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Assessing the Socio-Economic Impact of Tenure Changes in British Columbia

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1. Introduction

In this paper we evaluate the recent changes in forest policy in British Columbia in particular as they relate to changes in tenure. These changes are the most substantive made to date in terms of tenure policies anywhere in Canada. Understanding both the nature of these changes and their consequences is important for policy-makers not only in British Columbia but elsewhere in Canada that may be contemplating changes to their existing tenure systems.

We first briefly review the history of tenure within Canada and BC and how it was used to achieve economic and social objectives of provincial governments. We next outline a framework that can be used to examine different aspects of tenure and highlight the changes that took place under the Forest Revitalization Act. We then review trends within the forest industry across Canada over the past fifteen years to provide the context within which we can examine the more recent changes that have taken place within the BC forest products industry. We find there has been a significant shift towards an emphasis on cost competitiveness, driving efficiency improvements to enhance productivity across the province. One consequence has been a rationalization and consolidation of the industry, with an attendant reduction in employment. We consider to what extent these more recent changes can be attributed to the series of policy changes made over the past three years, using not only the data but also a series of interviews we conducted with representatives of key stakeholder groups. We conclude that many of the changes in tenure policies merely accelerated processes that were already being triggered by changes in the global competitiveness landscape of the forest sector. Indeed today it is the underlying economics of forest products markets that are the final determinants of industry outcomes and industry structure in the long run rather than any specific set of tenure arrangements. We recommend therefore the adoption of regional development and social policies that accommodate the inevitable transition in the forest sector while cushioning impacts in local communities.

2. The historical context of tenure

The basic principle underlying tenure in Canada is both an old and simple one. In exchange for access to Crown timber, firms are required to undertake investment to improve the value of the resource (the financial return to the Crown) and to provide employment. Wood was the engine that was used to develop the province, guided by government but funded by the private sector. The policy was successful in BC as it was elsewhere in Canada. In BC the area under long-term tenure agreements expanded enormously along with harvests, production and employment.

Conditions did not stay static, however. Government objectives changed. Changing public attitudes towards environmental issues manifested itself in increased environmental regulation governing forest practices at the operational level and affecting at a higher level land use allocations. Provincial governments across Canada moved to reduce the direct cost of managing Crown lands by shifting management responsibilities to firms in exchange for continued access to timber. Forest policies were also affected by trade disputes with the US and First Nations land claims. The tenure system, and in particular the system through which stumpage was determined, were at the heart of US trade actions against Canada. In BC, tenure allocation and control of land use were at the core of First Nations actions to assert their rights. The uncertainty created and the costs imposed by the increasing regulatory burden, US trade actions and social and legal actions taken by First Nations reduced the expected benefits of tenure holdings to tenure holders in BC.

The value of tenure rights and the incentives to invest and develop the forest resource depend on the expected benefits tenure holders expect to receive and the costs they incur. The benefits depend largely upon the products the firms can sell while the costs are a function of timber supply and other obligations incurred by firms. The challenges facing firms in BC are similar to those of other Canadian forestry firms in terms of changing markets as well as changing public expectations. However, the competitiveness of firms operating in the different regions in Canada are also influenced by the characteristics of the resource and the policy environment which do differ between provinces. In the remainder of this paper we focus on the conditions facing BC firms and policy changes that were made that were designed to adapt to changing markets and enhance the competitiveness of firms operating in BC.

Historically BC because of its proximity to the US and the quality of its timber had no problem selling into the US market (the largest forest products market in the world). However global competition has increased, as new suppliers have emerged targeting the US market. New product and process technologies have reduced the historical advantage BC firms had in producing large and wide lumber and premium pulp as new substitute products have entered the market and firms have been able to compete with existing products at lower prices. The end result has been product prices that have remained flat or trended downwards over time in BC's major markets. On the cost side, resource conditions have been deteriorating, as over time firms are moving into more difficult and costly terrains, oftentimes harvesting poorer-quality timber. The overall stumpage system in place in BC, based on product prices but not cost levels, has at times increased stumpage higher than a market with private forest land owners would have. Strong unions have resisted pressures to reduce

wages and benefits, maintaining labor cost at levels that match the highest in the world.[1] To cope with prices which increased at a slower pace than costs in the wood sector and remained flat or fell in other sectors of the forest products industry, BC producers chose to rationalize their operations by closing less efficient mills and investing in new labor saving technologies.

The changing competitive outlook for the BC forest sector

Figure 1 shows Crown timber harvests in BC over the past seven years. Harvests have fluctuated throughout the period, averaging 67.6 million cubic metres, although the long-term AAC has been revised downwards through the period. In the past two years the provincial harvest has climbed in response to the Mountain Pine Beetle outbreak spiking in 2004, and the AAC in different timber supply regions in the interior has been temporarily elevated, although this masks significant regional variations.

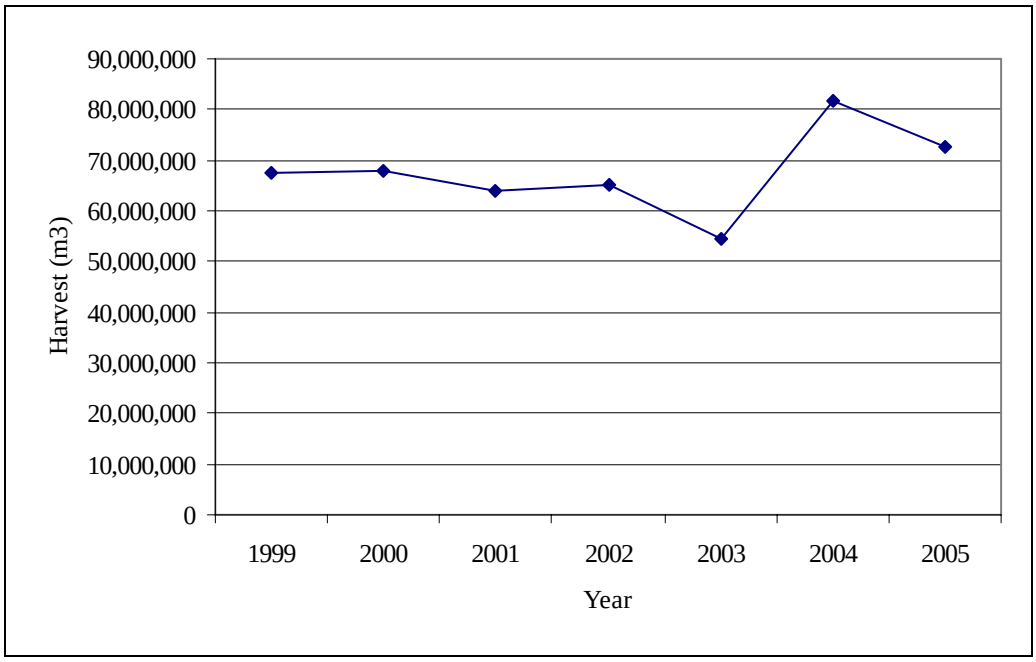


Figure 1. Crown timber harvest in BC (1999-2005)
Source: BC MOF

Strong prices in the mid-1990's for two of the most important forest products manufactured in BC, softwood lumber and pulp, contributed to record export revenues shown in Figure 2. While solid wood product prices have been high in recent years, overall export revenues have fallen by a third from their peak in 1995 after adjusting for inflation but remain higher than at the beginning of the period.2

[1] This varies by region.

[2] Other includes a number of different products including veneer, plywood, OSB, and secondary wood products.

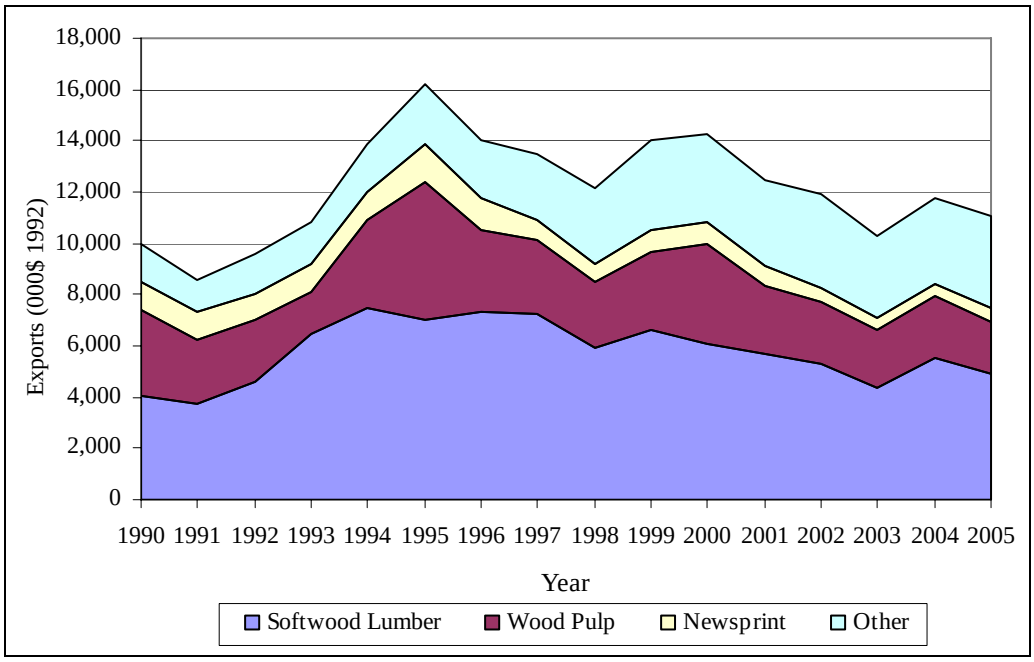


Figure 2. BC Export Revenues by Product, $000 1992=100

However this masks a downward trend in export returns. Adjusting for the higher harvest levels in the past few years, it can be seen that average export revenues per cubic metre have been steadily trending downward over time and are at levels associated with the economic slowdown of the early 1990's (this despite what can be considered relatively high solid wood prices in the past two years) as shown in Figure 3.

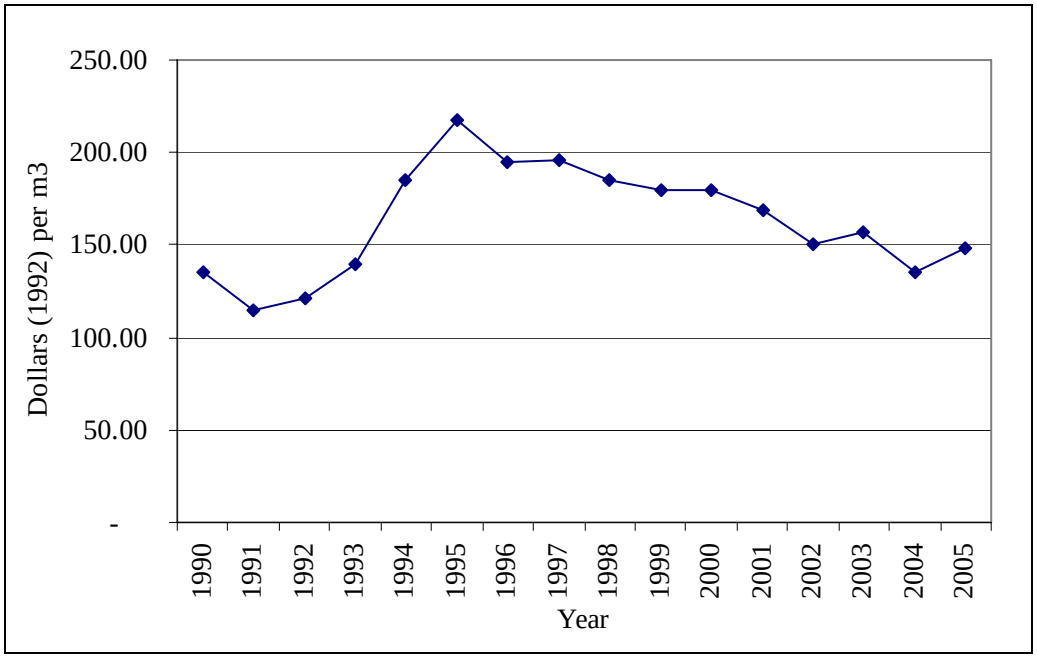


Figure 3. Export Revenues in $ per m3 (1992=100)

Average provincial revenues per cubic metre (see Figure 4) also show a similar downward trend over the past seven years. While stumpage rates were increased substantially in the mid 1990s in

response to strong lumber prices, they were substantially revised downwards in 1998 in trade negotiations with the US (see Figure 5).3

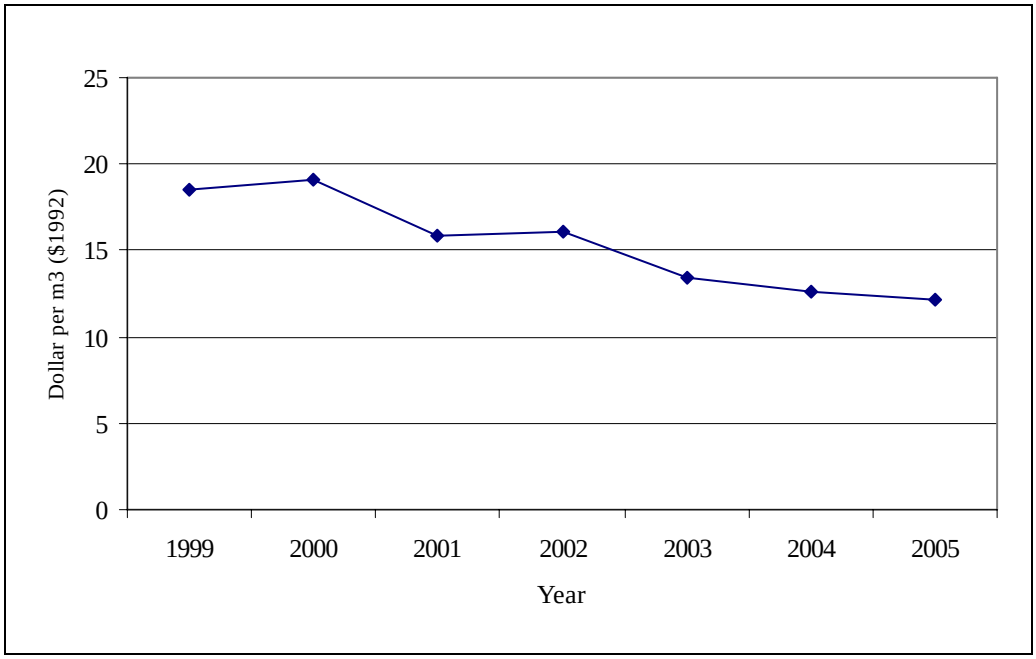
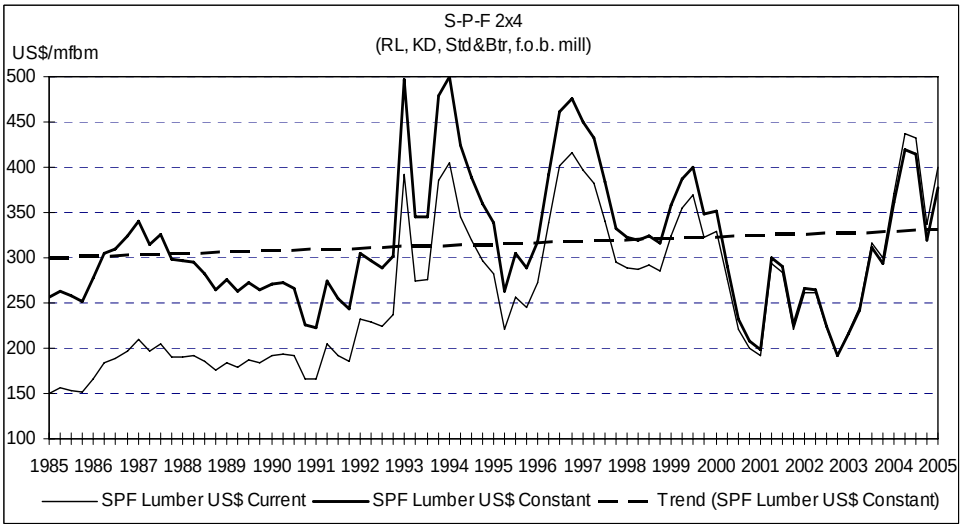


Figure 4. Average provincial revenue per cubic metre ($1992 per m3)
Source: BC MOF

Figure 5 shows average lumber prices by quarter over the period 1985-2005. The price spike due to harvesting restrictions in the first part of the 1990's is evident, as well as the increased volatility of prices since that time (exacerbated in part due to the trade actions and the uncertainty it creates). The overall trend over the period shows a slight increase, adjusted for inflation, when the price spike is taken into account but this disappears if the period prior to 1992 is dropped.



