The Canada-US Softwood Lumber Dispute, Phase 4: Location Adjustments by BC's Lumber Firms

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Abstract

The Canadian-US softwood lumber dispute began in the early 1980s when US interests claimed Canadian exports were unfairly subsidized. This paper assesses recent (post 2001) spatial implications of the dispute for firm behaviour in BC's lumber industry, especially with respect to in-situ adjustments and geographical expansion. It is argued that the costs and uncertainties associated with the dispute have helped redefine the 'rules of the game' for BC's established sawmills. Yet existing sawmills, whether controlled by large or small and medium-sized firms, remain strongly focused on the US market and product innovation away from commodity lumber is modest. However, although not the only factor, the trade dispute has facilitated changing investment priorities by the largest firms, all BC-based, to the US.

Keywords: Softwood lumber, Canada, British Columbia, location adjustment, lumber firms.

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Introduction

The Canada-US softwood lumber dispute began in the recession of the early 1980s and has been unusually long and acrimonious, given that the combatants share the world's largest bilateral trade, are strong free trade proponents , and lumber was traded on a free trade basis for several prior decades following GATT's formation in 1947. The dispute is conventionally classified in four phases. Phase 1was stimulated by US lumber interests that organized themselves as the Coalition for Fair Canadian Lumber Imports (CFCLI) in 1981 to claim that Canadian lumber exports are unfairly subsidized. This claim was rejected by the US government in 1983. However, the dispute was rekindled as Phase 2 when the CFCLI effectively insisted on a Memorandum of Understanding (MOU) in 1986, a five year agreement that restricted Canadian lumber exports to the US, as a condition for the 1989 Free Trade Agreement (FTA) between Canada and the US, and the 1994 North American Free Trade Agreement (NAFTA). Phase 3 began immediately on MOU's expiry in 1991, to be temporarily settled by the 1996 Softwood Lumber Agreement ((SLA) that again limited Canadian lumber exports. Canadian interests hoped the 1996 SLA would end the dispute. Instead, levels of acrimony increased and with the termination of the 1996 SLA in 2001 'Phase 4' began. The US government immediately severely penalized Canadian lumber imports before joining the Canadian government in the 2006 SLA, originally projected as a seven year agreement and since extended to 2015 (and likely to be extended again). This paper addresses Phase 4's locational implications for the British Columbia's (BC) lumber firms. The failures of the trade dispute settlement mechanisms (DSM) established within the GATT and by the World Trade Organization (WTO) on its formation in 1995 to resolve the softwood lumber dispute are discussed elsewhere (Hayter and Edenhoffer 2014).

The Canada-US softwood lumber dispute has generated a substantial literature. Following Percy and Yoder's (1987) early insightful analysis, economists have focused on its aggregate national-scale, trade-distorting effects, especially with respect to the 1996 SLA, consumer and producer welfare implications, and its longevity (Cashore 1997; Gulati and Malhotra 2006; Nagubadi and Zhang 2006; Zhang 2001, 2007). The dispute's legal aspects, especially in relation to Phase 4, have also been investigated in-depth (Gagne and Roth 2008; Kukucha 2005; Niquidet 2008; Quayat 2009). However, as Thorpe and Sandberg (2007) note, with few exceptions (Hayter 1992), the spatial implications of the dispute for firm behaviour and regional and local development, have not received attention. This paper addresses this neglect with respect to Phase 4, the most recent phase of the dispute, focusing on BC, the dominant provincial lumber exporter.

Conceptually, our discussion emphasizes how the dispute has changed the 'rules of the game' (North 1990) for accessing the major market of BC's lumber firms in terms of explicit costs, restrictions and uncertainty. For BC's exporters the origins of the dispute, its longevity, the contents of the SLAs and the escalation of the dispute during Phase 4 were not anticipated, at least not fully. Indeed, from the BC lumber industry's perspective on free trade, the imposition of trade barriers and associated uncertainties, through political interference has been 'perverse'.

Empirically, this paper examines the recent implications of the trade dispute, since the onset of Phase 4, for location adjustments made by the largest and several small and medium-sized corporations between 2001 and 2010, at existing sites and through geographical expansion. In terms of information sources, the study relies on 18 personal interviews with mill managers based in four regions of BC, and annual reports of the four largest corporations. The basic questions motivating the survey focused on how BC's (surviving) lumber firms responded to the trade dispute. Has it encouraged them to diversify sales away from US markets and to innovate products that do not face US restrictions? Have they sought to modernize and reduce costs to offset marketing barriers to the US? Have they become more hesitant to invest in the province at all? Or have they simply 'hung-on'? Answering these questions is not straightforward. After all, the implications of the trade dispute for location adjustment are interwoven with resource cycle dynamics. Thus since the 1980s provincial harvest levels have plateaud and been influenced by environmental conflict, aboriginal land claims, and a pine beetle epidemic while market conditions themselves fluctuated widely (Edenhoffer and Hayter 2013). Nevertheless, market performance ultimately defines success or failure for business firms, and the softwood lumber dispute fundamentally changed access conditions to the major market of BC's lumber firms, a change deepened and cemented in Phase 4. Moreover, the ('surviving') case study firms in this paper fully maintained wood supplies for their operations via control over long-term timber leases, purchases at timber auctions, and acquisitions. Our questions probed the various supply and demand conditions affecting the case study firms while requesting respondents to specifically judge how the trade dispute had affected locational adjustments. These judgments cannot be statistically quantified. However, a firm- and mill- level perspective helps understand decision-making variations and options that cannot be inferred from more aggregated analyses of trade patterns while drawing on more recent information than is often available in statistically-based studies (Krumme 1969).

