



## Price stabilization and impacts of trade liberalization in the Southeast Asian rice market



Hoang K. Hoang<sup>a,\*</sup>, William H. Meyers<sup>b</sup>

<sup>a</sup> Food and Agricultural Policy Research Institute (FAPRI), Department of Agricultural and Applied Economics, University of Missouri-Columbia, 101 Park De Ville Dr., Suite E, Columbia, MO 65203, USA

<sup>b</sup> Department of Agricultural and Applied Economics, University of Missouri-Columbia, 101 Park De Ville Dr., Suite E, Columbia, MO 65203, USA

### ARTICLE INFO

#### Article history:

Received 30 March 2015

Received in revised form 8 July 2015

Accepted 24 July 2015

#### Keywords:

Price stabilization

Southeast Asia

Rice

Trade liberalization

Partial equilibrium model

### ABSTRACT

A global rice model using a partial equilibrium framework is used to investigate the impact of trade liberalization in major rice trading countries of Southeast Asia, focusing on the price stabilization mechanism that has long been adopted by governments in Indonesia, Malaysia and the Philippines. The simulation results suggest that the removal of state trading enterprises in these three countries would lower their domestic prices by as much as 34% but increase the world prices by about 20%. When free trade liberalization is realized in 2020, domestic prices decline further in Indonesia and the Philippines, leading to an increase in their imports, which are estimated to be as much as 4.5 million tons. The impact on domestic prices, however, is absorbed nearly evenly among Indonesia, the Philippines, Thailand and Vietnam.

© 2015 Published by Elsevier Ltd.

### Introduction

Rice is the major staple for nearly half of the world's population (Maclean et al., 2013). In the world rice market, Southeast Asia plays an important role since it houses the world's leading rice exporters, Thailand and Vietnam, and some of the world's top rice importers, i.e. Indonesia, Malaysia and the Philippines (hereafter called IMP countries). Thailand and Vietnam together account for about half of the world's exports while Indonesia, Malaysia and the Philippines collectively account for about 10% of the world's imports (USDA, 2013).

Within Southeast Asia, efforts have been made to gradually liberalize regional rice trade since the inception of the Association of the Southeast Asian Nations (ASEAN) and the ASEAN Free Trade Agreement (AFTA). As scheduled in the ASEAN Trade in Goods Agreement (ATIGA) (ASEAN, 2009), rice tariffs have been cut to 0–5% in Brunei, Cambodia, Laos, Singapore, Thailand and Vietnam, along with a majority of other products and services traded within the region. However, in IMP countries, rice, including paddy and milled rice, is considered highly sensitive to food security and thus, subject to high tariff rates. As of 2014, rice tariffs remained at 30% in Indonesia, 20% in Malaysia and 40% in the Philippines. In addition to border tariffs, rice trade in IMP countries is also subject

to a wide array of protectionist policies, as their governments sought to stabilize domestic prices and improve self-sufficiency. Quantity restrictions and import/export bans are among the most commonly used measures in this regard. Rice imports are monitored in sync with the government's food security targets and administered by a state-trading enterprise (STE).

ASEAN country members have set about to become an Economic Community in December 31, 2015. Tariffs on goods and services will be further reduced as a result. Tariffs on rice will be reduced by 5 percentage points in Indonesia and the Philippines, to 25% and 35%, respectively, but remain at 20% in Malaysia (ASEAN, 2009). Although these cuts are not so drastic that would bring about deep liberalization in the regional rice trade, they showed IMP countries' effort to open their domestic markets.

In the literature, the impact of trade liberalization on the rice markets has been widely assessed, especially during the Doha Round negotiations when many countries attempted to join the World Trade Organization. To address the complexity of the issue and analyze the impact at the global level, a majority of studies have employed large-scale agricultural commodity models, which are mainly shared in two major forms: Partial Equilibrium (PE) and Computable General Equilibrium (CGE). Among those rice-related models are the AGLINK-COSIMO model of the Organization for Economic Co-operation and Development (OECD) and Food and Agriculture Organization (FAO), the Country-Commodity Linked System (CCLS) of the US Department of Agriculture (USDA), the IMPACT model of the International Food Policy Research Institute

\* Corresponding author.

E-mail addresses: [hoangh@missouri.edu](mailto:hoangh@missouri.edu) (H.K. Hoang), [meyersw@missouri.edu](mailto:meyersw@missouri.edu) (W.H. Meyers).

(IFPRI), the RICEFLOW of the University of Arkansas and the Arkansas Global Rice Model (AGRM) of the University of Arkansas and FAPRI-MU.

Except for AGRM and RICEFLOW which differentiate rice by type (short, medium and long grain) and quality, existing rice models in the literature treated rice as a homogenous commodity. Policies such as tariffs, export subsidies, government supports or Producer Support Estimate are normally incorporated in supply and demand equations to present the price wedge between domestic and world prices. The impact of trade liberalization, however, varies greatly among studies due to differences in the model assumptions, structure, baseline year and policy representation. Under full liberalization (removing all trade barriers and domestic supports), the world prices of rice were estimated to increase by as much as 22% for long-grain rice and 80% for medium/short grain rice in a study using AGRM (Wailes, 2004). Results from RICEFLOW, the only spatial rice model in the literature, showed a quite different result for long-grain rice but similar for medium/short grain: an increase of 1.8% in the export prices of long-grain rice and 71% for medium/short grain rice, while it was 33% for all rice (Wailes, 2004). An IFPRI study using IMPACT model estimated the impact of trade liberalization on the world prices of rice to be about 14% (IFPRI, 2010) while results from GTAP (Diao et al., 2001) and AGRM (FAPRI, 2002) both showed that the world prices were estimated to increase by about 10% relative to the baseline. Under free trade liberalization (i.e. removing trade-only barriers such as tariffs and export subsidies), models provided relatively smaller impacts, ranging from 19% according to results from AGRM (Wailes, 2004), or just 3% as shown in a study conducted by Bouët (2008) using the MIRAGE model, a modified version of GTAP. Results from other studies generally fall in between; some even estimated negative price effects (see FAO Report (FAO, 2004)).