3 Part of the downward trend can also be explained by the move to MPS on the Coast in 2004 and increased use of salvage in the Interior due to the MPB. An additional factor is the appreciation of the Canadian dollar reducing mill nets.

Figure 5. Western SPF 2×4 Lumber Prices (U.S. $), by Quarter, 1985-2005
Source: Random Lengths

Table 1 shows employment in the forest industry in BC by sector. The year of peak employment in the industry was 1994-95 with employment growing in every sector in the previous few years. Overall employment then remained relatively steady until 2000 when it started to decline. However, the decline was sector specific. Employment in forestry services fell sharply between 2000 and 2002 and has remained relatively constant since (and still remains slightly greater than it was in 1990). Employment in logging has shown more variability but has been at lower levels since 2000 and fell significantly in 2004 (it is especially notable when the high harvest levels of that year is taken into account). Employment in the wood industries sector, although fluctuating, does not appear to show any downward trend to date and is at the same level as it was in 1990. The largest drop in employment took place in the pulp and paper sector where it fell by half since the year of peak employment in 1995 and is well below the level of the early 1990's. 4

4 Pulp and paper capacity has been closed in recent years with the decommissioning of individual lines at different mills and the outright closure of several mills (Gold River, the shutdown of Port Alice, and the more recent Woodfibre closure). The decrease in logging employment is more puzzling given the increase in harvests and may represent to some degree a change in statistical classification (we discus in the section reviewing in more detail changes in employment and earnings in the different sectors).

Table 1. Employment in the wood industries

Employment (in 000's)					
Year	**Forestry Services**	**Logging**	**Wood Industries**	**Paper**	**Total**
1990	6	20	47	19	93
1991	6	21	42	20	89
1992	6	20	45	20	92
1993	6	21	49	22	97
1994	8	23	50	22	102
1995	8	28	44	24	104
1996	7	25	43	23	98
1997	11	21	45	23	100
1998	9	21	44	23	96
1999	8	22	43	22	95
2000	14	22	46	18	100
2001	9	16	49	15	89
2002	7	19	44	17	86
2003	7	21	49	14	91
2004	7	15	47	12	80

Finally investments in the logging, wood industries, and paper sectors all show a uniform downward trend over the period despite the recent increase in harvest levels.

Table 2. Investment by sector in BC in millions ($1992)

Year	Logging	Wood Industries	Paper	Total
1994	631	840	1,263	2,734
1995	302	908	1,320	2,530
1996	241	701	1,029	1,971
1997	224	695	1,009	1,928
1998	323	548	712	1,583
1999	312	522	789	1,624
2000	314	485	913	1,710
2001	243	506	908	1,658
2002	198	451	672	1,322
2003	237	505	666	1,409

Given the increased competition, higher costs and expectation of increases in environmental standards, the ability of existing tenure agreements to deliver the traditional social benefits has been increasingly questioned.5 The threats to the viability of the sector has led to reassessment of the existing tenure systems and consequently to significant changes in forest tenure policies in BC. We examine these policy responses in the remainder of the paper.6

5 Examples of such reports include ones by NGO's (see, for example, Parfitt 2005 and Parfitt 2006) and government-appointed task forces addressing competitiveness that all raise the issue of the adequacy of existing tenure systems to meet current social objectives (BC Competition Council 2006).
6 Other significant policy changes include changes to the timber pricing system; this happened first on the BC Coast in February of 2004 and in June of 2006 in the BC Interior. We do not discuss these changes in this paper.

3. Investigating Tenure Changes

The property rights framework is often used to analyze tenure agreements as it emphasizes not only the economic benefits flowing from the agreements to which license holders are entitled but also the obligations such agreements entail. The most important obligations and restrictions government imposes upon rights holders fall into four categories:

- Operational controls (e.g. forest practices, cut control regulations and reforestation requirements);
- Government fees (most commonly stumpage payments);
- Processing requirements (which often include appurtenancy requirements as well as restrictions on the ability of firms to export); and
- Transferability of the agreement (is government approval required to sell all or part of it).

Operational controls directly affect the costs a tenure holder must incur as a condition of harvesting, as do stumpage costs. The costs imposed by the other conditions are more indirect as they affect the opportunity costs facing firms and are more difficult to quantify. These direct and indirect costs affect not only the current income that can be derived from exercising the right but also the expectation of the future income associated with owning the right. Together these benefit streams provide the basis for the economic value of owning tenure.
In analyzing the impact of these conditions, especially those that influence the opportunity costs and future benefit streams, the property rights perspective identifies five key attributes:

- Enforceability (the ability to exclude others from appropriating the right);
- Exclusivity (the ability to enjoy the right individually);
- Divisibility and transferability (the ability to subdivide the right and sell or transfer the right);
- Comprehensiveness (the greater the set of rights open to the rights-holder); and
- Security (the confidence the rights-holder has that the rights will not be expropriated or modified).

Economic theory states that the stronger the attributes (i.e. the owner can exclude others, can enforce that right, freely divide and sell their interest, enjoys a broad scope of rights, and knows that they will be able to enjoy the same set of rights in the future) the more complete and hence more valuable the right.

Perhaps the key attribute identified in the property rights literature, and commonly raised in the context of tenure, is security. Security not only influences the value of tenure but also influences behavior; firms will be willing to undertake investment to the extent that there is greater certainty in terms of timber supply. For example, volume-based rights are generally considered weaker by this measure as they do not offer the same certainty as an area-based right since their assurance involves a share of the timber from a broader geographic area that they share with other license holders. Therefore, a key question becomes to what extent a tenure system offers security and what role it plays in firm behaviour. Governments may increase security either through means such as offering compensation if changes are made to the rights, by making it more difficult to modify the conditions such as requiring legislative approval rather than leaving it at the discretion of government officials, or by extending the duration of the agreement. The effectiveness of such

measures in extending such security will depend on how firms perceive such measures (i.e. offers of compensation may be ineffective if it is seen as inadequate or a contingent on promises made by the current government in power rather than a legally enforceable obligation).

Other attributes also influence the value of tenure although their importance varies in terms of tenure policy. For example, enforceability (in the sense that the firm has the right to exercise its tenure) is not typically identified as an important policy question. However, since tenure is neither comprehensive nor exclusive (since it solely grants rights to timber and in some cases not even to a defined area) potential problems may arise as tenure holders are required to interact with others on the landscape, thereby increasing uncertainty and raising transaction costs to exercise their rights. The transaction costs depend on rules governing the interaction between not only local First Nations but also other parties holding rights issued by the government to other resources on Crown land. This can include mineral-rights holders, grazing leasees, and in the case of volume-based rights other forest product firms operating in the area. In regards to divisibility the value is derived from the ability of the rights holder to divide the rights in order to maximize value. In this case, divisibility would refer to the more restricted case of a tenure holder sub-dividing their timber rights.

The Forestry Revitalization Plan

In March 2003 the government introduced a series of policy measures aimed at moving the tenure system towards a more market-based system through the Forestry Revitalization Plan (FRP). 7 The goals of the plan were to:

- Open the sector to new opportunities, new participants and new ideas;
- Eliminate the regulatory burden and allow the right sizing of operations to increase competitiveness;
- Allow timber to flow where/when it will be put to highest and best use; and
- Maintain a healthy forest sector and healthy communities (MoF 2003).

In terms of tenure changes there were four main components. The first was a tenure re-allocation and the redistribution of the newly available tenure; the second an expanded use of timber auctions based in part on an increased allocation from the reallocation; the third changes in operational restrictions (removing cut control and processing requirements); and the fourth removing many of the restrictions on transferring and sub-dividing tenure. We discuss each of these in somewhat more detail (the following is drawn from Niquidet, Nelson and Vertinsky 2005) as proposed at the time of their introduction. It should be emphasized that these changes did not involve a complete restructuring of the system but rather modifications of the existing system; however, they did involve the most substantive policy changes made to date in BC and indeed Canada.8

7 Related policies that we do not discuss include the introduction of market pricing (MPS on the BC Coast in February of 2004 and proposed for the Interior in the Spring of 2006); no longer allowing new replaceable contracts and allowing for negotiations to remove existing replaceable contracts for contractors (Bill 13); and the move towards result-based forest practices with an amended Forest Practices Code Act with changes introduced in 2003. Many of these would be expected to reduce the cost of operations through allowing for more flexibility in contracting and in meeting environmental regulations as well as making stumpage prices more market-sensitive.

8 "BC government announces broadest forest policy changes in 50 years" Daily News, Prince Rupert March 27 2003.

Tenure Re-allocation

Major Licensees, defined as those who had greater than 200,000 m3 of replaceable AAC, had 20% of their volume taken away, subject to fair compensation. A portion of this volume (approximately 50%) was to be re-allocated to small scale tenures (woodlots, community forests and first nations) with the other half will be auctioned to the highest bidder via the BC Timber Sales program (BCTS), formally known as the SBFEP.

Timber Auctions

At the same time the volume of wood flowing through BCTS would be expanded they would also eliminate bid proposals and award timber solely on the basis of price. The intention was to use the increased volume of timber auctioned through BCTS (approximately 20% of the total AAC) to set administered prices on timber derived from long-term tenures such as FLs and TFLs throughout the province. New long-term tenures would be auctioned and awarded on the competitive basis.

Cut Control and Processing Regulations

Appurtenancy and timber processing clauses that tied volume from tenures to specific manufacturing facilities were eliminated, allowing logs to flow to the highest valued use. Companies would no longer be penalized for closing mills. When harvesting, tenure holders would no longer be required to remove all "merchantable" timber but have the option of leaving the timber standing or on the ground subject to a stumpage fee and subject to silviculture objectives (this policy has been dubbed "take or pay"). Cut control regulations which restricted harvesting to be within 50 to 150 percent of the AAC each year and plus or minus 10 percent over a five year period were eliminated. However, a maximum harvest level over a five-year period was still retained for sustainability purposes.

Tenure Transfers and Subdivisions

Tenures could now be transferred without penalty (formerly all transfers were subject to 5% loss of AAC). Transfers no longer needed consent from Minister of Forests just notification. The only basis for holding up transfers would be concerns over the effect on competition. Tenure holders were now free to subdivide their tenures, as forest management concerns would be the only basis for refusal.

The potential impact of these changes

Government expectations were that the outcome of policy changes would be to enhance the competitiveness of the industry by (1) increasing overall efficiency and (2) attracting new investment into the sector (not only strengthening the capital base but also drawing in new investors in new products). This new investment it was hoped would help diversify the sector and also create additional employment strengthening community stability (MoF 2004). Yet at the same time concerns were also expressed about the potential impact of these policies on communities. Indeed the Deputy Minister expressed concern about what might happen:

> "How about rural communities? That's where the connection with industry has always been strongest. Do our economic policies build or weaken this connection?" (Konkin 2005)

How did firms respond to these new policies? What were the social and economic impacts of these changes? In order to answer these questions we first consider what economic theory would predict and consider industry trends to determine what market forces were operating at the time of the changes. We then identify the particular changes in firm behaviour that can be attributed to the new tenure policies and their consequences, based on both our interpretation of the data and a series of interviews with various stakeholders.

An economic analysis of the changes predicts several effects. First, firms can be expected to exercise their ability to operate more freely where they had previously been restricted by such policies; for example, they will be more likely to rationalize existing operations where such opportunities exist (where they have several mills operating in an area and local log supplies may be redirected to the more efficient mills and the less efficient ones closed down). Indeed, existing tenure rights will take on more value as these restrictions are eased and more flexibility is introduced in acquiring and selling tenure rights. More efficient firms will seek to acquire less efficient firms and consolidation is likely to take place (where again rationalization may follow such consolidation). On the margin, firms will be more exposed to market forces (through market pricing) and should be able to adjust production and harvest levels more quickly to changes in market conditions that will also reinforce the incentives for greater efficiency. Given that efficiency within the industry is achieved through the use of labour-saving technologies, one would expect employment to fall (for a given level of production) not only through the closure of less efficient facilities but also the substitution of capital for labour at those that remain open (clearly overall employment could rise if production expanded significantly).

At the same time these changes did not directly affect the characteristics associated with the security of tenure rights (i.e. the duration of the agreements were unchanged as were the renewal procedures or any kind of commitment for compensation beyond that promised for the takeback) and, in fact, may be considered to have reduced the security associated with such rights through the tenure take-back. Indeed from a political perspective one can argue that the exchange of flexibility for the take-back was at the heart of the political compromise. As such, the tenure agreements as structured offered no additional incentives for investment beyond those already in place. However, the expansion of log markets through the reallocation not only provided an impetus for increased efficiency but could also potentially provide an alternative source of supply that could be equally "secure" for the more efficient incumbents and new entrants that can outbid less efficient incumbents. Offsetting this is the uncertainty associated with the development of a new system and any concerns firms may have about government ability and willingness to ensure that committed volumes are made available in a freely open market (i.e. government supplying the promised volumes without imposing restrictions on the newly allocated volumes). Market uncertainty may also be created by the decisions of private wood lot owners and First Nation tenure holders to supply or withhold supply from the market. In addition to these issues, new entrants may also be concerned about the potential for anticompetitive behaviour of incumbents. In the short-term, then, one would not expect substantially new investment based on the tenure changes.

Changes in the pattern of production

As the primary breakdown of most logs in British Columbia takes place in a sawmill, most tenures (and especially the long-term renewable tenures that are the mainstay of the system) are associated

with the production of softwood lumber. Therefore, it is within this sector that we focus our examination of the changes that have taken place in terms of efficiency and productivity.

A trend that was in place prior to the tenure changes was an ongoing shift in production patterns as production migrated from smaller to larger mills. Firms have been expanding capacity at larger mills and in recent years establishing "super-size" mills while closing smaller, more inefficient mills.9 Overall any increase in production has taken place at the larger mills while production levels have decreased at smaller mills, regardless of the region. However there were regional differences as the nature of the resource and market conditions affected overall production levels. Production increased in the Interior where firms benefited in recent years from short-term increases in harvest levels and a stronger demand while production decreased on the Coast as firms struggled to adapt to the changing nature of the resource (increasing share of hemlock and growing proportion of second growth) and lower prices in their traditional product markets.10

However there has been a divergence between the different regions of the province: the Coast Forest region accounts for most of the closures, followed by the southern Interior while there have been few closures in the Northern Interior. Where sawmill closures have taken place they have involved licensees that operate more than one mill within the region giving them the ability to utilize volume derived from the tenure for other operations. In only a few circumstances do there appear to be any closures following mergers between different companies.11 This is discussed more fully in a subsequent section on changes in industry structure.