The rest of the paper first briefly elaborates on why the lumber dispute has created costlier and uncertain rules for accessing the US market by BC firms. Second, the paper examines the nature of location adjustments at new and existing sites by BC's lumber firms.

The Perversity of the Canada-US Softwood Lumber Dispute

Trade disputes between Canada and the US are as old as Confederation, and lumber exports from Canada had been restricted before the present contretemps, notably in the 1930s. Following World War 2 and consistent with the GATT, however, Canada's resource exports to the US rapidly became organized on a continental free trade basis. In the 1970s Canadian concerns over free trade became focused on implications for central Canadian manufacturers.

Thus proponents emphasized the stimulus of free trade arrangements to competition and innovation (Safarian 1979) while critics argued there would be widespread closure of less efficient American-controlled branch plants and domestic firms in secondary manufacturing serving Canadian markets (Britton 1998). In BC this debate seemed remote. Indeed, Shearer et al.'s (1971) acclaimed study declared that free trade with the US offered little or no threat to BC as its main industries, such as softwood lumber, had evolved rapidly in recent decades according to its principles. Extensive US control of BC's forest industries seemingly institutionalized this view.

Shearer et al.'s (1971) reality-based optimism was turned on its head 10 years later. Thus the lumber dispute originated in the deep recession of the early 1980s when housing demand and prices collapsed in North America, and micro-computer generated technological change started to take hold. In both countries, the lumber industry experienced massive layoffs, plant closures, and corporate losses. In the US, a group of sawmill firms formed the CFCLI to argue that their problems were caused by Canadian imports that were subsidized by low (below market value) stumpage rates (or taxes) charged by provincial governments for timber harvested on Crown lands. (In BC 90% of provincial forests are on Crown land. The CFCLI's goal is to restrict Canadian lumber imports. Its initial attempt in this regard (Phase 1) was unsuccessful as the USDC rejected the CFCLI's countervail plea in 1983, accepting Canadian industry arguments that its exports were not subsidized. Canadian relief was not to last.

Ironically, the Canadian government's decision in 1985 to negotiate a free trade agreement with the US stimulated the CFCLI to establish protectionism for softwood lumber as a pre-condition. Since then, in the three subsequent phases of the dispute, periods of squabbling over Canadian exports have been settled only by political intervention by the Canadian and US federal governments in the form of the MOU of 1986 and the SLAs of 1996 and 2006 (Table 1). Each agreement has imposed different costs and restrictions on Canadian lumber exports that have included options from which provinces can choose, and comprised elements that have dismayed Canadian industry. The quota elements of each agreement, prominent in the 1996 SLA and incorporated in the 2006 SLA, have complicated governance since export allocations have to be agreed on among provinces, and then among firms within provinces. Following each agreement there have been claims by US interests of Canadian violations leading to further dispute settlement. Each agreement has featured termination dates that the Canadian side erroneously believed would mean the end of the dispute in 1991 and (especially) 2001. Moreover, in each agreement the CFCLI achieved its goals of restricted, controlled Canadian access to US lumber markets.

With reference to Phase 4, the re-engagement of protectionist measures by the US was especially disappointing to Canadian interests. In BC in particular the provincial government had significantly raised stumpage charges and introduced comprehensive environmental legislation designed in part to appease American concerns that Canadian governments were pricing publicly owned timber at below market value. These and other changes to forest policy, however, had no effect on US attitudes. Indeed, Phase 4, which began two days after the expiry of the 1996 SLA in 2001 when the CFCLI petitioned the US Department of Commerce (USDC) to re-introduce protectionist measures, marked

TABLE 1: The Four Phases of the Canadian-US Softwood Lumber Dispute

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Phase 1: 1981-1983

CFCLI formed in 1981 to petition US for restricting the import of Canadian Lumber, claiming that low stumpages (timber harvesting taxes) constitute a subsidy. Canadian industry, represented by the Council of Forest Industries (COFI) successfully counter this accusation and emphasize that timber pricing in Canada reflects costs and risks of harvesting and distribution costs to markets. In 1983 US Department of Commerce (USDC) rejects countervail position.

Phase 2: 1983-86

CFCLI, led by Senator Max Baucus, is able to impose protectionism against Canadian lumber imports as a condition for approval by Congress for a free trade deal requested by Canada in 1985. After failing to find resolution at GATT, the respective Federal Governments sign a five-year Memorandum of Understanding (MOU) in 1986 that establishes a 15% tariff on Canadian lumber imports. Against Canadian industry's advice MOU allows this tariff to be reduced if stumpage levels (which affect all production) are increased. MOU further recognizes US oversight on Canadian forest policy that remains to this day. MOU also helps inspire the development of a trade dispute mechanism (TDM) in the Canada-US FTA in 1989 and subsequently in NAFTA (1994).

