



What's next in the U.S.-Canada softwood lumber dispute? An economic analysis of restrictive trade policy measures



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ABSTRACT

A new chapter of an everlasting softwood lumber trade dispute between the U.S. and Canada begins with an imposition of the countervailing duty (CVD) and anti-dumping (AD) tariffs on Canadian softwood lumber supply to the U.S. By using a 20-region global softwood lumber trade model, we examine the regional welfare impacts of CVD and AD tariffs on U.S. imports of Canadian softwood lumber in both countries. We also evaluate the welfare implications of alternative restrictive trade policies relevant to the softwood lumber trade dispute. Simulation results from a mixed complementary problem model calibrated using positive mathematical programming reveal that a 26.75% CVD and AD tariff curtails Canadian lumber shipments to the U.S. by 4.9 million cubic meters (m³), reduces Canada's market share in the U.S. by nearly 5%, and encourages the U.S. domestic lumber industry to produce an additional 2.6 million m³. The government tax revenue and the U.S. producers' gain clearly outweigh the loss incurred by U.S. consumers. However, Canadian producers have an economic incentive to voluntarily reduce their share of the U.S. market by voluntarily restricting exports and capturing quota rents. Additionally, the foreign exchange rate has the ability to alter the effects of protectionist policies.

1. Introduction

The softwood lumber trade dispute between the U.S. and Canada, often termed the softwood lumber war, is one of the longest running trade battles in the history of these two countries. Central to the issue is the alleged Canadian subsidies to domestic lumber producers and the subsequent injury to the U.S. lumber industry. The modern version of the dispute started in 1982 when a group of U.S. softwood lumber producers claimed that Canadian lumber was subsidized through low stumpage fees (Zhang, 2007). In order to resolve the trade dispute, at least temporarily, both countries settled on a series of short-term restrictive trade measures including the five-year Memorandum of Understanding (MOU) from 1987 to 1991, the Softwood Lumber Agreement (SLA) 1996 from 1996 to 2001, and the SLA 2006 from 2006 to 2015. Despite several legal proceedings and arbitration rulings from various organizations including North American Free Trade Agreement (NAFTA), World Trade Organization (WTO) and London Court of International Arbitration (LCIA), a long-term or permanent resolution of this trade issue has yet to be found.

In the past, the two countries have agreed on a medley of restrictive trade policies to limit Canadian lumber shipments to the U.S. including countervailing (CVD) and anti-dumping (AD) tariffs, export taxes, and/or quotas (Zhang, 2007). The 1987 MOU provisioned a 15% export tax on Canadian lumber exports to the U.S. or stumpage price adjustments in Canada. The SLA 1996 employed a tariff-regulated quota system, under which US\$50-100 per thousand board feet (mbf) of the export fee was collected for export quantities over 14.7 billion board feet. Similarly, SLA 2006 stipulated a price-driven ad-valorem export tax rate coupled with a quota system reaching upwards of 22.5%. Moreover, during the turmoil period between 2001 and early 2006, the U.S. Department of Commerce levied several CVD and AD tariffs up to a rate of 27.2% against Canadian lumber shipments to the U.S.

Since the expiration of SLA 2006 on October 2015, the trade debate has been active once again. Despite several rounds of negotiations, the U.S. and Canada failed to come up with a new trade agreement within a one-year standstill, with Canadian lumber shipments to the U.S. increasing by 16% during this period (BC Stats, 2017). In response to surging Canadian lumber exports in the absence of any trade barriers,

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the U.S. announced a preliminary CVDs of about 20% against Canadian lumber flows to the U.S., with company-specific duty rates ranging from 3 to 24% (Global Affairs Canada, 2017). Similarly, under suspicion of a dumping case, the U.S. Department of Commerce also announced company-specific preliminary AD rates ranging from 4.59% to 7.72% with an average rate of 6.87% (USDOC, 2017). Together, the average CVD and AD tariffs on Canadian lumber to the U.S. is 26.75%, effective early 2017. With the imposition of CVD and AD tariffs on Canadian softwood lumber, a new episode of the softwood lumber dispute—Lumber V—is officially kicked off between the U.S. and Canada.

The purpose of this paper is to estimate the market and welfare impacts of the recently imposed 26.75% CVD and AD tariffs on Canadian lumber flows to the U.S., as well as consider alternative restrictive trade policies relevant to the softwood lumber dispute. To meet this objective, this study utilizes a 20-region global softwood lumber trade model that is conceptually similar to that developed by Johnston and van Kooten (2017), but differs in its policy focus. The model replicates the global softwood lumber market of 2014, as it is the most recent period of undistorted free-trade between Canada and the U.S.,¹ allowing the evaluation of undistorted market responses. Given that both countries are actively involved in negotiation for ways forward, the findings of this study are timely, and could provide useful economic insights for both sides of the border.

The remainder of the paper is organized as follows. First, we provide an overview of literature, followed by a discussion of the theoretical framework of restrictive trade policies relevant to the softwood lumber dispute. The next section explains the derivation of the mixed complementary spatial price equilibrium model of the global softwood lumber market, and the positive mathematical programming calibration technique. The next section reports on the estimated effects of the 26.75% CVD and AD tariffs on production, consumption and price of softwood lumber in various U.S. and Canadian regions, followed by an analysis of the welfare effects. A sensitivity analysis to major parameter assumptions, and exchange rate fluctuations is provided, followed by concluding remarks.