The reduction in capacity due to mill closures was offset to a large extent by capacity increases at other mills. Indeed data from the annual mill survey carried out by the Ministry of Forests shows that overall lumber capacity has increased in the province although the distribution of that capacity has shifted from the Coast to the Interior.

Figure 6 shows the changes in mill capacity on the BC Coast classified by mill size. Here the steady decrease in capacity is apparent over the entire period. Much of the decline in the late 1990's can be attributed to the downturn in Asian markets and the restraints on shipping into the US market under the SLA.

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9 The definition of large and supersize vary by region. On the Coast, large mills are defined as those with capacity exceeding 140 million board feet. In the Southern Interior, large mills are those with a capacity exceeding 170 million board feet while super-size mills have a capacity greater than 240 million board feet. In the Northern Interior, large mills have a capacity exceeding 200 million board feet while super-size mills have a capacity than 300 million board feet

10 In the past two years the provincial harvest has climbed in response to the Mountain Pine Beetle outbreak with the AAC temporarily elevated in different timber supply regions (mainly in the Central and Northern Interior). However there will be a long-term reduction in timber supply for the province as the AAC is revised downward in the Interior after the outbreak while the Coast AAC has shown a sustained downward trend over the past decade.

11 An example would be the recent mill closures following the acquisition of Cascadia by Western Forest Products.

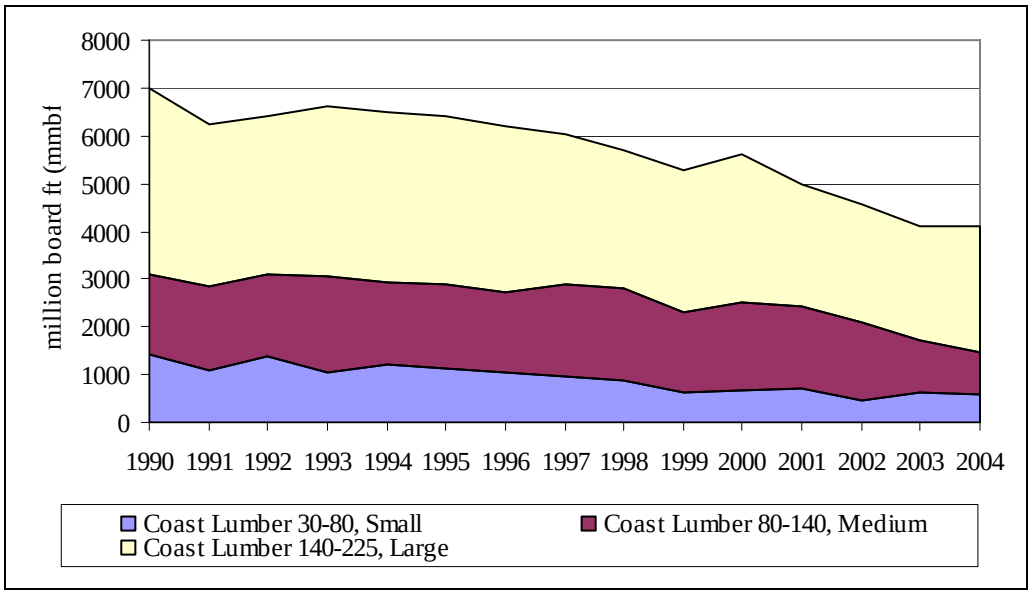

Figure 6. BC Total Mill Capacity Coast Lumber-By Size and Region- 1990 2004

Figure 7 shows the changes in mill capacity in the southern Interior classified by mill size. Here the story is quite different-while capacity remained relatively constant through much of the period although it started to increase in the past five years, adding nearly 1 billion board feet alone in the past three years. Supersize mills also emerged as sawmills took advantage of economies of scale; their capacity within the region nearly quintupled between 2002 and 2004, moving from 5% of total capacity to 19%.

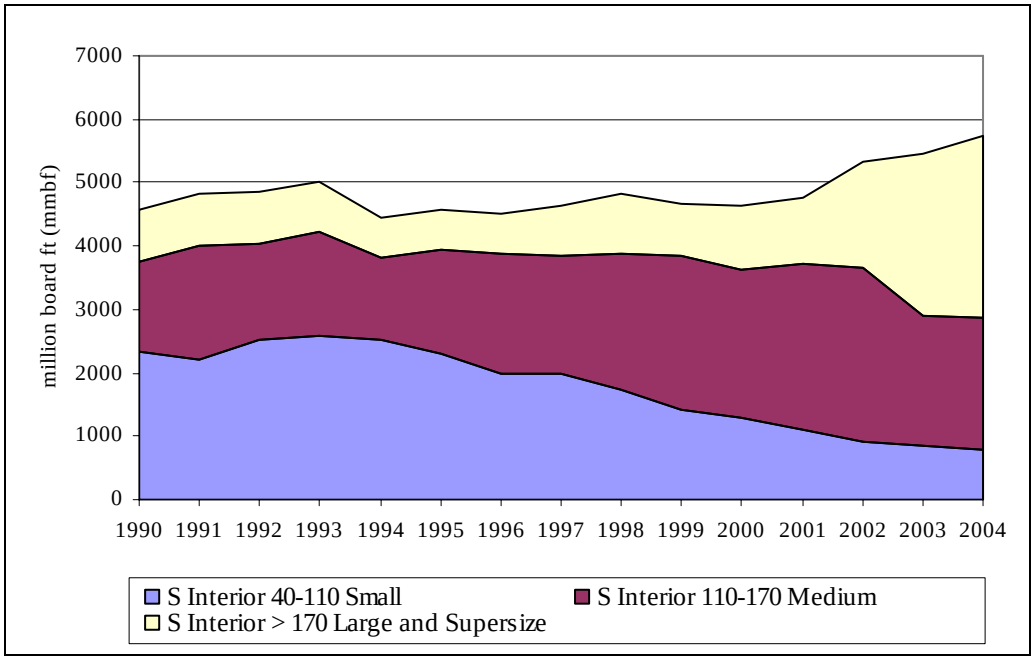

Figure 7. BC Southern Interior- Total Mill Capacity by Size 1990-2004

Figure 8 shows much the same pattern for the Northern Interior but here the increase in capacity has been more gradual and started sooner in the mid-1990's. Again the overall increase has been an addition of nearly 1 billion board feet. Here too supersize mills grew in importance over the past five

years (although they had been in existence longer than in the southern Interior). Their capacity more than doubled between 2002 and 2004, moving their share of regional capacity from 17% to 35%.

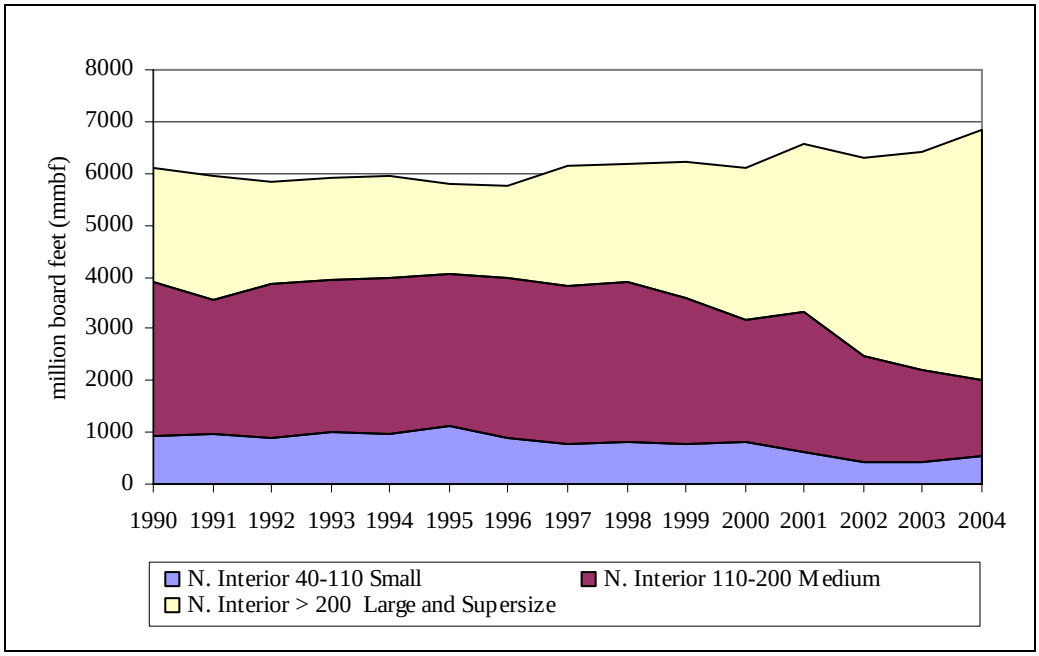

Figure 8. BC Total Mill Capacity- Northern Interior- By Size 1990-2004

When we examine actual production we see the same pattern-the migration of production away from smaller mills to larger mills. In the case of the Interior, we see that the increase in output starts in 2001, coinciding with the end of the SLA, as Interior firms moved to address the impact of the various duties by increasing their production to reduce fixed costs.

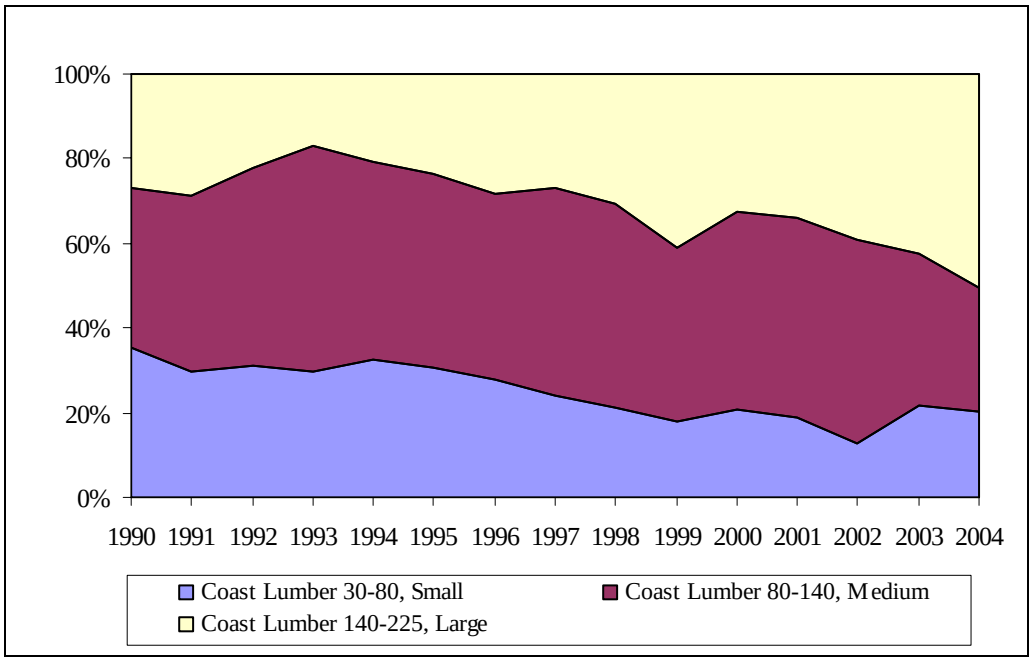

Figure 9. BC Coast Lumber Mill Output- By Size - 1990-2004

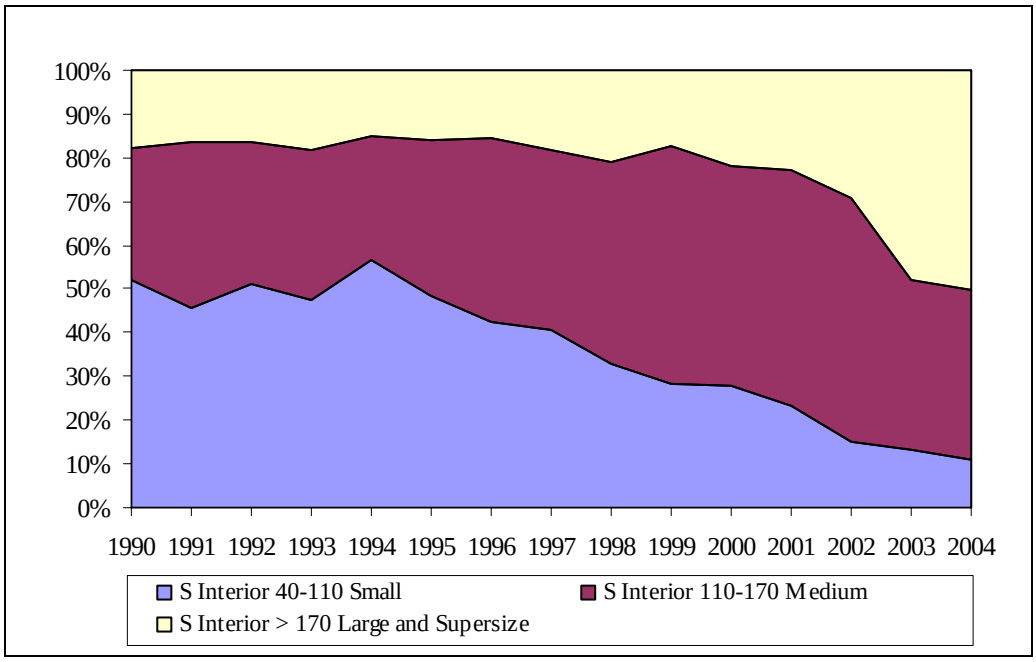

Figure 10. BC Southern Interior Mill Output- By Size - 1990-2004

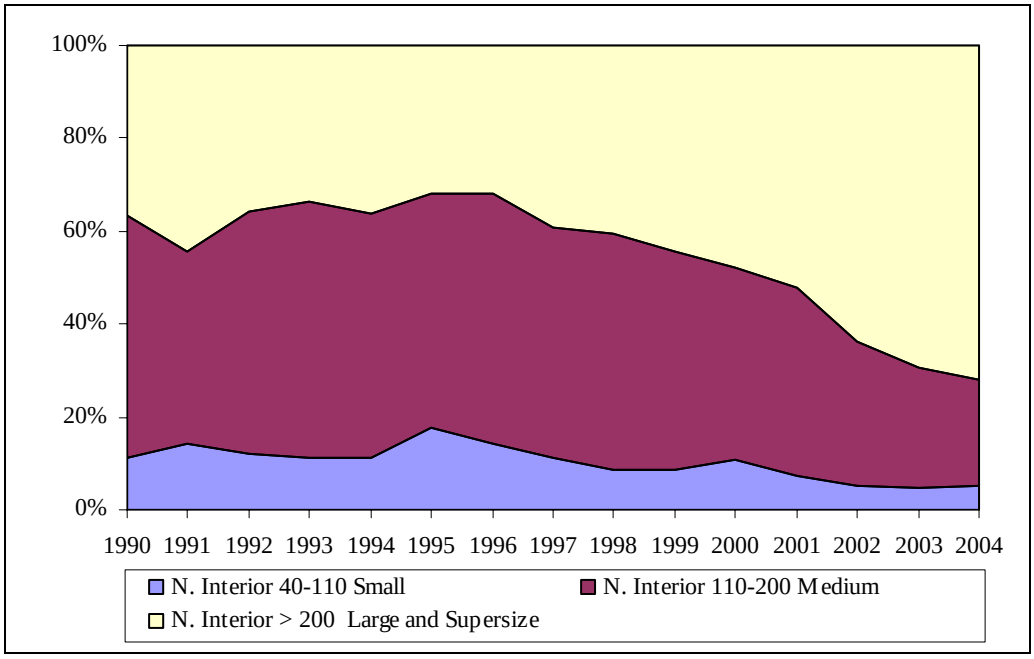

Figure 11. BC Northern Interior Mill Output- By Size - 1990-2004

The output per employee has also increased over time, as has the average lumber recovery factor for each region.

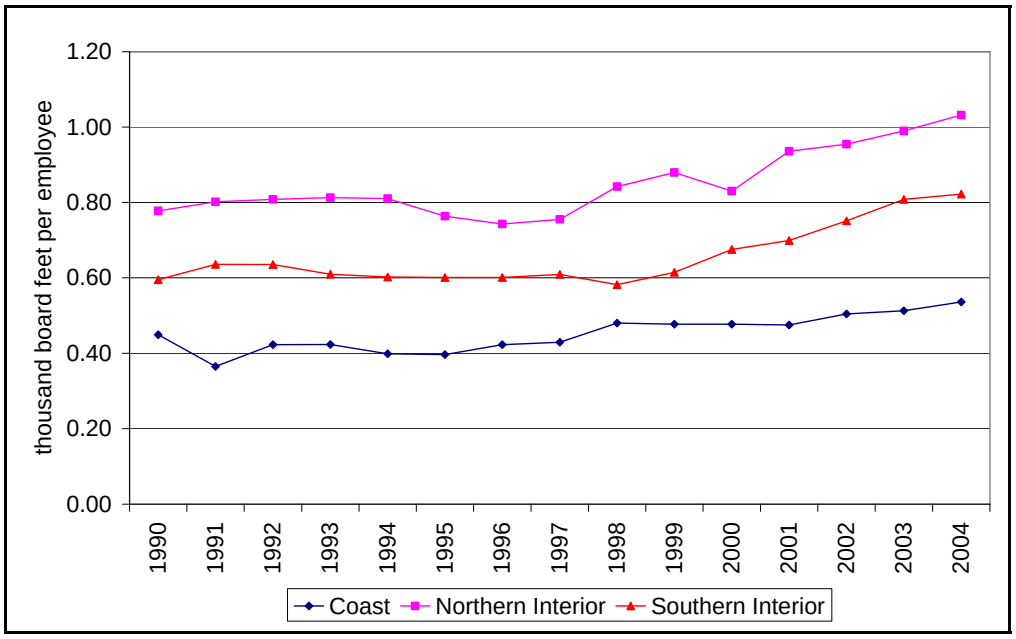

Figure 12. Output per Employee in Different Regions in BC, 1990-2004

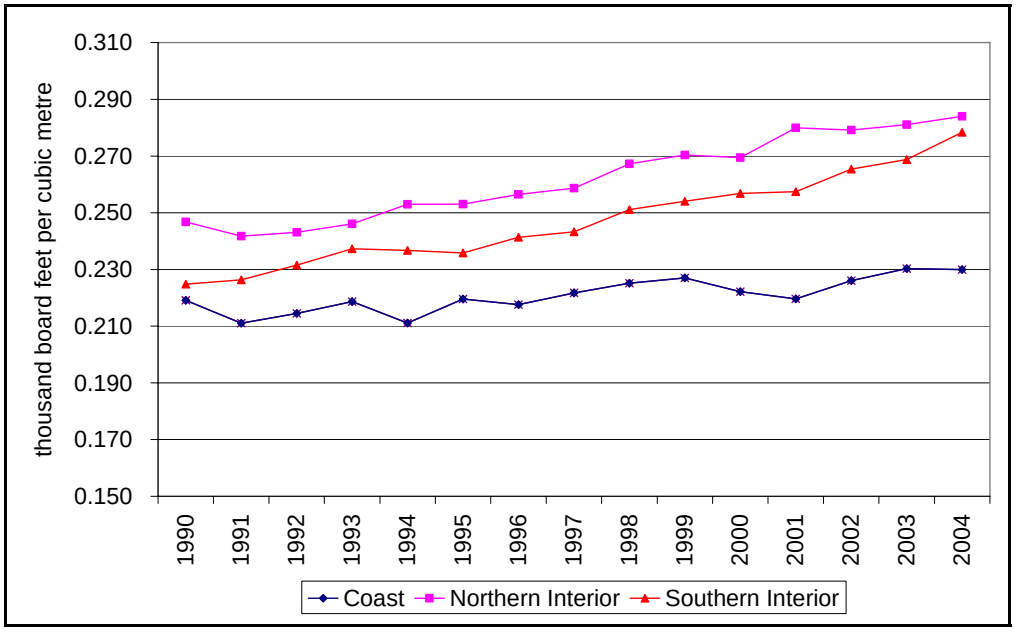

Figure 13. The Lumber Recovery Factor in Different Regions in BC, 1990-2004

This is due in large part to the shift towards higher volume mills that generally have higher LRF's and output per employee.[12]

An examination of the capacity utilization shows significant regional divergences-in the Interior larger mills tend to operate at higher levels of utilization (with the small mills operating at

12 One exception has been the Coast where early in the period the LRF was not substantially different between the different classes of mills and indeed in 2003 the LRF was highest in the small mills.

consistently lower levels and also showing more annual variation) while on the Coast small mills for much of this period have operated at higher rates relative to the other size classes in the region.

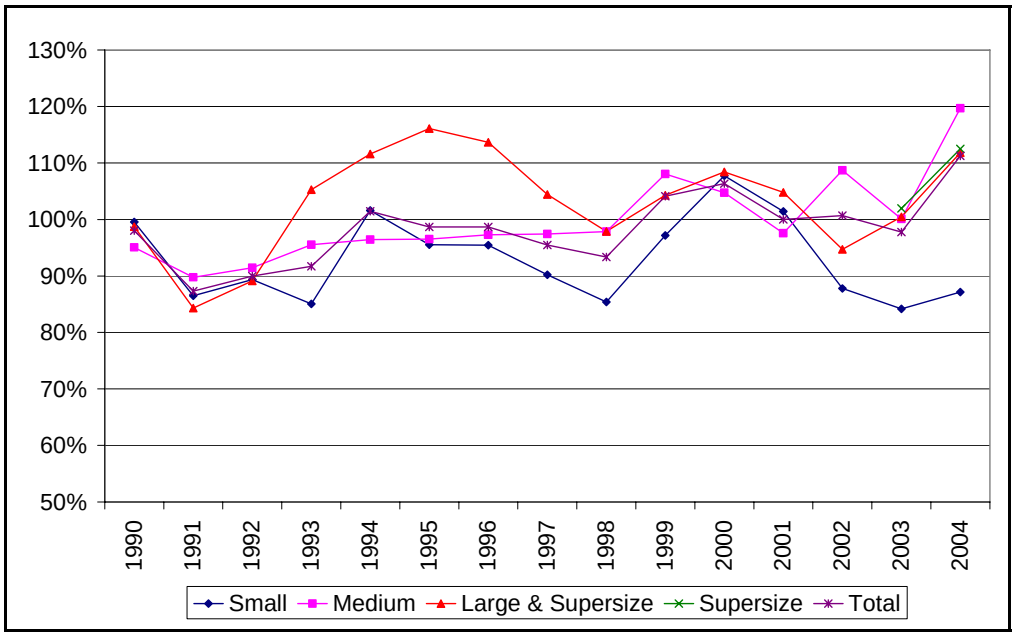

Figure 14. Southern Interior Capacity Utilization

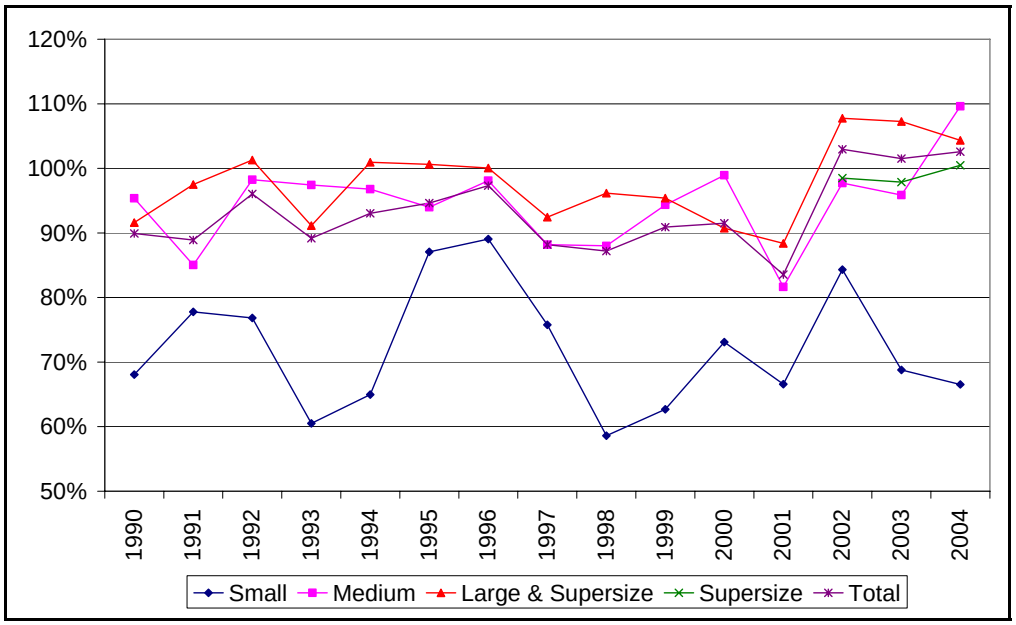

Figure 15. Northern Interior Capacity Utilization

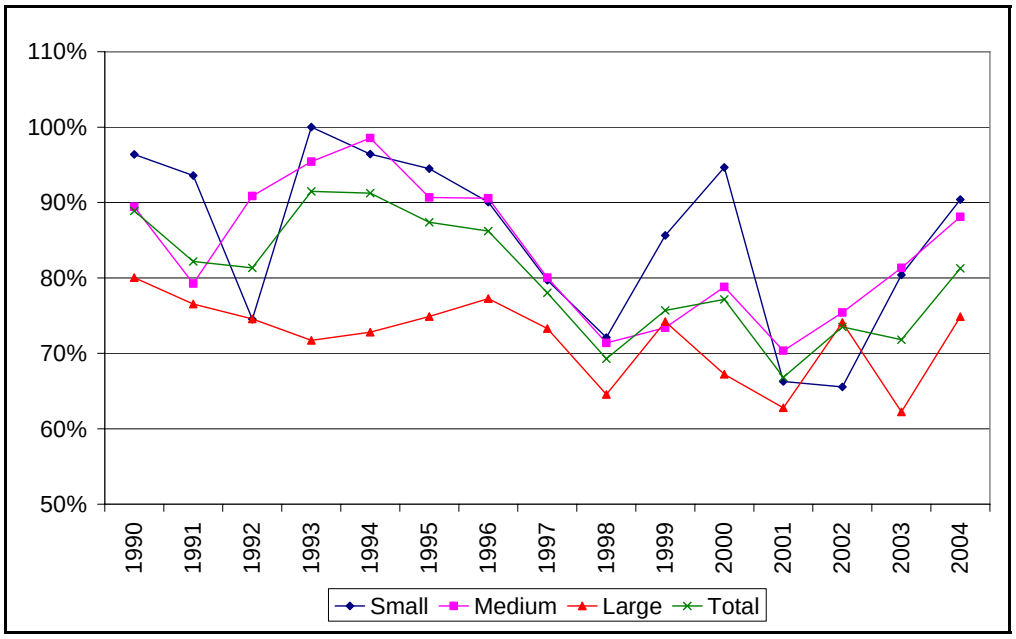

Figure 16. Coast Capacity Utilization

Overall, however, the Interior has operated at higher rates throughout the entire period. This accounts for the overall increase in output per employee and LRF over time (since these two measures are higher in the Interior than on the Coast).

Therefore, despite the differences in conditions facing the industry in the Interior and the Coast regions, firms in both regions have moved production to larger mills in an effort to enhance productivity and reduce costs. Much of the efficiencies observed were driven by rationalization within a company that closed its less efficient mills with those volumes diverted to other mills that have had capacities increased either by adding extra shifts or by capital improvements. Indeed overall capacity expanded in the Interior. At the same time, this rationalization has had an impact upon employment that we consider in the next section.

Employment trends

We can examine more sector specific changes in terms of employment patterns and earnings for four segments: forestry support services (firefighting, silviculture, etc.); logging; wood product manufacturing; and pulp and paper.13 Indeed, one would expect to observe a reduction in sawmill employment (included within wood product manufacturing) attributed to the ongoing rationalization within the industry as less efficient mills are shut down and replaced with more efficient capacity. We would also anticipate that the competitive forces driving changes within the sawmilling sector may also be at work elsewhere in the industry, affecting not only employment, but also earnings. Therefore, we compare employment in BC relative to employment elsewhere in

13 There are two different datasets used to derive employment numbers. One is the monthly survey of employment and hours, and the other is the annual labour force survey. Perhaps not too surprisingly they yield different estimates of employment. For the data in this section we utilize the monthly survey as it permits us to see how employment varies seasonally along with earnings. The earlier table looking at changes in annual employment was based on the Labour Force Survey.

Canada to examine to what extent patterns may be different in BC and whether these differences may be attributed to the policy changes.

We first look at employment in forestry and logging in BC as shown in Figure 17.

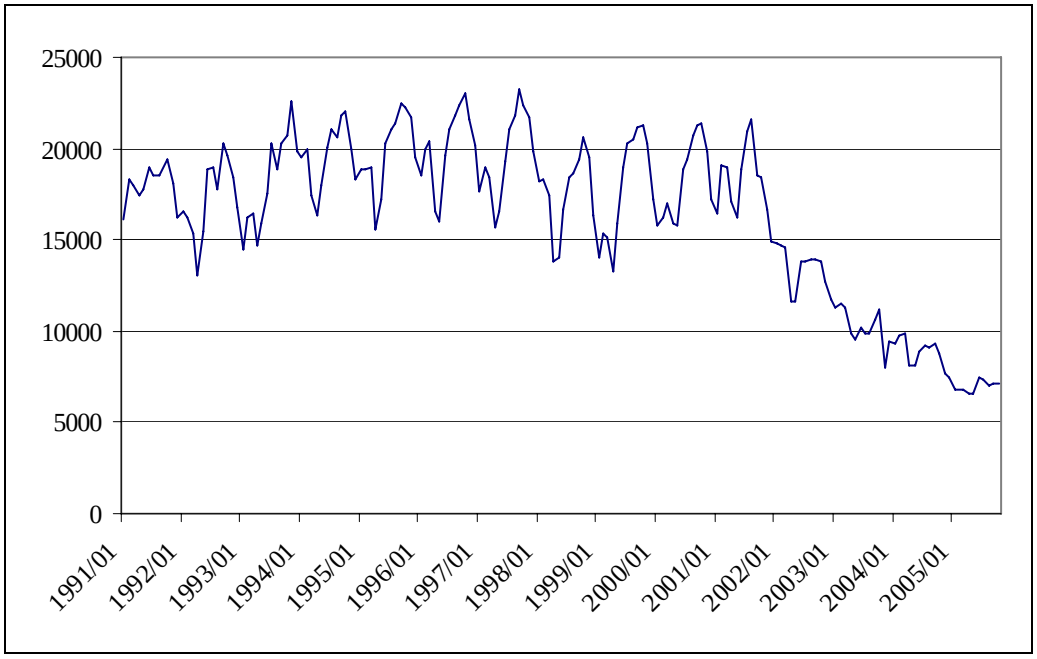

Figure 17. Monthly Employment in Forestry and Logging in BC, 1991-2005

Figure 17 illustrates not only the seasonality of employment in the industry as well as a sharp drop in levels starting in 2001 (as well as a marked diminishment in the apparent seasonality of employment). Figure 18 compares employment in this sector with the rest of Canada.

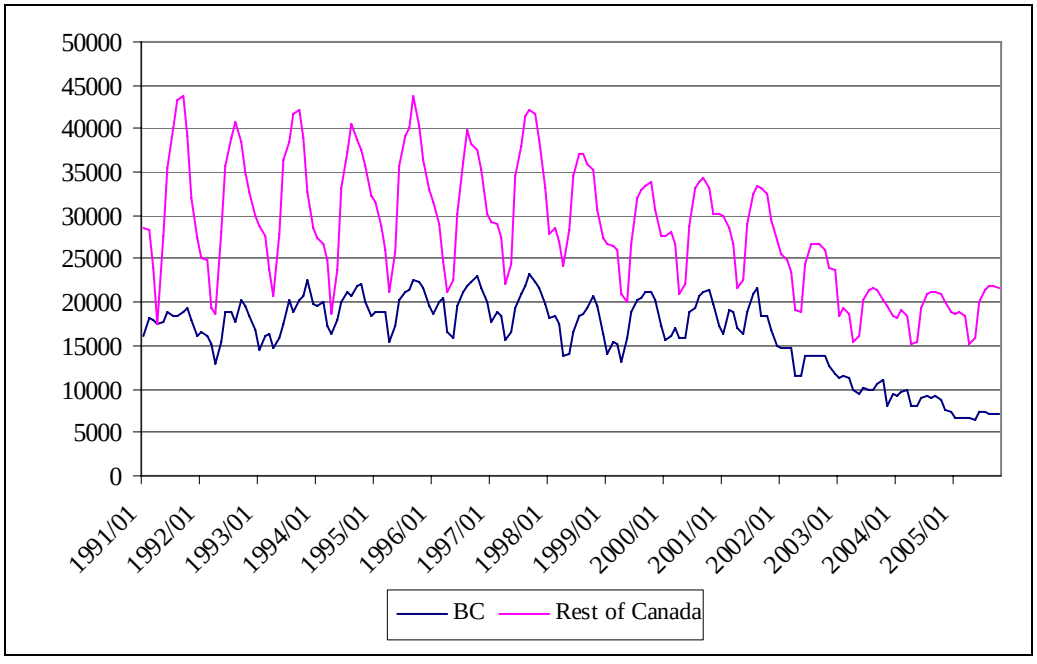

Figure 18. Monthly Employment – Forestry and Logging BC vs. Rest of Canada 1991-2005

Figure 18 shows that employment elsewhere followed a similar seasonal pattern albeit with more variation initially with the amplitude diminishing both in BC and the rest of Canada. Overall employment levels also fell over the period. Figure 19 shows these patterns more clearly by standardizing employment at the beginning of the period. It shows that the downward trend in both BC and the rest of Canada started at the same time. As this corresponds to the expiration of the SLA, and imposition of US duties, this reflects not only the reduction in harvesting activity that took place in 2001 but also downsizing in an effort to gain efficiencies (note that while harvest levels increased after 2001 employment did not). It also appears that there was a shift in employment patterns reducing the seasonality of employment in BC (while the amplitude diminished for workers in the rest of Canada the seasonality of employment remained important).

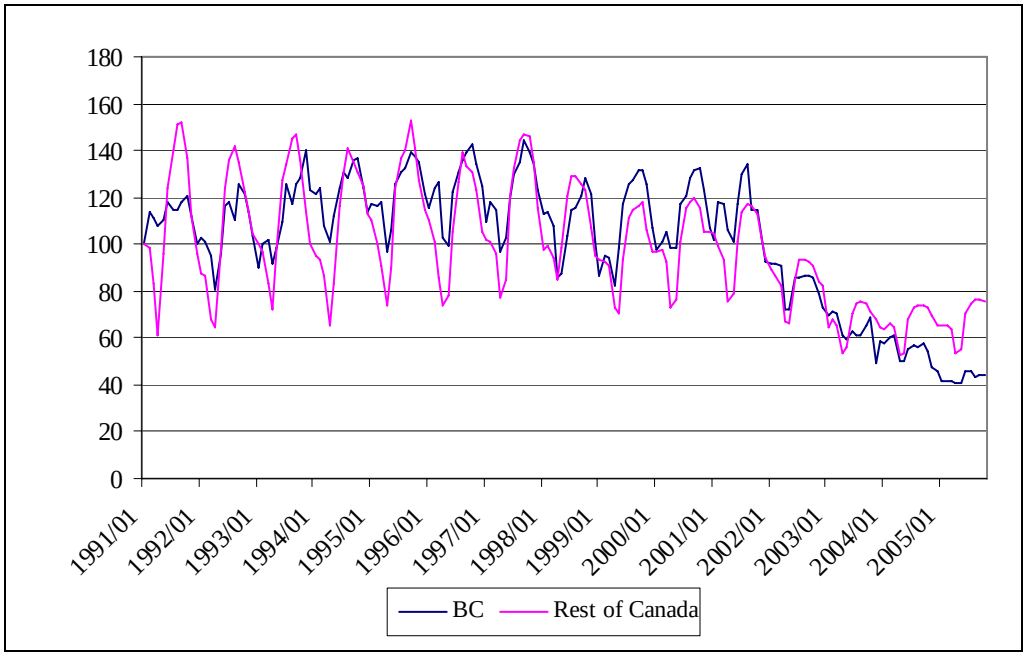

Figure 19. Monthly Employment Indexed for Forestry and Logging for BC vs. Rest of Canada

When we examine monthly employment for support services in forestry we find very similar patterns. There is again a downward trend and reduction in the seasonality of employment although in this case a seasonal component remains unlike in forestry and logging. 14

14 One possibility for the sharp reduction in numbers that has been suggested has been the potential reclassification of some workers (e.g. truckers) that are shifted out of the forestry classification to another category when they become independent contractors. However there has not been any attempt yet to discern whether this actually does explain the fall in employment (Tedder 2006).

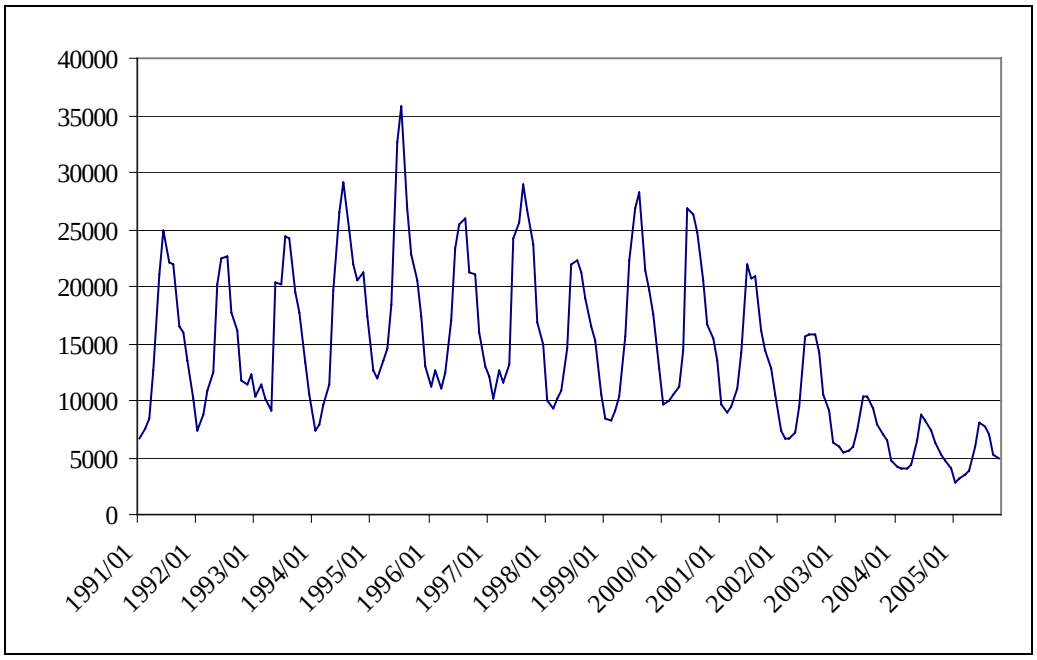

Figure 20. Monthly Employment for Support Activities for Forestry in BC, 1991-2005

We can examine the pattern in BC relative to the rest of Canada as shown in Figures 21 and 22.

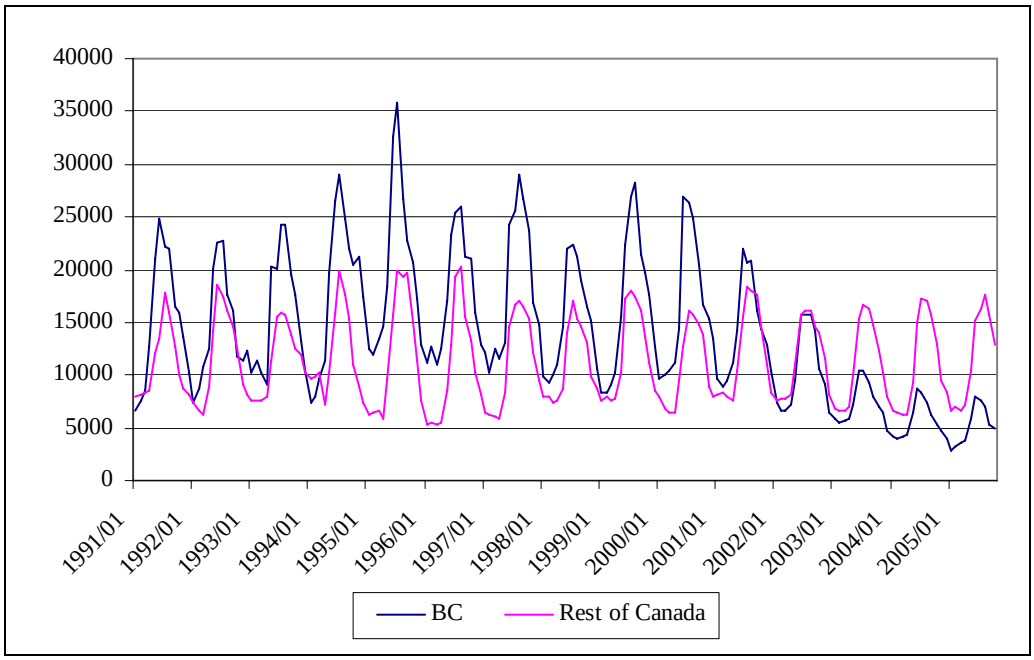

Figure 21. Monthly Employment for Support for Forestry Activities in BC vs. the Rest of Canada, 1991-2005

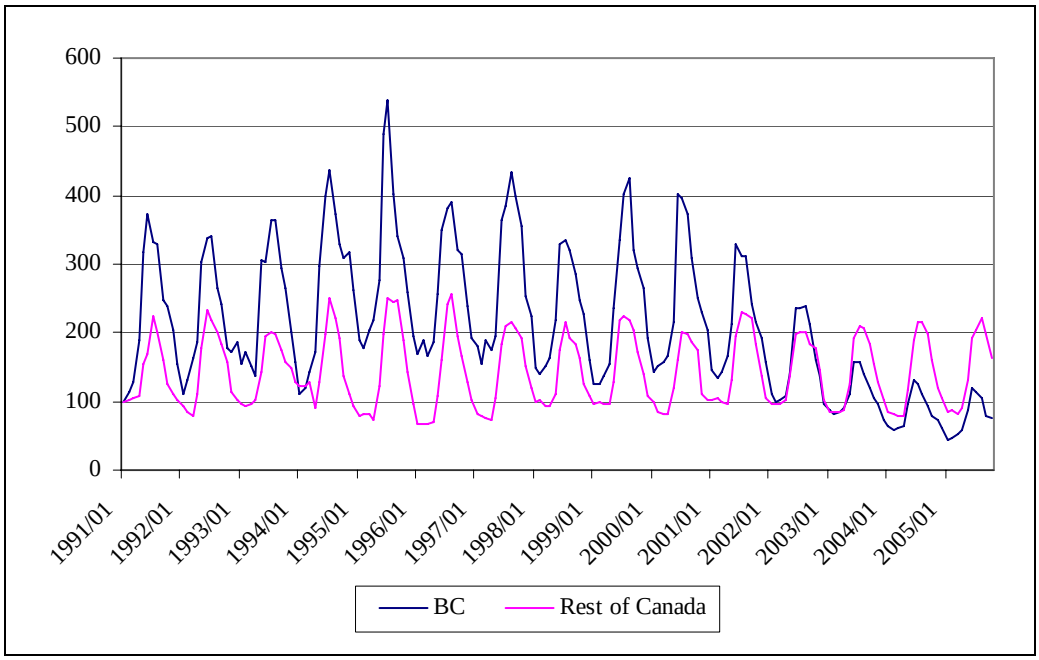

Figure 22. Monthly Employment Indexed for Support Activities for Forestry for BC vs. Rest of Canada, 1991-2005

We observed a downward trend in BC but not elsewhere. What is also striking is the sharp reduction in the monthly variations in BC (which was considerably greater in BC relative to the rest of Canada) that did not take place elsewhere (where the amplitude remained relatively constant over the period).

We next turn to explore employment in the manufacturing sector. We first examine employment in the solid wood sector. Figure 23 shows a drop in employment between the peak in early 2000 and the end of 2001; a good portion of the shift downward took place in the second half of 2001, again consistent with the impact of US trade actions on reducing sawmilling production (included within this sector). Following that period of downsizing, employment levels have remained relatively constant (albeit with some brief episodes when production was curtailed because of poor product prices).

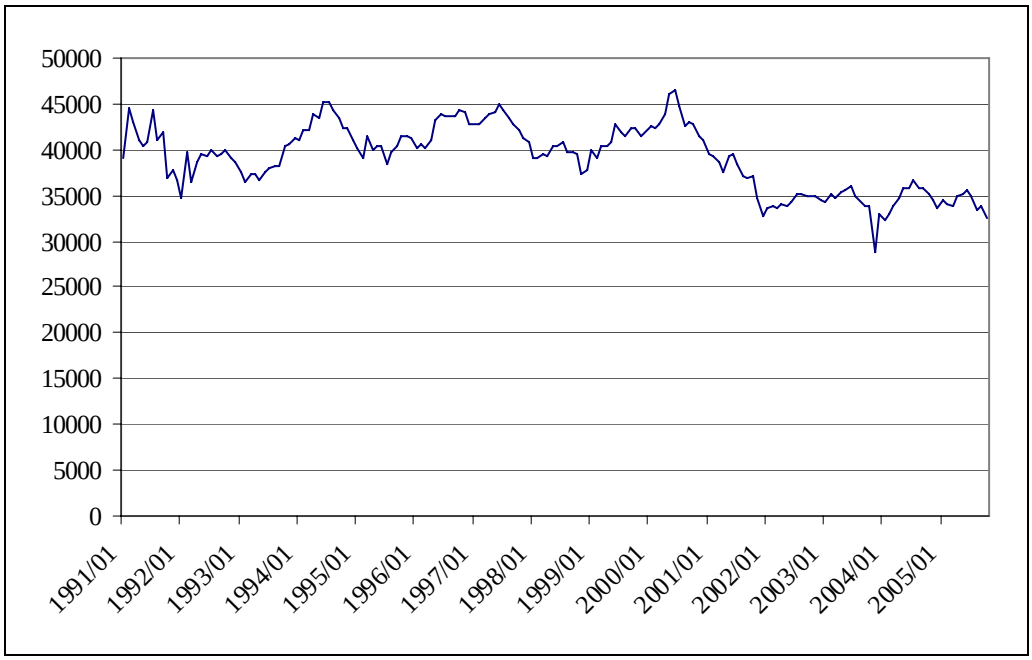

Figure 23. Monthly Employment – Wood Product Manufacturing BC 1991-2005

Figure 24 shows that employment in the sector grew elsewhere in Canada (consistent with the expanding harvests elsewhere and the ability of firms in provinces outside of the SLA to expand production); however, since 2001, employment has remained relatively steady although displaying more volatility than employment in this sector in BC.