At the regional level, however, there are very few studies assessing the impact of AFTA or freer trade in rice, given the importance of Southeast Asia in the international rice market. Using a Spatial Price Equilibrium model, Acosta and Kagatsume (2003) estimated that the removal of AFTA rice tariffs would increase domestic prices by as much as 30% in Indonesia, followed by the Philippines and Malaysia. In a study using the Viet Nam Agricultural Spatial Equilibrium Model – VASEM, Minot and Goletti (2000) estimated that the removal of rice export quota, which was estimated to be about 2.5 million tons in 1995, would increase the domestic prices of milled rice by 20.3–22% while it would decrease export prices by 2.1–3.7%.

As mentioned, models are widely different in many aspects, which makes it difficult to compare simulation results. Nevertheless, one key conclusion that can be drawn from the literature is that none of the existing models considered and incorporated the behavior of STEs in the rice market. It is obvious that STEs play a central role in regulating the country's rice trade, and they do not operate under a competitive environment as economic textbooks often assume. Ignoring this important market behavior, thus, would result in a misleading understanding of the impact of free trade (FAO, 2004).

To address this issue in the context of ASEAN economic integration, we implement a modeling exercise to investigate the likely impact of rice trade liberalization in IMP countries with the consideration of the price stabilization mechanism. This is a key characteristic that makes our model assumptions more realistic than previous studies that apply structural dynamic modeling techniques. A structural dynamic partial equilibrium model is employed with special attention on five major rice trading countries in Southeast Asia, i.e. Indonesia, Malaysia, the Philippines, Thailand and Vietnam, hereafter called ASEAN-5 countries. The impact of freer trade is evaluated under three hypothetical scenarios representing steps toward free trade liberalization in

IMP countries. The impact of STEs in IMP countries is also evaluated in comparison with AFTA border tariffs.

## ASEAN rice market and the role of STEs

### ASEAN rice market

Southeast Asian countries produce and consume mainly *indica* (long-grain) rice but the market is distinctively segmented by quality. The prices of Vietnamese rice are normally lower than the prices of Thai rice even for the same quality. For example, the average price of Vietnamese 5% broken rice was about \$20 below the price of Thai 5% broken rice during the 2000–2007 period (Fig. 1). After 2007, the price gap widened due to the effects of the 2007/08 food price crisis coupled with the Thai government's Paddy Price Pledging (PPP) policy that drove up Thailand rice prices in the domestic and world market. Since PPP policy was halted in early 2014, the prices of Thai rice declined significantly and came back to their “normal” relationship with Vietnamese prices.

Throughout this study we use Thai FOB 5% broken rice prices as the world reference prices, but due to the PPP policy that made the prevailing Thai prices become a less relevant indicator, Vietnamese 5% prices are used instead for the 2008–2013 period. Thai prices resume their role as the world reference prices from 2014 onward. The “hybrid” world reference prices are shown as the black line in Fig. 1. The world prices peaked in 2008 at \$614/ton then declined significantly afterward. From 2009 to 2014, the world prices averaged at \$433/ton in nominal terms.

Most imports by IMP countries are generally sourced from Thailand and Vietnam, thanks to proximity and consumers' preferences for similar rice types. In terms of quality, Indonesia and the Philippines have been known as importers of low- and medium-quality rice, while Malaysia mainly imports high-quality rice (Cramer et al., 1993). In terms of trade, data from UN Comtrade database (United Nations, 2013) showed that Thailand and Vietnam collectively account for about 95% of Indonesia and the Philippines's annual imports and about 90% of Malaysia's. The individual share of imports originated from Thailand and Vietnam also changed over time. Since 2000, Vietnam has been the major supplier of rice for the Philippines with a dominant share ranging from 80% to 99%. Similarly, about 70% of Malaysia's ASEAN-origin imports comes from Vietnam. As Thai rice became more expensive in the world market in the past few years, Indonesia has turned to Vietnam for cheaper rice as well. Their imports from Vietnam have been increasing, accounting for about 65% of total rice imports annually.

In IMP countries, rice is a political commodity because it is closely tied up with food security issues. Millions of poor people in these countries rely on rice as the major source of daily calorie intake, and millions of farmers also depend on rice crops to make a living. To protect their domestic markets from global market volatility, governments in IMP countries sought to maintain a price stabilization regime. This approach, however, has been subject to intense debate in the policy analysis arena since the 1950s (Timmer, 1989).

International trade theory based on the comparative advantage proposition states that any deviations from free trade would cause allocative inefficiencies and encourage rent-seeking behaviors (Samuelson, 1948). However, others argued that in the presence of market imperfections and distortions, trade policies such as tariffs or quotas would increase national welfare as the benefits of reducing the negative effects outweigh the efficiency losses caused by the protection (Bhagwati and Srinivasan, 1971; Krugman, 1987). This seems particularly true for the rice sector in IMP countries where the market is formed by numerous small farmers and characterized by very inelastic supply and demand. Thus,

Download English Version:

<https://daneshyari.com/en/article/5070249>

Download Persian Version:

<https://daneshyari.com/article/5070249>

[Daneshyari.com](https://daneshyari.com)