2. Literature

Given the rich history of iterative policy interventions, the Canada-U.S. softwood lumber dispute has received considerable attention among researchers. A majority of the literature have relied on empirical models of the U.S. softwood lumber market with lumber imports from Canada, to evaluate the effects of past trade restrictions under the framework of a two-country partial equilibrium model. By estimating econometric models of the U.S. softwood lumber market, Chen et al. (1988), Wear and Lee (1993), and Myneni et al. (1994) evaluated the welfare impact of 1986 MOU in the U.S. and Canada. Similarly, Lindsey et al. (2000), Zhang (2001, 2006), Baek and Yin (2006) quantified the market and welfare effects of SLA 1996. Recent econometric studies by Baek (2011), Nagubadi and Zhang (2013), Parajuli et al. (2015), Parajuli and Zhang (2016) and Zhang and Parajuli (2016) examined the effects of SLA 2006 on the U.S. and Canadian lumber markets. A common theme among these studies is that protectionist policies improve the welfare of U.S. lumber producers.

Under the framework of spatial equilibrium analysis, a few studies have evaluated welfare impacts of various restrictive trade policies on the U.S. and Canadian economies using simulation approaches. Boyd and Krutilla (1987) developed a state and province-specific spatial model of the U.S. and Canada softwood lumber markets and estimated impacts of a variety of tariffs, quotas, and voluntary restraint agreements. Similarly, Devadoss et al. (2005) and Devadoss (2006)

considered a global spatial equilibrium model to evaluate the effects of the U.S. lumber trade restriction measures on the lumber markets all across the world. Their major finding was that lumber trade diversion occurred due to the U.S. CVD and AD tariffs, as non-Canadian exporters captured the U.S. market share lost by Canada, and Canada was also able to redirect its exports to other importers. Moreover, van Kooten and Johnston (2014) developed a multi-regional integrated log-lumber trade model, and quantified the welfare impacts of SLA 2006. Their simulation results, revealed that U.S. lumber production increased by about one million cubic meters and Canada lost about \$92 million. Johnston and van Kooten (2017) examined the economic impact of the quota allocation adopted under SLA 2006, and found that SLA 2006 created an annual deadweight loss of \$28 million incurred by U.S. consumers, and the quota distribution mechanism under SAL 2006 was inefficient. Of note, Ochuodho et al. (2016) used a global dynamic multiregional computable general equilibrium (CGE) models to assess economic effects of SLA 2006, which is the first study using the CGE approach to study the lumber trade dispute.

Moving beyond welfare analysis, van Kooten (2002) employed the concept of forest rents and methods of rent capture to evaluate the best policy option for Canadian lumber producers, and revealed that the U.S. lumber demand, Canadian lumber supply and transportation costs primarily determine the level of optimal export quota. Similarly, Kinnucan and Zhang (2004) and Parajuli et al. (2016) studied the optimal aspects of an export tax for Canadian lumber flows to the U.S. While Kinnucan and Zhang (2004) defined the optimal export tax rate as a reciprocal of the excess demand elasticity in the U.S., Parajuli et al. (2016) revealed that the primary variables in the optimal softwood lumber export tax include marginal costs of lumber production in Canada and the capacity of U.S. lumber producers.

3. Theoretical framework

3.1. Countervail and anti-dumping duty

To examine the welfare implications of CVD and AD duties on Canadian exports of softwood lumber to the U.S., consider Fig. 1. Let the domestic supply and demand for lumber in Canada be represented by S_{CAN} and D_{CAN} , with the U.S. domestic demand and supply represented by S_{US} and D_{US} . Ignoring other countries for the moment, the international market is represented in panel (b) with the U.S. excess demand function (ED_{US}) representing the difference between U.S. demand and U.S. supply for prices below the U.S. autarkic price, and the Canadian excess supply curve (ES_{CAN}) is given as the difference between Canadian supply and demand for prices above the Canadian domestic autarkic price. Under free trade, the domestic price in Canada and the U.S. is equal to the world price, P_W , with Canadian exports equal to U.S. imports, resulting in softwood lumber trade equal to $q_1 = x_2 - x_1 = m_2 - m_1$.

A duty of rate t imposed by the U.S. on Canadian softwood lumber results in a new excess supply curve for Canada, ES'_{CAN} , driving a wedge between the price exporters in Canada received and the price importers in the U.S. pay. As a result, the price of softwood lumber in the U.S. rises to $P_{US} > P_W$, resulting in improved domestic production from m_1 to m_3 , and a decline in domestic consumption from m_2 to m_4 . Imports thus decline to $m_4 - m_3$. As a result of the duty, U.S. producers gain area a , and consumers lose area $a + b + c + d$. The consumer loss is partially offset by an increase in government revenue in the amount of area $c + e$, leading to a net economic effect in the U.S. of $e - b - d$. Since the U.S. is a large importing country, it is assumed that CVD and AD duties could affect the price of softwood lumber abroad, leading to a decline in the Canadian price to $P_{CAN} < P_W$. This elicits area e , and thus makes it possible for the U.S. to experience improved net economic welfare associated with imposing a duty if $e > b + d$.

¹ The prevailing random lengths lumber composite price in 2014 exceeded the price trigger to enable export charges under SLA 2006. See Johnston and van Kooten (2017) for more details.

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