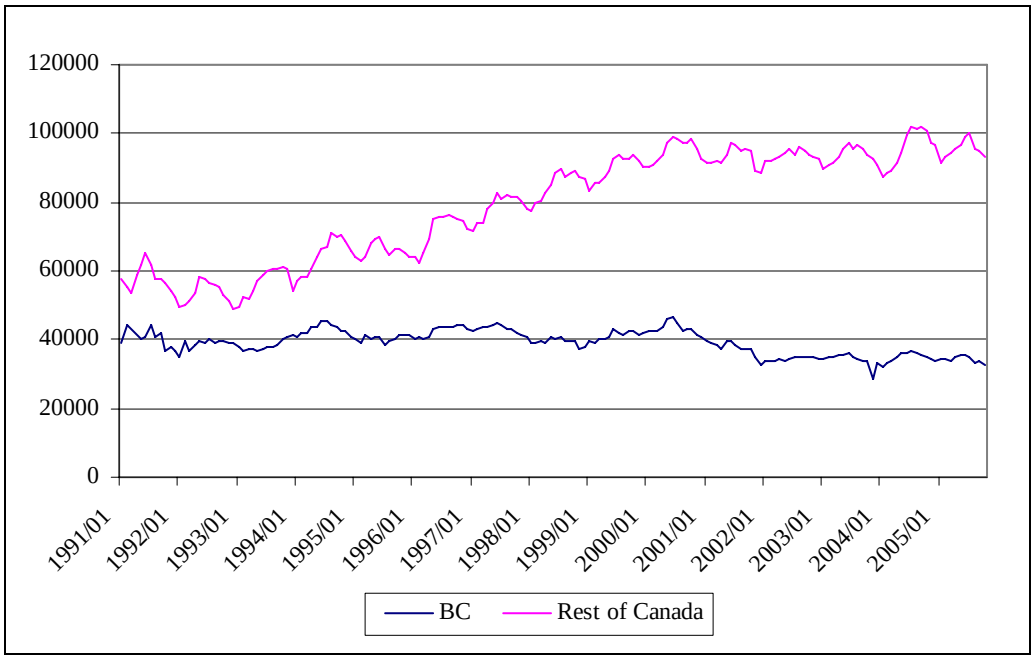

Figure 24. Monthly Employment in Wood Product Manufacturing in BC vs. the Rest of Canada, 1991-2005

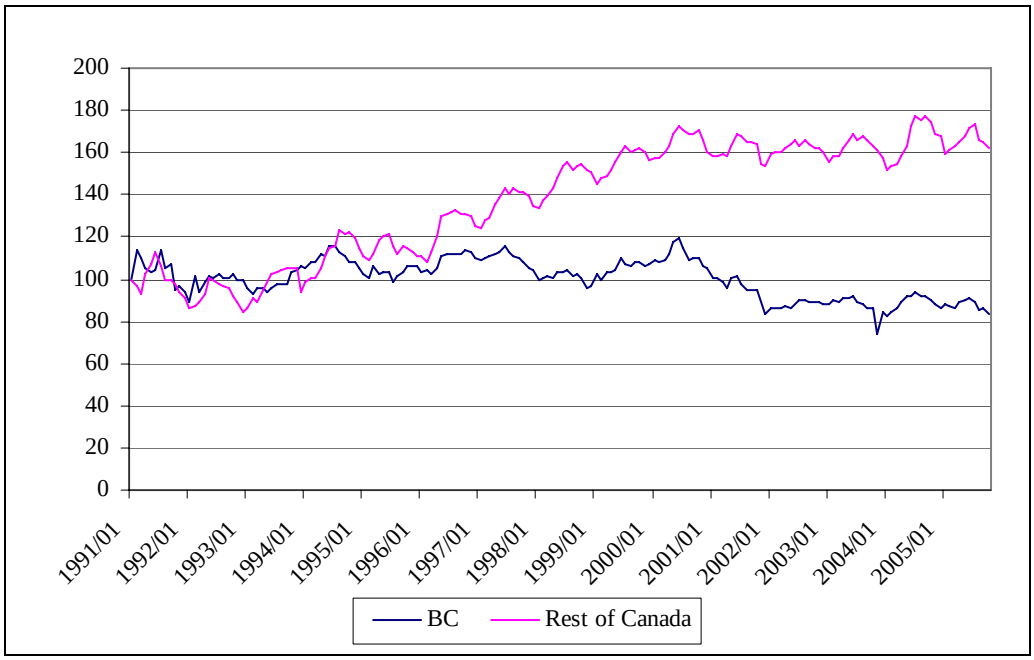

Figure 25. Monthly Employment in Wood Product Manufacturing Indexed in BC vs. the Rest of Canada, 1991-2005

Finally we examine employment in the paper manufacturing sector in BC. Employment in this sector shows a steady decline over the entire period, although during the late 1990's the trend briefly reversed before a sharp drop between 2001 and 2002 (the sharp spike downwards in 1992 represents a strike). This coincided with a sharp drop in pulp prices over the period.15

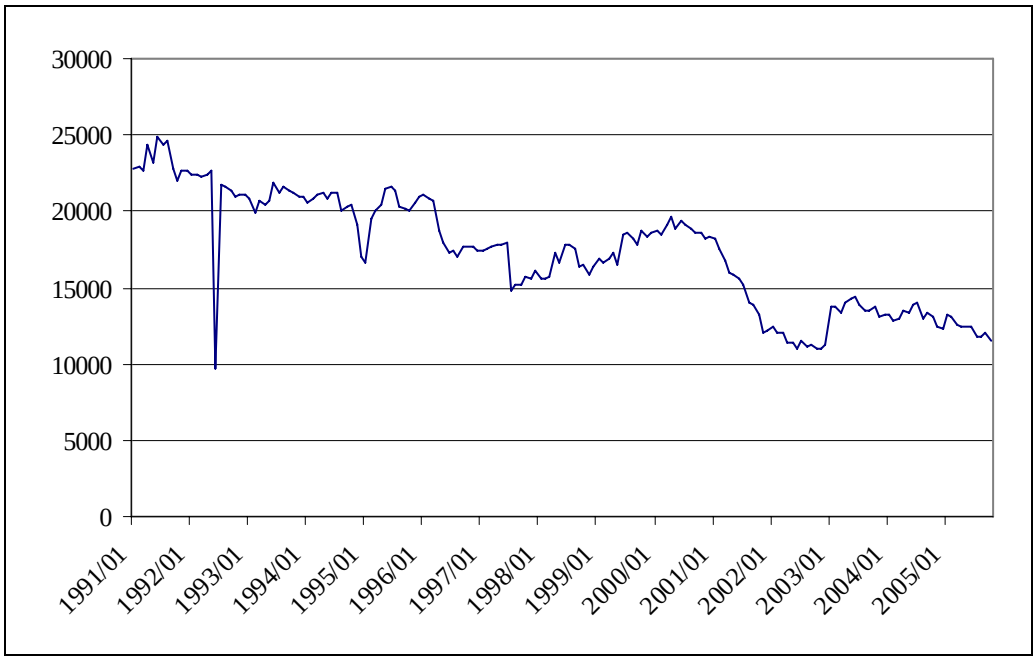

Figure 26. Monthly Employment – Paper Manufacturing BC 1991-2005

Figures 27 and 28 then compare employment in this sector with the rest of Canada.

15 Prices fell nearly $US 300 per tonne over this period.

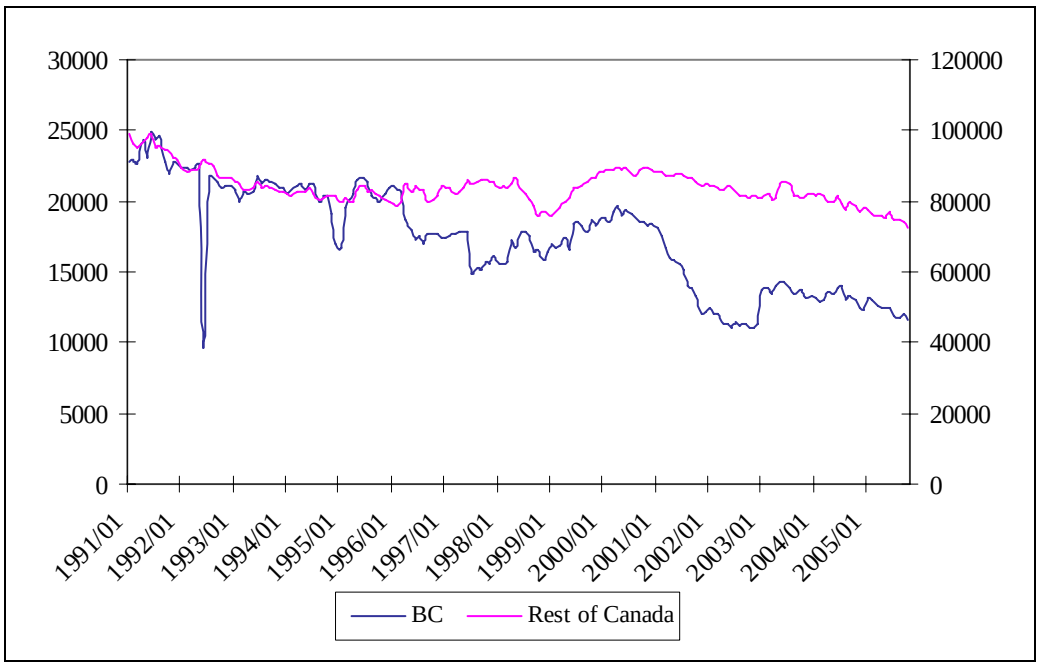

Figure 27. Monthly employment in Paper Manufacturing BC vs. Rest of Canada

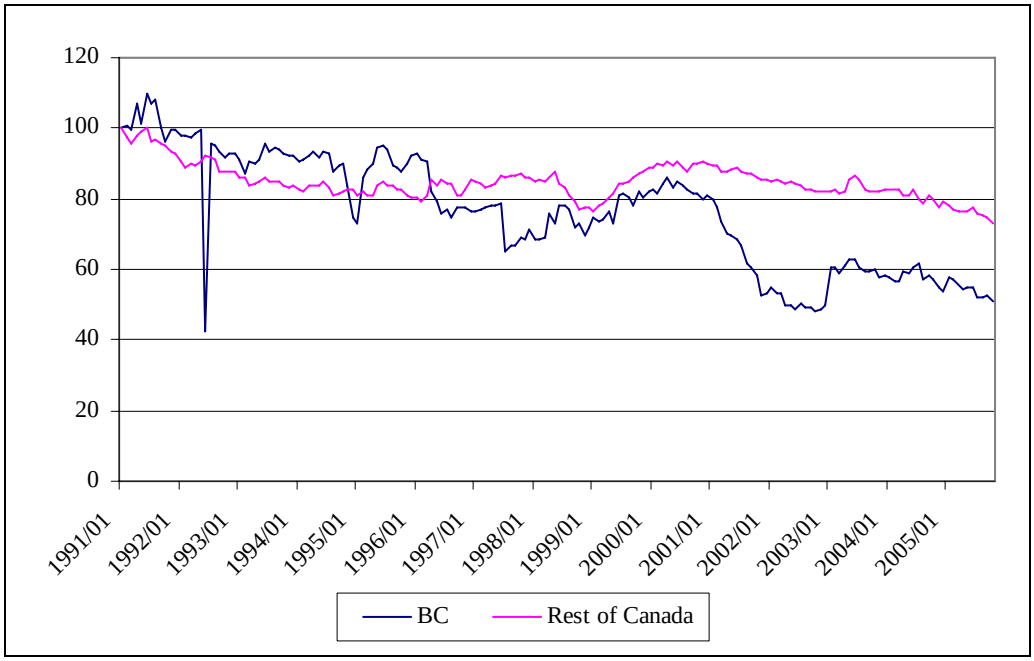

Figure 28. Monthly Employment in Paper Manufacturing, BC vs. Rest of Canada (1991=100)

While employment in the paper manufacturing sector remained more stable in the rest of Canada during much of the period it too has shown a downward trend in recent years (albeit at a reduced rate relative to BC).

We observe several facts: first, employment levels decreased in all of these sectors in BC (albeit somewhat less for logging) both in absolute levels and compared to the rest of Canada. Second, for those sectors where employment is more seasonal, we observed a marked diminishment in seasonal fluctuation, both in absolute terms and relative to the rest of Canada. For the three sectors most

closely associated with sawmilling in BC (logging, support services, and wood product manufacturing), we see a similar patterns: levels remained relatively steady over much of the period prior to 2001, when we see a significant shift downwards (this is also associated with the reduction in seasonality associated with the two supporting sectors). Given that this coincides with expiration of the SLA, this likely reflects firms responding to the intense competitive pressure brought about by the imposition of the trade duties (through curtailing volumes and/or downsizing). In terms of the rest of Canada, the only sector that appeared to show a similar response to the ending of the SLA was the forestry and logging sector where there was a drop in employment too. Thirdly, with the one exception of support activities for forestry, there does not appear to have been any impact from increased production levels and harvests in the mid-1990's on employment in the different sectors in BC.

We can also look at changes in weekly earnings by sector (expressed as annual averages and adjusted for inflation) and again compare them across the different sectors for BC relative to the other provinces. These are shown in Figures 29 through 32. Generally speaking the figures suggest that earnings in BC in the different sectors have tracked earnings in the other sectors with the exception of one, forestry and logging. In that sector, earnings dropped in BC since 2002 at a greater rate than in the rest of Canada, suggesting that at least within BC there was some influence over that period exerting a downward pressure on wages. This sector, along with the paper manufacturing sector, both saw average weekly earnings fall relative to the beginning of the period.

