions. The approach used in this study is a compromise; the number of segments is limited.

The simulations used to illustrate the implications of the changes in model formulation are stylised representations of a Doha development agenda (DDA) agreement. The choice of simulations is deliberately simple since they are a class of simulations for which the properties are well known and understood. The data are a twenty sector, five factor and fifteen region aggregation of GTAP 8 for 2007.

The preliminary results indicate that the potential gains from a stylised DDA decline for all regions when compared to results achieved when the 'standard' assumption of full factor mobility is imposed. This is an expected conclusion: any impediment to structural changes in response to changed incentives will, by definition, have negative implications. However the

implications for developing and developed regions differ substantially. Developed countries continue to experience positive gains even with very low migration elasticities whereas developing countries, even when full employment is assumed, often lose all gains even at relatively high elasticities.

Additional simulations to explore the relative importance to the results of the extent of segmentation versus the migration elasticities are required to understand more fully the behaviour of the modified model.

