Available online at www.sciencedirect.com
ScienceDirect
Journal of Policy Modeling xxx (2016) xxx–xxx
Journal of Policy Modeling
www.elsevier.com/locate/jpm

Impact of the China–Australia FTA on global coal production and trade

Hongjin Xiang [a,*], Yanxiang Kuang [b], Chenhua Li [a]

[a] *School of Economics and Trade, Nanjing Audit University, Nanjing 211815, China*
[b] *School of Marxism, Central South University, Changsha 410083, China*

Received 16 August 2016; received in revised form 12 November 2016; accepted 25 December 2016

Abstract

Using a computable partial equilibrium model, this study provides a comprehensive and prospective empirical analysis of the economic impacts of the China–Australian Free Trade Agreement (ChAFTA) on global coal output, trade, consumption and welfare. Based on data from 2014, the simulated results indicate that ChAFTA has a significant trade creation effect. ChAFTA will increase Australia's coal exports to China by 35.7% and China's exports to Australia by 19.9%. However, the impacts of ChAFTA on global coal production and price are relatively limited. Results also demonstrate that ChAFTA will cause an annual net welfare loss of US$ 200 million for China and a net welfare gain of US$ 569.3 million for Australia. Moreover, Chinese consumers and Australian coal producers are the biggest beneficiaries of ChAFTA. Based on the research conclusions, we put forward some policy recommendations.

JEL classifications: C63; F13; F17

Keywords: China–Australia FTA; GSIM model; Global coal trade; Welfare effects

Introduction

After a decade of negotiations, the China–Australia Free Trade Agreement (ChAFTA) was formally signed on 17 June 2015 and entered into force on 20 December 2015. ChAFTA is

* Corresponding author at: No. 86 Yushanxi Road, Nanjing 211815, China.
E-mail addresses: xhongjin@yahoo.com (H. Xiang), kyx0713@163.com (Y. Kuang), jianyue1976@163.com (C. Li).

http://dx.doi.org/10.1016/j.jpolmod.2017.01.001

Please cite this article in press as: Xiang, H., et al. Impact of the China–Australia FTA on global coal production and trade. *Journal of Policy Modeling* (2016), http://dx.doi.org/10.1016/j.jpolmod.2017.01.001

China's fourteenth FTA and its first FTA with a major economy.[1] ChAFTA is also one of the FTAs with the highest degree of liberalization of trade and investment. Under the agreement, 85.4% of goods traded between both sides will cut tariffs to zero immediately. About 97% of Australian exports to China and 100% of China's exports to Australia will be tariff free following the designed timeline step by step.

In fact, regional trade agreements (RTAs), which are permitted by Article XXIV of the GATT, have become increasingly prevalent since the early 1990s. As of 1 February 2016, some 454 physical RTAs had been received by the GATT/WTO and 267 of these were in force.[2] By June 2016, all WTO members have at least one RTA in force.

With such rapid growth in the numbers, RTAs' impacts have become a hot topic in academic research. Viner (1950) is one of the earliest studies of the trade effects of FTAs; he propose that FTAs have a positive effect on trade creation and a negative effect on trade diversion, and describe how these two effects determine the welfare effects of a FTA.

Most of the follow-up literature consists of empirical studies. The gravity equation has long dominated the empirical literature as the main econometric method for estimating FTAs' ex-post trade effects (Baier, Bergstrand, & Feng, 2014). Using the gravity equation, Carrère (2006) estimation shows that FTAs have a significant effect on trade creation among members; however, this effect varies among FTAs. Vicard (2011) argues that an FTA's effect on trade between two countries depends on both the economic characteristics of the country pair and the characteristics of all other members of the RTA. Baier and Bergstrand (2007) and Magee (2008) dynamic analyses found that the average trade creation effect of RTAs is close to 50%, and will increase to almost 100% after 10 years. Using gravity equations, Baier et al. (2014) provide the first evidence that both intensive and extensive (goods) margins are affected by RTAs, and Anderson and Yotov (2016) estimate the volume effects of FTAs using panel data gravity method.

Almost all of the above studies are ex-post analyses that examine trade flows after the RTA has been implemented. Ex-ante studies usually use computable general equilibrium (CGE) models to simulate the predicted effects of RTAs. Based on a multi-sector and multi-region dynamic CGE model, Ghosh and Rao (2005) estimate the potential economic impacts of a possible Canada–U.S. customs union in the three NAFTA countries. Siriwardana (2007) assesses the trade-diversion and trade-creation effects of the Australia–US FTA using the Global Trade Analysis Project (GTAP) model. Waschik (2009) simulate the effects of FTAs on non-members. Follow-up studies include Kitwiwattanachai, Nelson, and Reed (2010), Ahmed (2011), Lakatos and Walmsley (2012), Jean, Mulder, and Ramos (2014), Bhattacharyya and Mandal (2016).[3]

Some scholars have simulated the economic impacts of ChAFTA since China and Australia launched free trade agreement negotiations in 2005. Mai, Adams, Fan, Li, and Zheng (2005) simulate the potential benefits of ChAFTA using a CGE model. The results show that it will sharpen the competitiveness of the Chinese manufacturing sector and raise the welfare of Australian consumers. Zhou, Wu, Hu, and Cui (2006) use the GTAP model to simulate the impact of ChAFTA on China's agriculture and the simulation results show that the challenges faced by China's agriculture are greater than the opportunities. Yu, Cheng, and Yang (2010) use the GTAP model

[1] By 2016, China has formally signed 14 free trade agreements, involving 22 countries and regions.

[2] Free trade agreements (FTAs) account for 90% of preferential trade agreements (PTAs), while customs unions (CUs) account for 10%.

[3] Dixon and Rimmer (2016), Bjerkholt, Førsund, and Erling Holmøy (2016) describe the origin, development and application of the general equilibrium model in details.

Please cite this article in press as: Xiang, H., et al. Impact of the China–Australia FTA on global coal production and trade. *Journal of Policy Modeling* (2016), http://dx.doi.org/10.1016/j.jpolmod.2017.01.001