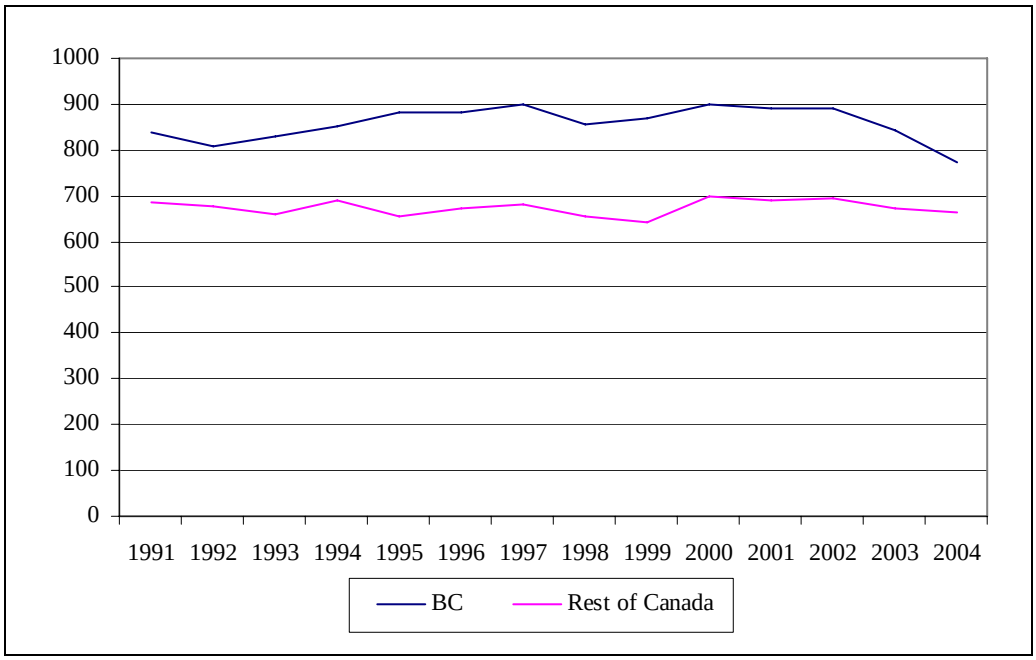

Figure 29. Average Weekly Earnings by Year ($/week), Adjusted for Inflation, in the Forestry and Logging Sector in BC vs. the Rest of Canada ($1992=100)

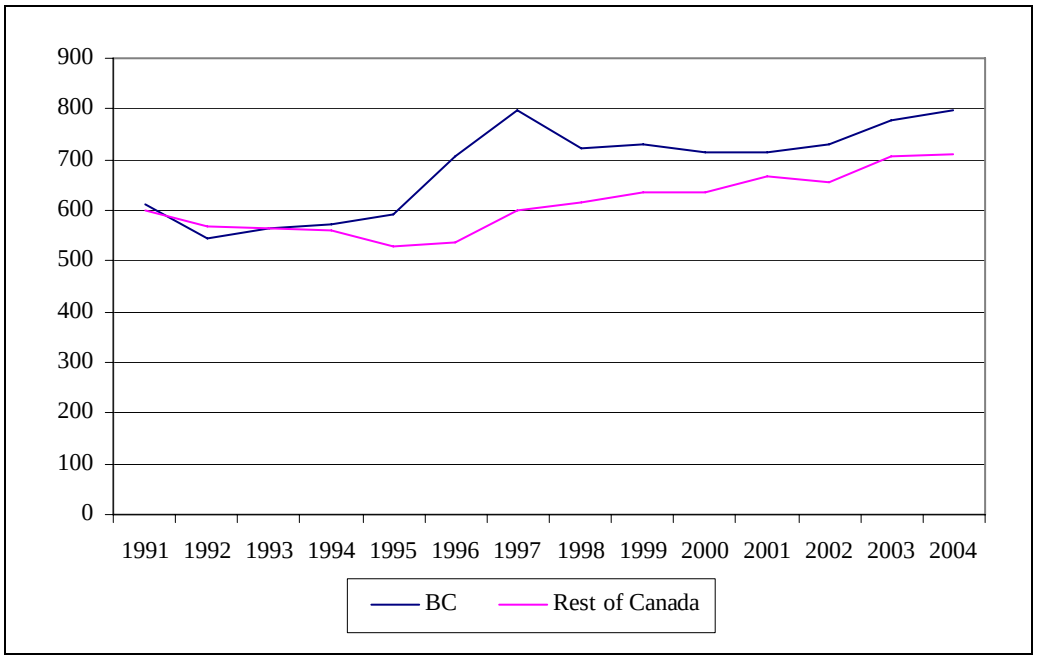

Figure 30. Average Weekly Earnings by Year ($/week), Adjusted for Inflation, in the Support Activities for Forestry in BC vs. the Rest of Canada ($1992=100)

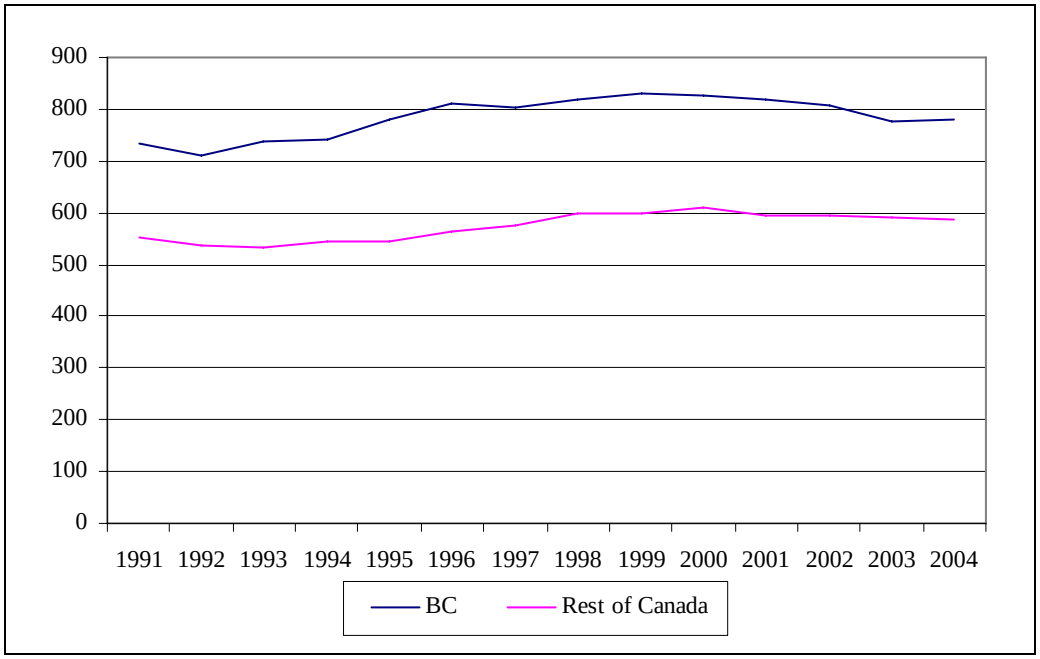

Figure 31. Average Weekly Earnings by Year ($/week), Adjusted for Inflation, in the Wood Product Manufacturing Sector in BC vs. the Rest of Canada ($1992=100)

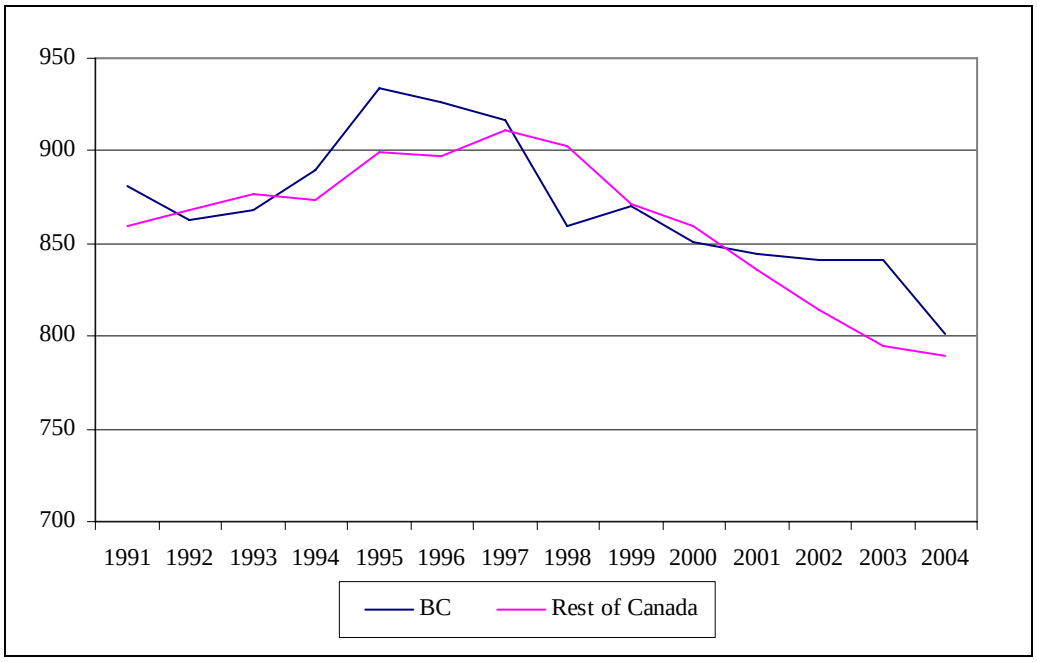

Figure 32. Average Weekly Earnings by Year ($/week), Adjusted for Inflation, in the Paper Manufacturing in BC vs. Rest of Canada ($1992=100)

4. Assessing the Impact of the Policy Changes

It is clear that there are a number of confounding factors at work in assessing the impact of the tenure changes. These include the effect of changing trade regimes, with the expiration of the SLA and imposition of trade duties; a collapse in traditional markets for the BC Coast; and a surge in beetle-killed timber volumes in the BC Interior. In fact it is the nature of this kind of policy change that it is more likely to take place when circumstances are changing dramatically; absent those external drivers stakeholders are more likely to resist more substantive changes to the status quo.

Given all these changes (including the policy changes) the data does show that one trend stands out in terms of sawmilling-a sustained and consistent move towards larger mills and attendant increase in productivity over the past decade and a half. This trend is not dependent on harvest levels: we observe it happening on the Coast where production and harvesting were contracting; and in the BC Interior, where harvests were increasing and production expanding, This trend did not end with the policy changes in 2003; in fact it coincides with the emergence of super-size mills that has seen them expand dramatically in overall size and share of capacity. Correspondingly, the number of small and medium mills in all regions continues to drop in both absolute and relative terms.

One of the anticipated consequences of rationalization is a reduction in employment. While we do observe employment falling in the wood-manufacturing sector, the most significant reduction in employment took place in 2001 associated with the expiration of the SLA. Indeed, in two of the other sectors associated with the primary sector (logging and support services), we observe a similar pattern with employment dropping following the end of the SLA prior to the introduction of the new policy measures. Employment in the wood manufacturing sector has remained relatively steady since then. We do not observe any changes in earnings specific to BC attributable either to the trade actions or policy changes: the trends in place in BC parallel trends elsewhere in the industry across Canada regardless of the sector. There are changes in the monthly variation in employment in BC in the support and wood manufacturing sectors following the policy changes but we are unable to rule out the possibility that some of this may reflect changes in the way data is collected.

In order to provide the context for these observations and to extend our analysis of the impact of the tenure changes we conducted a series of interviews with various stakeholders. The purpose of the interviews were to (1) identify what the various stakeholders saw were the key tenure changes; (2) to what extent such changes had affected firm behaviour; and (3) the consequences flowing from those changes ioncluding those observed in the data. Our interviewees included government officials, representatives of different regional associations representing larger companies, as well as representatives of smaller independent contractors, union and community representatives.

What Were the Important Changes?

Generally speaking all stakeholders identified the following two tenure changes within the suite of policy initiatives as the most important:

- dropping appurtenancy; and
- enhancing transferability.

All stakeholders (government, industry, labour and community representatives) saw these changes as providing the policy environment in which firms would be freer to close uneconomic facilities (since dropping appurtenancy also included eliminating mill closure rules and timber processing clauses). Dropping appurtenancy removed an important cost of closing uneconomic facilities (i.e. loss of tenure). This and the enhanced transferability of tenure increased the opportunities for firms to seek efficiencies through acquisitions and mergers. It was apparent from several of our interviews with industry representatives that the previous 5% take-back rule upon transfer, plus the need for Ministerial approval, appear to have been the most significant barriers to mergers and acquisitions. One industry representative suggested that the ability to consolidate and subdivide tenure could be used in concert with acquisitions and mergers to restructure a firm's operations but no one pointed out that this occurred and it was not identified by any other interviewee as a key factor.

The tenure take-back was an important issue for industry representatives and government representatives; it was of less importance from the labour and community perspectives. Industry focused on the negative aspects of the takeback, including unanswered questions at the time of its introduction about the level of compensation. More important from their perspective however were the unanswered questions as to whether or not the reallocated volumes would flow back into the market in a timely fashion. Government representatives saw the benefits from the takeback as not only providing increased volumes for timber auctions and thereby supporting market pricing but also assisting in efforts to escape the existing US trade actions. The takeback also helped the government meet political commitments to provide timber volumes to First Nations and communities. Cut control and take-or-pay were not seen as issues at the time of our interviews.16

In terms of changes in firm behaviour, from an economic perspective, the most important changes in the attributes of tenure were modifying the processing and transferability requirements as either of these could be expected to change the opportunity costs facing firms and lead to a change in behaviour. From the perspective of several of our interviewees, however, dropping appurtenancy sent a signal that such closures had become more "politically acceptable" (although it was arguable to what extent appurtenancy had been enforced prior to the change). All of the interviewees felt that these tenure changes had permitted firms to pursue rationalization and acquisitions more vigorously. None saw this, however, as a fundamental shift in how firms operated; rather, it was framed (at least from the labour and community perspective) as a shift in government expectations with respect to the social obligations of tenure holders that had previously existed (i.e. the "dismantling of the social contract").17 Firms are no longer required to provide regional social benefits such as the maintenance of employment.

16 For take-or-pay this is because the policy has only recently been introduced; in regards to cut control while it was seen as potentially destabilizing community stability (UBCM 2002) by making harvests more variable most of our interviewees did not consider it to be of consequence (at least to date) although one labour representative did think that cut control could become an issue in the future by creating more gyrations in harvest volumes.

17 "The government is once again attacking rural BC by its complete abandonment of the social contract…" Dave Coles, CEP…"The liberal government is tearing apart the social contract upon which this province was built" Joy MacPhail, NDP leader (MacLennan 2003).

The Consequences of Tenure Change

In addition to the objectives that government could implement directly through the tenure changes (diversifying tenure ownership and expanding timber auctions) the Provincial government also hoped that the industry would become more competitive through increased efficiency as well as drawing in new investment. Indeed, following the tenure changes, there was an escalation in acquisitions and mergers. This activity built upon the steady improvement in efficiency over time that had been accomplished through shifting production towards larger mills and closing down smaller mills as shown earlier in the data. However, our interviews showed that there were other consequences from the rationalization and consolidation that had to be taken into account. These included:

- Changes in industry structure;
- Potential impact on government revenues; and
- Community impacts.

In the next section we first discuss the outcome of efforts to both diversify ownership and enlarge log markets. We then describe in more detail how firms responded following the tenure changes and to what extent they may have contributed to increased efficiency and drawn in new investment. We then discuss the consequences of the rationalization and consolidation that has taken place within the industry (much of this section is drawn from Niquidet, Nelson and Vertinsky 2006).

Changes in Ownership Patterns

Indeed several of the changes were designed to have a direct impact upon the distribution of tenures: first, removing many of the restrictions around the transfer of tenure; and second, the 20% take-back from major tenure holders to be redistributed to BC Timber Sales, communities, and First Nations. It was also anticipated that the changes would draw in new entrants that could help revitalize and diversify the industry. Under the tenure take back 8% was allocated for First Nations and 2% for community forests with the other 10% to be allocated to BC timber sales. The ongoing redistribution of rights has turned out to be a slower process than expected, in part due to the need to reach compensation agreements with companies and government requirements that the volumes allocated to BC Timber sales be reflective of the tenure held by the companies (in order to ensure that the market pricing systems will work well).