Phase 3: 1991-2001

Canada legally terminates MOU, and hopes dispute is over. Instead US government self-initiates countervail action, CFCLI claims Canada's log export restrictions are a subsidy, and USTR threatens tariffs. The case is taken to GATT and its successor the WTO, and the FTA's trade dispute panels. CFCLI and USDC rejects the panel's decision, US rules governing subsidies are changed, and tariffs imposed on Canadian lumber imports. The conflict is resolved by the five-year Softwood Lumber Agreement (SLA) of 1996 established export quotas on Canadian lumber exports to the US that were allocated among four leading provinces and then by firms within provinces (based on 1995 figures). The overall quota was 14.7 billion board feet with penalties of $50 and $100 per 1000 board feet. A bonus feature allows exports if an agreed upon trigger price is reached.

Phase 4: 2001-

Canadian hopes that the dispute is over on expiry of the 1996 SLA are immediately dispelled. See text for details.

Source: Authors' compilation

a significant escalation of the dispute in several ways. First, in response to this petition in 2002 the US International Trade Commission (ITC) imposed countervailing tariffs and, for the first time in the dispute's history, an anti-dumping duty. Combined these taxes amounted to the remarkably punitive level of over 27% of lumber export values, much higher than previous levels of protection. By 2006 Canadian exporters had paid over US$5 billion in taxes charged by the ITC. Second, the costs and scale of the squabbling between the combatants increased significantly and centered around 26 separate legal cases in five years (Quayat 2009). Third, the agencies involved in Phase 4 were more diverse than in the 1980s when the main parties were industry associations and national governments. In the 2000s, the formal, legalistic dispute settlement mechanisms (DSMs) of the WTO and NAFTA had become involved, as had an American court. Indeed, with respect to the latter, Canadian firms and the government, in an unprecedented action, successfully argued in a US court that the Byrd Amendment, passed by Congress and which stated that the US could retain duties collected regardless of their illegality, violated US trade law. Fourth, the CFCLI's original charge that Canadian timber stumpage was too low became more ideological emphasizing that public ownership of forests inherently meant subsidization. The implication of this criticism is that only the privatization of Canadian forests would (potentially) suffice as a solution. Last, the USDC, that had been critical of the CFCLI in 1983 for its protectionist stance (Percy and Yoder 1987), changed its tune to become its unequivocal supporter, a turnaround strongly influenced by Max Baucus, a powerful Senator from Montana since 1978, and who has led the CFCLI cause (Cashore 1997; Zhang 2007).

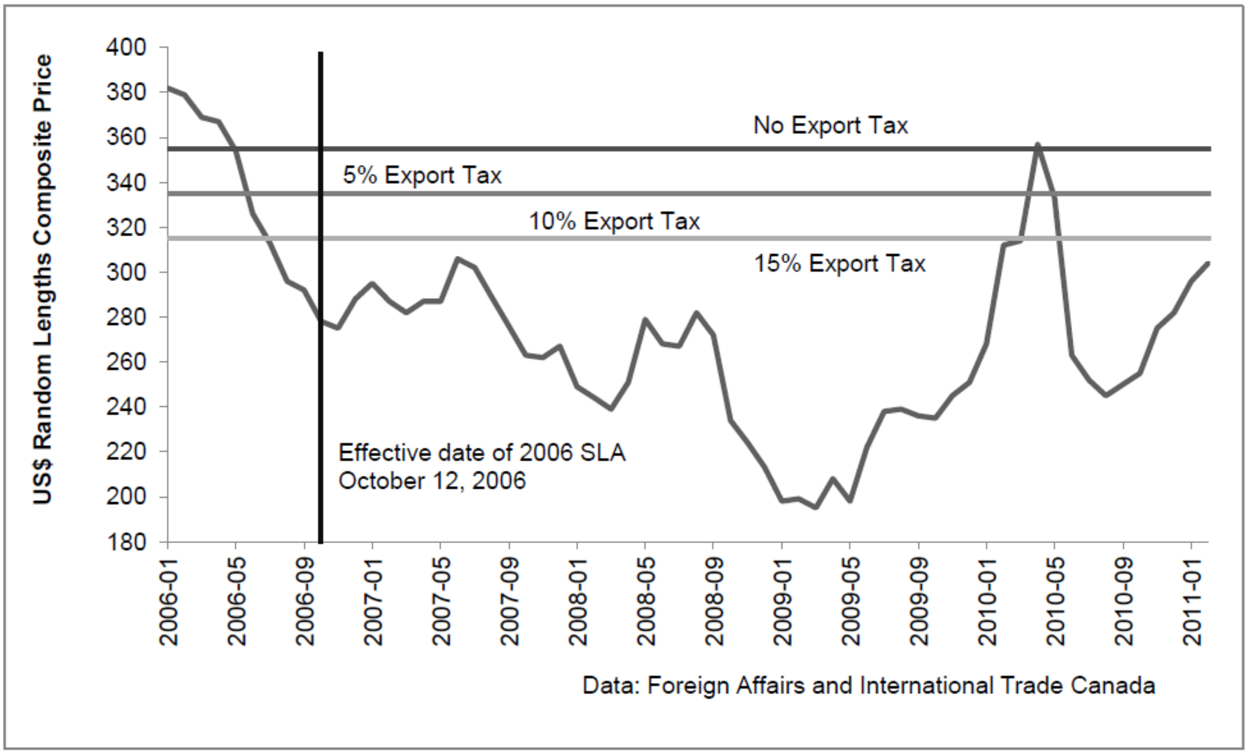
To an important degree the durability of the softwood lumber conflict is rooted in the CFCLI's single-minded focus, Baucus' leadership, and the power of lobbies in the US system of government (Cashore 1997). The CFCLI reflects a classic lobby: the benefits its members gain from its activities are substantial while costs, in the form of higher US housing prices, are spread thinly, not encouraging much opposition, even though in total consumer welfare losses have been greater than lumber producer gains (Gan 2006; Zhang 2001). Further, as the world's superpower, the US government has not felt especially compromised by (eventually) supporting the CFCLI lobby or fearful of Canadian retaliation (Hayter 1992; Hayter and Edenhoffer 2014). In contrast, the Canadian government has always been concerned by its wider relations with the US, not even willing to encourage sympathetic voices within the US, such as lumber wholesalers and consumer groups.

Overall, Phase 4 was expensive, convoluted, and rancorous, fuelled by US's unilateral action to collect punitive duties and taxes from Canadian firms. The dispute was taken to the WTO but as the conflict intensified, as Quayat (2009) notes, a negotiated settlement and the refund of these funds became Canada's main, rather limited objective of litigation and negotiation. In July 2006, the WTO rejected the USITC's claim of threat, as well as its method of calculating duties, and ruled completely in favour of Canada, further recommending that the US should reimburse the monies they had collected since 2002. The USITC agreed. However, immediately prior to, and preemptive of, the WTO's decision, the Canadian and US Federal Governments negotiated the 2006 SLA that imposed a combination of export taxes and/or quotas on Canadian exports and required the US to return to Canada only 80% of the tariffs and duties illegally collected in the previous six years. Of the $1 billion in duties retained by the US government half were awarded to the CFCLI. Provinces could choose either Option A (export tax based) or Option B (quota based); BC (and Alberta) selected Option A in which a 5% export tax kicks in when the price of lumber is US$355 per 1,000 bf and increases to 15% as the price drops to $315 (SLA 2006: Annex 7A). If 'trigger volumes' are reached an additional export tax is paid. Under Option B, an export tax is triggered once the allocated share of US consumption is reached.

From Canada's perspective, the federal government claimed that the 2006 SLA had restored 'certainty' in exporting lumber to the US; successfully retrieved most of the duties collected by the US between 2002 and 2006; export taxes would stay in Canada; and the favourable (to Canada) WTO decisions would only have been contested again. However, these views were opposed, and the vote in Canada's parliament on the 2006 SLA was only narrowly won by a federal minority government. Industry also had mixed feelings. Thus several major lumber producing companies such as the BC-controlled Canfor, who's former CEO David Emerson had become Canada's Minister of International Trade in charge of the dispute portfolio, and the American owned Weyerhaeuser and Pope and Talbot supported the federal government's focus on making a deal, and recouping the duties collected by the US. Other Canadian firms wanted to keep fighting, encouraged by the recent important victory at the WTO, and knowledge that the USITC ruling was going to be favourable. Yet with a history of American non-compliance and evasive behaviour to previous rulings– recognized by American as well as Canadian legal experts (e.g. Macrory 2002; Quayat 2009) – the WTO decision may well have been disputed or circumvented. Moreover the 2006 SLA surprised Canadian industry by allowing the US to keep $1 billion of illegally collected duties, and worse, half would go to the CFCLI, Canadian industry was literally funding their sworn enemy, a bitter pill indeed.

Implications for BC's Lumber Industry

Whether or not the 2006 SLA was in the best Canadian interests, the dispute has imposed costs and uncertainties on Canadian industry. In BC, the agreement featured an export tax that was dependent on a composite price for softwood lumber that basically imposed a double whammy on exporters as the tax increases as prices fall in a four-tiered system. Thus no export taxes are incurred when the softwood lumber price is higher than US$355 per million board feet (MMBF). The tax is 5% if the price is between US$336 and $355 and increases to 10% if prices are between US$316 and $335, and to 15% when softwood lumber prices drop to US$315 (Figure 1). As it happened, the introduction of this 4-tiered tax coincided with the crash in the US housing market which resulted in sharp decrease in demand – and prices – for softwood lumber. Indeed, from October 2006 through February 2011 there was only one month when BC firms did not have to pay an export tax and for most of this period prices were lower than US$335 so that the full 15% export charge applied. By July 2008 BC firms had already paid export duties of $540 million, close to the duties they paid prior to the SLA when prices were high (Parfitt 2010). Meanwhile, CFCLI invigilation of Canadian practices remains acute. The 2006 SLA requires grievances to be arbitrated by the London Court of International Arbitration, and the CFCLI has since won damages from Ontario and Quebec firms for exceeding quota. However, its complaint against the BC's government for reducing stumpage on pine-beetle damaged wood was rejected (Gordon 2011). For BC's lumber industry, Phase 4 of the trade dispute has been massively disruptive.



*The export tax depends on the composite softwood lumber price in a four-tiered system; the lower the price the higher is the tax that applies.

FIGURE 1: Lumber Prices in Relation to Export Tax 2006-2011*

The implications Phase 4 had for the behaviour of lumber firms is complicated by resource cycle dynamics. In general terms, during the early 1980s BC's forest economy reached the so-called 'plateau stage' of the resource cycle when 'fall-down' occurs, and harvesting levels of old growth forests start to level-off and decline, and second growth timber cannot compensate for the lost supply (Edenhoffer and Hayter 2013; Clapp 1998). In practice, BC's harvest levels have fluctuated considerably around a declining trend and the fall-down was delayed by the temporary upsurge in harvesting permitted by the provincial government to log wood damaged by the pine beetle in the early 2000s before the wood became commercially non-viable. A more rapid decline in harvesting levels is yet to occur, but will likely start soon. In the meantime, the closure of old, inefficient mills has been a major form of adjustment by industry to changing fibre supply and investment in very large, automated mills (Edenhoffer and Hayter 2013). Indeed, since 1980, 68 large-scale sawmills have closed throughout the province, and by 2009, jobs in sawmilling had declined from 37,564 to 12,043. Automation and increased wood recovery ensured that mill capacity has not declined to the same extent while the building of several super sawmills to exploit wood damaged by the pine beetle has placed additional pressure of the profitability of established mills and jobs.

In tandem there has been a shakeout of large corporations and, excepting Canfor, now Canada's largest lumber producer, the large integrated companies that dominated BC's forest economy prior to the 1980s have downsized or left the province. A few large firms, notably Canfor, Interfor, Western Forest Products (WFP), West Fraser and the privately held Tolko dominate BC's lumber production, collectively accounted for almost 8,500 MMBF or 71% of provincial lumber production in 2008. However these firms are less integrated, less foreign owned and have less control over timber harvests compared to their pre-1980s' predecessors. Small firms in secondary wood processing, manufacturing products such as engineered wood, log homes, doors and windows, and furniture, have expanded, but this growth has been concentrated in the Vancouver metro region and the rapidly urbanizing Okanagan valley, and has only partially compensated for overall declines in jobs or production.

After 1980 rationalization of BC's forest industries was to be expected. With the maturation of the resource cycle, timber supply costs have increased, the quality and accessibility of timber has declined and other regions have become more competitive. Yet, these deteriorating supply conditions have been compounded by the increased costs and uncertainties of accessing their most important market, in which Phase 4 is the most recent, punishing and volatile episode. Overall, BC's lumber production is about 80% export-oriented, with the US easily the dominant destination (Table 2). Between 2000 and 2006, US tariffs on Canadian exports were offset by the extraordinary expansion of US housing markets. But since the 2006 SLA the US housing market crash has undermined BC's exports and imposed export taxes, while reimbursing illegally collected taxes from the previous five years (Figure 1). Increases in the dollar exchange rate has further penalized BC exporters whose costs are in Can$ and revenues in US$.

What have firms done with these reimbursements? Did they have location priorities? How are existing factories coping with the problems of exporting to the US? The rest of this paper sheds light on these questions with particular emphasis on adjustments made by leading firms at the corporate and factory levels. Insights from adjustments made by SMEs are also offered. Information was obtained from corporate annual reports of the four largest firms, and from personal interviews conducted in 2009 with factory managers or owners of 18 sawmills including 8 owned by these four and two other large forest firms, and 10 controlled by SMEs. The SMEs had total sales (2008) that did not exceed Can $200 million while the large firms had sales of at least Can$ 500 million. The sawmills are located in four sub-regions of BC, namely the south-western coastal region (CO), the Kootenays in the south-east (SE), the Okanagan region of the south-central interior (OK), and the north-central interior region (CI). Respondents were asked questions concerning employment, production levels, product-mix, sales, timber supplies, investment and technical changes, perceptions of the 2006 SLA, their responses to the dispute, if any, and in general how their operations had changed from 2001 to 2006 and 2006 to 2008. Note that the problem posed by pine beetle damage was primarily limited to the CI in this survey.

TABLE 2: British Columbia Lumber and Export Production 1999-2010

Year	Lumber Production Total (000 of m^3)	Export (000 of m^3)	US Sales (%) (000 of m^3)	Domestic Sales (%) (000 of m^3)
1999	32,397	25,508	20,032 (61.8)	6,889 (21.3)
2000	34.346	25,216	19,625 (57.1)	9,130 (26.6)
2001	32,606	26,299	21,444 (65.8)	6,307 (19.3)
2002	35,501	28,107	23,192 (65.3)	7,394 (20.8)
2003	36,052	28,995	23,990 (66.6)	7,036 (19.5)
2004	39,951	32,112	26,611 (66.7)	7,767 (19.5)
2005	41,129	33,298	28,660 (69.9)	7,715 (18.8)
2006	41,198	32,827	27,683 (67.4)	8,224 (20.0)
2007	36,811	28,250	22,981 (62.7)	8,427 (23.0)
2008	28,263	21,207	15,829 (56.1)	6,985 (24.8)
2009	22,953	17,822	11,861 (51.6)	5,135 (22.4)
2010	26,831	20,847	12,279 (45.3)	6,248 (23.1)
2011	28,414	22,836	11,193 (47.6)	
2012	29,164	24,163	12,455 (48.2)	
2013	30,070	25,881	13,604 (53.0)	

Sources: BC Statistics, BC Economic and Financial Report 2013

Shifting Investment Priorities from BC to the US

Significantly, Phase 4 has witnessed a reduction of US MNC control of BC's lumber industry, and increased investments by large Canadian owned lumber firms in the US (and elsewhere). Declining MNC interest in BC's forest sector is not new (Hayter 2000; Edenhoffer and Hayter 2013). In the aftermath of the severe 1980s recession, and with the maturing of the forest resource cycle in BC, several major US-owned MNCs, including Crown Zellerbach Canada (CZC), British Columbia Forest Products, Rayonier and Weldwood, divested their operations in the province. It is unlikely that the softwood lumber dispute played more than minor roles in their withdrawals. CZC's sale, for example, provided a substantial cash injection ($600 m) to its parent company that was restructuring its US operations. More recent exits by US firms from BC's lumber industry, however, are tied to the softwood lumber dispute. Weyerhaeuser, a giant US-based MNC, that first invested in BC in the mid-1950s, and became BC's largest corporation with the takeover of MacMillan Bloedel in 1999, argued strenuously for the 2006 SLA. Despite claims to the contrary, after receiving $344 million in escrow as a result of the SLA, Weyerhaeuser then closed down 9 of its 10 lumber mills in BC in the next two years (and sold its pulp mill). In a state of financial crisis, the US-owned Pope and Talbot similarly supported the 2006 SLA and sold its BC sawmills to Interfor.

Moreover, the biggest BC-based lumber firms, namely Canfor, West Fraser, Tolko, WFP, and Interfor have shifted their investment focus to the US during Phase 4. While West Fraser is American controlled, by a Seattle-based family, its forest operations have been concentrated in BC, and Canfor, WFP and Interfor are Canadian. All these firms expanded production in BC from 2001 to 2006, with increasing emphasis on Interior mills (Table 3).

As the US market crashed in 2006, production by these firms in BC declined, especially in the coastal region where 2009 production was less than 10% of corporate totals (down from almost 20% in 2001). In tandem, these four corporations increased production outside of BC, especially in the US. Thus between 2001 and 2006 these firms doubled their dependence on US production from just less than 5% to over 10%, and by 2008 this share had further increased, although it slightly declined in 2009 with plummeting US markets. Nevertheless, the sharp rise in US production after 2006 was facilitated by the one-time opportunity for investment provided by the return of the duties collected and held in escrow (2002-6). Canfor, for example, had concentrated its entire operating facilities in BC and Alberta since its start-up in the late 1930s, until 2003 when it purchased a Quebec mill, and in 2006, following the receipt of $717m in returned duties when it acquired three mills in the US for $181m (followed by another US acquisition in 2007). Meanwhile, West Fraser received $387m in returned duties and in 2007 acquired 13 sawmills in the US for $391m, increasing their US production base by fourfold. Interfor also established production facilities in the US (specifically the Pacific Northwest) while using its escrow money, $97m, to acquire mills in BC's interior and help it shift from BC's coast. WFP has used its $110m escrow money to pay down debt and consolidate in BC. The privately owned Tolko does not disclose production figures, and has used its escrow money to invest in products not covered by the SLA 2006 (especially oriented strand board and engineered wood products), and to invest in Alberta.

For existing mills, the problems of accessing a collapsed US market posed challenges of adjustment and survival.

In-situ Trade and Product Diversification

To respond to the higher costs and declining US markets, BC's sawmills have pursued various adjustment strategies with the target to improve efficiency, diversify their product line and seek new markets. To assess these strategies, a distinction is made between the eight factories owned by large firms and 10 factories that are owned by small and medium-sized firms (SMEs) that employed less than 500 people in single or multiple facilities. For 2001 and 2008, the production focus, output and employment levels and US export shares are provided for these firms (Table 4).

TABLE 3: Geographic Distribution of Lumber Production Among Four Largest BC Firms

		2001	2006	2008	2009
Canfor	BC Interior	2,070.1	4,124.8	2,964	N/A[1]
	Alberta	190.2	217.2	216.2	N/A[1]
	Quebec	0	117.8	199.9	N/A[1]
	US	0	337.6	388.6	N/A[1]
	Total	2,260.3	4,797.4	3,767.8	3,034.3
	BC %	91.6%	86%	80.4%	N/A
WFP	BC Coast	562[2]	1,000	767	608
	Total	562[2]	1,000	767	608
	BC %	100%	100%	100%	100%
Interfor	BC Coast	533	466	214	184
	BC Interior	133	286	76	162
	US	0	426	208	243
	Total	666	1178	498	589
	BC %	100%	63.8%	58.2%	58.8%
West Fraser	BC Interior	1,441	2,952	2,549	2,034
	Alberta	290	845	840	849
	US	272	389	1,570	1,269
	Total	2012	4,186	4,959	4,152
	BC %	71.9%	70.5%	51.4%	48.9%

[1] In 2009 Canfor did not reveal individual sawmills or geographical production
[2] Numbers refer to 2002 as 2001 data was not available

Source: Firm's Annual Reports

In 2001, the six factories owned by large corporations that were located in the interior were large dimension lumber mills strongly focused on US markets. The two coastal mills (CO 1 and CO 2), both owned by the same firm, had a more diversified, higher value product range and Japan was their main market. With higher wood costs than interior mills CO 1 and 2 had diversified away from dimension lumber and US markets in the 1980s and 1990s. In 2008, with one modest exception (OK 3), these large mills had retained or increased production levels, in two cases significantly. However, with one notable exception (OK 1), employment levels have been reduced, in most cases substantially. Again excepting OK 1, these large mills reveal strong tendencies to shift away from dependence on US markets. Thus for two of the six interior mills (CI 1 and 4) Canada replaced the US as their main market in association with a processing specialization on pine-beetle damaged wood, and increased scale of output. In addition, for the other three interior operations US markets were less important in 2008 compared to 2001. In the 'exceptional' case of OK 1, substantial increases in production and employment while maintaining a US export focus, occurred as a result of its US parent closing eight sawmills in BC and consolidating production at this location.

