



NORTH-HOLLAND

Journal of Policy Modeling  
25 (2003) 947–961

Journal of  
Policy  
Modeling

# Applied general equilibrium analysis of trade liberalisation on land-based sectors in Malaysia and Indonesia

Jutamas May Arunanondchai\*

*Department of Economics, University of Warwick, UK*

Received 10 September 2002; received in revised form 25 August 2003; accepted 28 August 2003

## Abstract

This paper presents general equilibrium evaluations of forest sector trade for South-east Asian exporters. The four scenarios examined range from the 1994 Uruguay Round tariff reductions to a complete liberalisation of forest and agricultural products trade. We find that simultaneous reductions in forest and agricultural sector tariffs make Indonesia and Malaysia worse off. For Indonesia, this is due to the fall in forest rent and agricultural tariff revenues. Malaysia has the highest ratio of agricultural imports to total land-based sector imports, the rise in agricultural prices thus hits Malaysian consumers the hardest.

We find that terms of trade effect omitted from the partial equilibrium framework may reduce the welfare calculations for Malaysia and Indonesia in the forest sector trade by as much as 106 and 58%, respectively. This points to the importance of general equilibrium modelling in the logging industry. The same applies to other sector specific analyses where trade is concentrated between few countries.

© 2003 Society for Policy Modeling. Published by Elsevier Inc. All rights reserved.

*JEL classification:* F13; F14; O13; O20

*Keywords:* Uruguay round; General equilibrium; Forest production; Agricultural policy

\* Present address: Fiscal Policy Research Institute, 3rd Floor, Ministry of Finance, Bangkok 10400, Thailand. Tel.: +66-2-618-3402; fax: +66-2-618-3408.

*E-mail address:* jutamas@fispri.org (J.M. Arunanondchai).

## 1. Introduction and background

Southeast Asia has one of the highest rates of deforestation in the world, with land-based activities, such as agriculture and forestry, being amongst the most important causes. Misguided government policies have been blamed for the high rate of deforestation in the region. The policies have not only distorted outputs and trade along the vertical wood production chain but also distorted land use incentives across sectors. In this paper, we examine the impact of the 1994 Uruguay Round (UR) agreement on the forestry and agricultural sector in Malaysia and Indonesia, using an applied general equilibrium model. The deforestation problem is particularly acute in Indonesia. Both Malaysia and Indonesia are the most forest-rich in the region and are major exporters of log, sawnwood and plywood for this region.<sup>1</sup>

Although CGE modelling technique has been used by many studies to examine the impact of the Uruguay Round, the sectoral breakdowns in the previous models have not been sufficiently refined to allow for analysis of the impact on individual forest industries (see, e.g., [Francois, McDonald, & Nordstrom, 1995](#); [Nguyen, Perroni, & Wigle, 1995](#)). A detailed breakdown of the impact of the Uruguay Round on each major wood industry has been carried out by [Barbier \(1999\)](#) using a partial equilibrium framework. His results show that the gains to total forest products trade range between US\$0.46 and US\$0.59 billion or 0.4–0.5% of the total value of forest products imports. Nonetheless, for vertically related industries like the forest products sector, the general equilibrium framework is more appropriate. In addition, our results show that the terms of trade effect omitted from the partial equilibrium framework may reduce the welfare calculations for Malaysia and Indonesia by as much as 106 and 58%, respectively.

Similar to [Nguyen et al. \(1995\)](#), we find that importing countries gain most from the Uruguay Round trade liberalisation, with the greatest proportionate gains going to the Asian Importing Region (consisting of Japan, Korea, Taiwan Province, China and Hong Kong) at US\$0.68 billion. Malaysia and Indonesia become worse off following the forest and agricultural policy changes. For Indonesia, this is due to the fall in timber rent and agricultural tariff revenues. Originally Indonesia had extremely high agricultural import tariffs (approximately 72%), which is subject to a 24% cut. Although Indonesia has agreed to reduce agricultural export subsidies, these have been small originally and, therefore, do not compensate for the big loss in tariff revenues. Relative to other regions, Malaysia has a very high ratio of agricultural imports to total agricultural and forest sector imports, thus the rise in the world price of agricultural products hits Malaysian consumers the most.

In all tropical regions, forest rent falls while the returns to agricultural production rise. In this way, forestry is likely to exert less pressure on forest resources post-UR agreement, while the pressure for conversion of forestlands for agricultural uses is likely to increase.

---

<sup>1</sup> Details of market shares of log, sawnwood and plywood exports from Malaysia and Indonesia.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات