Global Supply Chains: towards a CGE analysis*

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Abstract

Economists have analysed global supply chains (GSC) using pure theory, case studies, econometrics and input-output calculations. We now need a new type of computable general equilibrium (CGE) model to show how GSC trade affects welfare and its distribution between and within nations. The new model must recognize: fragmentation of production; scale economies; intermediate inputs that cross national borders multiple times embodied in products at different stages of completion; and decision-making by global agents. We describe a prototype that incorporates these features and gives interpretable results not attainable with a standard CGE model. We discuss steps to move from the prototype to a policy-relevant model.

Key words

Global supply chains; Computable general equilibrium modelling; Global decision making; Footloose activities; Trade costs

JEL codes: F12; F60; C68; C67

1. Literature overview and introduction

Disintegration of the production process across national boundaries within vertically integrated global industries has been an important feature of economic globalization in recent decades. This international division of labour opens up opportunities for countries to specialize in different slices (tasks) of the production process in global supply chains (GSC) according to their relative cost advantages.[1] With production separated into highly specialized processes in a wide range of industries, new opportunities for trade are created even for small countries at various stages of development and with different factor prices.

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[1] Alternative terms used in the recent international trade literature to describe this phenomenon include global production sharing, international production fragmentation, intra-process trade, vertical specialization, slicing the value chain, and offshoring.