TABLE 4: Selected Characteristics of Interviewed Sawmills in British Columbia, 2001 and 2008

Mill	**Focus 2001-2008**	**Changes in product line**	**% US 2001-2008**	**Production 2001-2008**	**Employment 2001-2008**	**Main market 2008**
Eight Factories of Large Firms						
CI 1	DL - DL	specialization on beetle wood	60 - 75	260 - 340	400 - 320	CAN
CI 3	DL - DL	no change	85 - 55	200 - 200	250 - 229	US
CI 4	DL - DL	specialization on beetle wood	95 - 35	240 - 250	200 - 190	Diversified (CAN, US, Asia)
CO 1	DIV - DIV	no change	25 - 25	120 - 120	190 - 170	Japan
CO 2	DIV - DIV	change of specialization focus	20 - 12	80 - 130	390 - 194	Japan
OK 1	DL - DL	no change	97 - 85	130 - 370	185 - 225	US
OK 3	DL - DIV	diversification	52 - 44	250 - 200	200 - 150	US
SE 2	DL - DIV	higher product value	85 - 60	150 - 150	260 - 130	US
Ten Factories of Medium-sized Firms						
SE 1	DIV - DIV	change of flexible focus	15 - 5	35 - 35	140 - 165	BC
CO 3	CC - CC	no change	15 - 12	150 - 150	400 - 400	Japan
SE 4	SP - SP	no change	80 - 20	30 - 50	200 - 200	CAN
CO 4	DIV - DIV	no change	85 - 85	120 - 70	220 - 150	US
SE 3	DL - DIV	diversification	85 - 10	110 - 55	200 - 130	CAN, Japan
OK 4	DL - DIV	diversification	75 – 0 (closed)	70 – 0 (closed)	375 – 0 (closed)	Canada (2007)
OK 2	DIV - DIV	no change	60 - 45	90 - 145	280 - 350	US
CO 5	SP - CC	diversification	25 - 50	30 - 50	55 - 110	US
CI 2	SP - SP	diversification	55 - 60	25 - 25	95 - 95	US
OK 4	SP - SP	diversification	80 -20	25 - 14	105 - 65	Canada

Source: Fieldwork 2009. Note: CO refers to southern coastal region; SE the south-east (Kootenay) region, OK to the south-central Okanagan region, and CI to the north-central interior region.

Since 2001, especially since 2006, managers of these large sawmills expressed great difficulties in achieving profitability, and the central theme underlying their resilience has been to emphasize productivity improvements that the firms measure mainly by board feet per person per man-day and the lumber recovery factor. At OK 3, the manager noted that the break-even price level for 1,000 board feet of lumber in 2009 was US$220-230 while "A couple of years ago that number would have been $260-270. We've just gotten better and better, cause we've had to. That again goes back to the SLA, it goes back to survival, we're all on survival mode now, we're trying to conserve cash, that's what it's all about." At the affiliated CI 3 its manager noted that productivity increases since 2001 have also been "significant" albeit offset by "deterioration of wood fibre due to pine beetle" (Interview, plant manager CI 3). In the case of CI 1, while the mill "has not made a consistent profit on a quarterly basis since 2007" it has focused exclusively on pine-beetle damaged wood and been committed "to be the best processor of dead wood" and "productivity has gone up: It's just amazing" (Interview, plant manager). CI 4 similarly noted that productivity improvements had been "very significant", and had been important for SE 2. Meanwhile on the coast CO 2's manager noted "we are literally in survival mode" and that "Productivity is significantly higher than it was 2001". At CO 1, a large mill that has retained its profitability in most years, productivity has increased in the last couple of years. "This mill used to run at 24-2,500 bf per man-day for years, last year we were up around 28-2,900" (interview plant manager). Indeed, (the US owned) OK 1's manager summarizes widely held view that "When the duties came out it forced Canada to become more efficient, it really did, it forced consolidation, productivity improvement, modernization. The American mills still haven't done that, one of the side effects of having duties forced on us was that it forced us to become more efficient".

Productivity gains were related to capital improvements that increased processing speeds, enhanced lumber recovery, reduced labour and/or improved waste product use. The very limited nature of product innovation was itself based on the introduction of new processes and several mills noted that they had installed machine stress rated (MSR) lumber that enhanced the quality of the product. With the main exception of railway tie exports by CO 2, these factories did not shift to exporting products to the US not covered by the 2006 SLA.

In terms of potential trade diversification while the Japanese market has declined during Phase 4, the tsunami disaster of 2011 will likely stimulate lumber exports from BC to help Japanese re-building efforts. Meanwhile, market diversification towards China is very recent, in 2008 involving just three of the big eight factories, and while developing rapidly sales, which exceeded US levels in 2011, are focused on low value commodities. As OK 3's manager stated, "China has become a really strong low grade importer in the last three months, huge. You know China was nothing two years ago, a year ago, suddenly they can't eat up enough of our low-grade", in 2009 accounting for 2-3% of the factory's sales. For CI 4, "China is buying more, they are the big one", and CO 1 does "a fair bit of business with China but typically China does not buy high-grade" while for CO 2 "China is the only opportunity that is left and you have to get the cost structure right for that". Indeed, SE 2's manager view that they "Ship a little bit to China, but do not see a major shift" reflects the situation at several factories. CO 1's manager also indicated a wider problem with developing new markets resulting from the downsizing of corporate marketing networks as part of cost-saving efforts: "It's an international business and to stay in it you need international communication, and to lose that I don't know how you do business. I think as the industry has gotten smaller we have lost that capability".

The ten SME-owned factories were generally more varied in product focus and market orientation than the 'big eight' (Table 4). However, there were similar shifts away from US markets, and perhaps more unexpectedly by the establishment of facilities in the US. Thus the three SME-controlled dimension lumber (interior) operations supplying US markets in 2001, namely SE 3, OK 5 and OK 4, substantially downsized output and jobs as Canadian markets became dominant. OK 5 was closed at the time of interview. Two other interior mills (SE 1 and SE 4) have replaced US markets with Canadian markets, the latter while increasing its diversified range of products (paneling, decking and boards), and the former while maintaining production (and increasing jobs). CO 4, a highly diversified producer of cedar products, has retained its focus on the US but reduced output (and jobs) in 2008 from 2001; in practice this mill makes initial cuts and the cedar is then shipped to be remanufactured in Washington State at an affiliated mill, initially acquired in the 1990s. OK 2 and CI 2 have also established operations in the US Pacific Northwest to which they send either logs or lumber for further processing, investments. Indeed, for OK 2 its US plant acquired in 2000 "was the answer to the US duty on softwood lumber" and now remanufactures lumber sent from the Okanagan plant. Even for SMEs, US-based operations provide flexibility in accessing markets there.

CO 5 and especially OK 2 stand out because they have substantially increased production and jobs, while US markets remain important. Both emphasize high value products, the former as a custom-cut factory and the latter through diverse, modern manufacturing capabilities, and a focus on non-dimension products and innovation. In general, the 10 SME factories increased productivity, with a stronger emphasis on product quality and differentiation than the big eight sawmills. For example, since 2003, CO 5 has introduced several 'state of the art' machines to cut small and large logs and in 2007 a "flagship" planer that "is producing the highest quality product in North America". Efforts to diversify trade away from the US have varied, however. Thus for CO 4 "The SLA did not affect the trade with the US. [CO 4] was less affected by the SLA than other firms, due to the customer base and the distribution network" while for CI 2 "our main thing right now, is getting our product into the US and cutting out the middle man in the distribution down there." Other firms emphasized developing Canadian markets. Thus for OK 2 "Exports have decreased due to economic crunch. Sold more in Canada, sell to Rona now. Went to Japan, Korea, Mexico, Saudi Arabia." (OK 2), and for SE 1 "We have been going into eastern Canada more and more over the last year" (SE 1) while constantly attending trade shows.

In general the respondents of large and small sawmills alike expressed considerable disillusionment over the trade dispute, and Phase 4 has smashed any hopes for a return to the freer trade environment that existed prior to the 1980s. The 2006 SLA was highly controversial among the respondents, evenly split for and against, with the large firms dominating the 'in favour' response. However, despite its controversial nature and divided support, all but one respondent (a SME) emphasized that Canada should not now withdraw from the SLA, thus disagreeing with Parfitt (2010). The majority also agreed that the SLA had provided 'certainty' in accessing the US market. "For mills like us, we just want to know what the rules are, because when we know what the rules are, we can work around to make it work for us. We can still find a way to reduce log costs, or production costs" (OK 4). But these new rules impose costs, and are the basis for continuing US criticism of BC forest policy. Trade and product diversification has occurred to some degree, but the scope for adding value among these firms in BC appears limited, not least because of the powerful pull of markets on these activities.

Conclusion

Phase 4 has confirmed the perverse reversal of the continental free trade regime experienced by BC's lumber firms for several decades until the early 1980s. The dispute and its political resolutions have been profoundly disappointing to BC lumber firms. In the study period for the case study mills the main in-situ responses were to increase operating efficiency and to seek out alternative markets where they could be found, including domestic ones. By 2008 hints of China's potential as a market had become apparent (and since then has developed). More innovative solutions and shifts in product-mix were not evident. Although other factors are involved, the dispute has also helped stimulate to shift investment horizons. While foreign owned firms pulled out of BC the four largest, whose operations were almost entirely concentrated in BC in the 1990s, have invested massively in the US, funded in part by funds provided to them in the 2006 SLA. These investments will ensure that the firms will serve US markets from US locations. Even SMEs established US branches over the past decade. For operations in BC the need to diversify markets and products has become more urgent. For the case study firms, the costs and uncertainties of the trade dispute basically constitute a 'discount factor' discouraging long term investments and, equally important, provide strong disincentives for long-term thinking with respect to adding value, product innovation and skill formation. It is unlikely that BC's firms have any appetite to oppose the continuation of trade restrictions when the current SLA expires in 2015.

At the same time, the trade dispute needs to be seen in the context of a broader transformation of BC's forest economy, in which commodity production is declining in favour of more diverse forest uses, both economic and non-economic. In this regard, the resource cycle dynamics of the maturity stage, the trade dispute and other conflicts, are collectively reinforcing this transformation. Indeed, while commodity production has experienced significant rationalization, especially evident when measured by job loss, there has been growth in a diverse range of smaller-scale wood processing ('value-adding') activities in BC, especially in the metropolitan areas of the province. Moreover, such growth is seen to be environmentally as well as economically sustainable. Research within industrial geography can usefully address the potential of alternative forms of employment, within and outside the forest sector, that meet these values and whether support can be provided for dispersed, specialized forest communities that have suffered the most from commodity decline.

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