The tenure changes have led to increased volumes that flow or that will flow to communities and First Nations. Currently there are 13 community forest licenses with applications invited for an additional 25 (BCCFA 2005). Under the Forest and Range Agreements over 9.8 million cubic metres in aggregate to date has been awarded to FN.18 The most noticeable change in ownership occurred on the BC Coast, with a new owner (Cascadia) emerging from the restructuring of Western and the purchase of Weyerhaeuser's tenures and private lands. Within the Interior, much of the acquisition activity involved existing companies although there were some smaller entrants purchasing some of the mills divest by the larger companies. In terms of whether diversification of ownership would draw in new investment, certainly on the BC Coast the hoped-for investment has yet to materialize in any significant amount. Indeed the most prominent new owner, Cascadia, appears focused on

18 This is the total volume allocated under the agreements, which are non-replaceable and span several years (see http://www.for.gov.bc.ca/haa/FN_Agreements.htm for an up-to-date list with links to current agreements).

wringing existing efficiencies out of operations and restructuring its timber holdings rather than undertaking any new kind of processing investment.

Seeking Efficiency Through Rationalization and Consolidation

Much of the efficiencies observed earlier were driven by rationalization within a company that closed its less efficient mills with those volumes diverted to other mills that have had capacities increased either by adding extra shifts or by capital improvements. Indeed as we saw earlier overall capacity has expanded in both the southern and northern Interior. Examples of such closures include Pope & Talbot (the Midway mill)19, Canfor (the Taylor mill and Upper Fraser mill), Doman (Saltair and Silvertree mills) and Weyerhaeuser (Vavenby sawmill). In instances where larger more efficient mills were not in close proximity, smaller mills and their associated tenure have been sold to independent manufacturers (e.g. Canfor divesting the Slocan Valley and Valemount sawmills and tenure).

These transactions suggest that there were efficiency gains to be obtained by reconfiguring company organizations. There appeared to be some clear synergies and economies of scale to be gained by consolidation, particularly in regions in the Interior suited for high output commodity production (Northern Interior and Cariboo). These regions are characterized by flat terrain that facilitates the movement of logs over longer distances and are dominated by relatively uniform pine-spruce stands. On the other hand, mountainous regions and areas which have a diverse species and grade profile (e.g. Robson Valley, North Thompson, Interior "Wet Belt") appear to be less able to gain from scale, hence we see large commodity producers divesting their holdings in these regions and new entrants (e.g. Springer Creek Forest Products Ltd., Northwest Specialty Lumber) focused on flexibility and value joining existing independent producers with the same outlook.

We earlier noted that the goals of the Provincial government had been to increase the competitiveness of the industry. Figure 33 shows the operating profit margin for wood manufacturing firms in BC compared to the rest of Canada. Here the improvement in BC is quite striking in 2004 suggesting that there was an immediate economic payoff relative to other Canadian firms (as other Canadian firms are largely selling into the same market so the difference must be due to changes in the costs of operation rather than changes in revenues).

19 This was later reopened albeit at a reduced level of operations (Sinclair 2006).

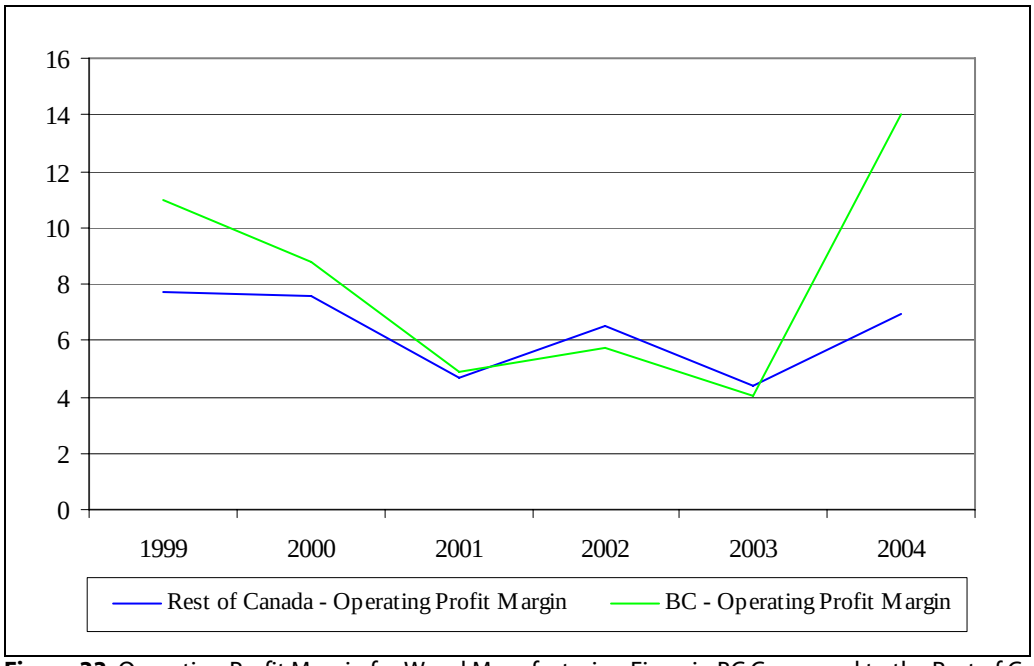

Figure 33. Operating Profit Margin for Wood Manufacturing Firms in BC Compared to the Rest of Canada

In terms of the other goal of drawing in new investment the results are somewhat mixed. While there has been investment in processing capacity for beetle wood (the expansion of the super size mills) it has not been matched elsewhere in the province. Indeed, on the BC Coast, there is a dearth of investment despite not only the tenure changes but a revamping of the stumpage system, and both harvest levels and production remain disappointing (Truck Logger 2006).

Some interviewees also thought that there would be more new entrants in the value-added manufacturing sector, particularly in the Interior. The lack of development in this sector is also counter to the belief held by the 1991 FRC that envisioned that increasing the amount of timber allocated by competitive means would result in the emergence of some smaller firms that produced higher valued, more labour intensive products. There could be several reasons for this. As we mentioned above, smaller independent manufacturing seems to be best suited for particular isolated regions where geographical factors (transportation costs and species diversity) limit the ability to gain economies of scale. Furthermore, the current duties expressed as a percentage of value are a greater barrier for producers of high-valued products, and in the Interior tenure take-back and the subsequent uplifts in BCTS volume have been subject to delays and is not yet fully operational. A more likely explanation though, is given by Haley and Leitch (1992). They provide an exhaustive analysis of the impact competitive timber markets will have on the solid wood products sector in British Columbia. They critique the FRC suggestion that more value-added manufacturing will occur as more timber is made available; showing that distance to market, labour costs, transaction costs and a host of other issues would prevent the growth of this sector in spite of increased access to timber. Their conclusions now seem prophetic:

> "the creation of competitive timber markets would reshape the structure of the forest industry. However, it is likely that these changes would be incompatible with public objectives for the industry. The net result would probably be a more concentrated primary processing sector in the Interior and relatively smaller independent sawmilling and further manufacturing sectors".

The government did undertake to auction off new short-term non-replaceable forest licenses associated with temporary harvest uplifts with the requirement that the successful bidders construct processing facilities other than lumber in order to divert those volumes away from the US market. It is not clear to what extent this "forced" diversification will be successful-it is anticipated that the successful bidders (one of whom proposed to create a wood pellet plant and the other an OSB plant) will likely use residues and deciduous material with any sawlogs going to existing sawmills in the region.20 It is also unclear as to what extent an expanded log market will draw in new industry. The BC government has already modified its policies regarding the immediate elimination of value-added set-aside sales over concerns expressed about accessing timber.

The Effects of Consolidation on Industry Structure

Table 3 shows the percentage of AAC held by the top 5 and 10 firms in BC at selected points over the past twenty years. Since 1990, it appears that concentration (measured at the provincial level) has dropped for both measures but this masks significant changes within different regions in the province. In 1990 two firms accounted for over 25% of the AAC but were also geographically diversified with holdings in the Interior and on the Coast; by 1996 divestitures by these two firms had reduced their holdings to just under 14%.21

Table 3. Changes in concentration in AAC held by the top 5 and 10 firms in BC and the Ministry of Forests for Selected Years (in % of AAC)

Changes in concentration in AAC (in % of AAC)				
	1976	1990	1996	2006
Top 5	40.6	43	34.2	34.6
Top 10	58.7	59	53.9	45.5
Ministry of Forests	n.a.	14.5	17.5	>20*
Provincial AAC (millions m3)	21.6**	74.5	70.9	83.5

**based on allocation to BCTS from take back to be finalized in 2006 plus Forest Service reserve*
*** millions of cunits*
Source: Pearse 1976; Nawitka Resources 1990; BC MOF

The four major acquisitions that took place within the province each had a regional focus. The first was Canfor's acquisition of Slocan in the interior of BC (the subsequent sale of Slocan's southern operation meant that its operations were now concentrated in the northern Interior). In December 2004, West Fraser bought Weldwood of Canada expanding its size in the Cariboo. In October 2004 Tolko Industries outbid Interfor for Riverside Forest Products Ltd expanding its existing operations in the Cariboo and the Okanagan. On the Coast, Brascan Corporation (now Brookfield Asset Management) bought the coastal assets of Weyerhaeuser, separating the management of private forest land assets into one company and the public forest tenures and manufacturing into another (Cascadia). Having already a large stake in Western Forest Products, they subsequently merged Cascadia with Western and have emerged as the predominant firm on Vancouver Island. Therefore

20 One of the two licenses originally slated to support the OSB plant has recently been returned.
21 The two companies were BC Forest Products/Fletcher Challenge and Noranda/MacMillan Bloedel; by 1996 Noranda had sold off MacMillan Bloedel and Fletcher Challenge was in the process of selling its Interior operations.

while by overall measures concentration appears to have decreased slightly since 1990, regionally concentrated local markets have emerged.

Impact on Government Revenues

At this point it is premature to identify what impact such changes may have on revenues as harvest levels have been strongly influenced by the Mountain Pine Beetle. Over time it is certainly the government hope that improved efficiencies and new investment should be able to enhance the return to the Crown (through not only maintaining but expanding the harvest as well as the value of the products derived from it) and reverse the trend seen in Figure 4 (where government revenues per cubic metre of harvest were steadily trending down). One of the great uncertainties is what impact the recent consolidation within the industry will have on overall log prices where the government has been moving to expand log markets (through the tenure take-back) but local markets have become more concentrated.

Community impacts

This was clearly the area where interviewees felt there had been the largest impact. Earlier we discussed more general changes in employment and earnings within the different sectors. However ultimately many of these changes are felt at the community level where the impact of a mill closure can be magnified when it is the only industry in town. Indeed it was the area where labour and union representatives had expressed their greatest concern.22 In fact, in BC, there are 41 forest dependent communities (White 2005). The rationalization and consolidation has clearly affected many communities in the province who have either expressed concerns about reductions in employment or, in areas where harvest levels have increased, the potential consequences from the industry restructuring for the future of the community when harvest levels decline (Pearce 2005). There has not been any kind of assessment or studies yet of those impacts. We do observe that the ongoing redistribution of processing capacity through consolidation has led to an expansion of mills in larger regional centres while smaller mills are closing in more outlying communities. The Union of BC Municipalities (UBCM 2002) expressed concerns about mill closures in regards to the loss of property tax revenues and impact on local employment. We have collected some preliminary evidence of changes in assessed home values for forest dependent regions in the province. On average, for the forest dependent communities for which we had information, average home value assessments increased by 2.3% between 2002 and 2005 (a decline in real terms) while for the province as a whole (including those communities) average assessments increased by 35.5%.

22 "I think this is going to create more instability in our communities and industry than it's going to cure" Mike Haggard, IWA (MacLennan 2003).

Table 4. Changes in Assessed Home Values for Selected Communities ($)

Changes ($)			Change (%)
Community	*2002*	*2005*	
Midway	99,200	87,583	-11.7%
Port Alice	95,000	74,174	-21.9%
Slocan	65,756	59,714	-9.2%
Valemount	77,400	78,998	2.1%
Vancouver	400,000	585,798	46.4%

Source: BC Ministry of Community, Aboriginal and Women Services

Table 4 shows changes in assessed values for selected communities. These represent communities mentioned in the text or, in the case of Port Alice, the closure of the pulp mill during the period (it has subsequently reopened but is included as an example of the magnitude of the change that can take place). We include Vancouver as an example of a community where mill closures took place but there was no impact on property values given its diversified economic base.

It should be noted that there is considerable variation and that some forest dependent communities saw assessed values rise at the same rate as the provincial average. Clearly this analysis does not take into account other factors that may mitigate the closure or threat of closure of mills within a town (indeed we discuss this in the final portion of the paper); however, it does illustrate the potential magnitude and economic impact that such closures can have on communities, not only leading to a significant decrease in wealth, but also the attendant impact upon local tax revenues.

The expansion of the community forest license program and increased allocation of timber to First Nations does not appear to have fully addressed community concerns (indeed many of the existing community forest license holders and some First Nations that have had agreements for several years express concerns about the economic viability of their tenures).

5.0 Policy Implications

What lessons can we draw from the experiences in BC? First we note that given the market forces currently operating and the nature of the industry (i.e. commodities and cost competition with little differentiation), there will continue to be a constant downward pressure on prices. Therefore Canadian firms will continuously seek to lower costs. Since wood costs are likely to increase as the higher quality and more accessible stands are harvested, capital intensification and consolidation are the key to cost cutting (Canadian employees in the forest products industry are among the highest paid among forest products industry workers in the world). In BC the tenure changes were designed to expose firms more fully to market forces. By granting firms increased flexibility though removing various constraints on their actions, the BC government enabled firms to adapt more quickly to the competitive pressures they were facing. At the same time, one of the consequences has been a reduction in employment with the associated community impacts.

To sum up, the existing tenure changes appear to have hastened trends that were already in place due to existing market forces. Indeed the changes allowed firms greater scope to reduce costs through rationalization and restructuring with one consequence an accelerated reduction in employment. The tenure changes do not appear to have changed firms' focus on cost competitiveness as their key strategy. While there was some small increase in investment it reflects the need to address short-term increases in harvest. The changes to date do not appear to have encouraged either new entrants or investment in the development of new products or offer any kind of offsetting investment that would help expand employment. While a very important contributor to regional economies, this means that even in the short run forestry cannot be expected to serve anymore as a major instrument of regional development.

For those communities in BC that are dependent on the forest products industry, consolidation means that only some of these communities can survive without diversifying their economic base. Efforts by governments (through regulation and other means) to maintain employment in the industry can be successful by only temporarily reducing incentives for communities to change and adjust, thus creating an unstable economic base for all communities. Maintenance of the status quo reduces the awareness that change is inevitable making it politically difficult to make the case that change is required. Perhaps the best example of the perverse consequences that policies to maintain the status quo artificially can have is that of fishing communities along the East Coast, where efforts to maintain the status quo for the cod fishery eventually led to a widespread collapse that affected virtually all communities.23 While policy makers can choose to try to delay the reduction in employment in the forest sector that is inevitable in the long run they may lead to eventual collapse of the sector.

What is then a prudent regional policy that balances short term and long term objectives of regional sustainable development? There are currently a number of research efforts underway to identify how communities respond to adverse economic events such as mill closures or harvest reductions

23 The West Coast salmon fishery would be another example and perhaps more accurate as here it was the introduction of farmed salmon and reduction in prices that directly changed the economic prospects of the fishery yet the policies (up until recently) remained unchanged.

and what factors explain the relative success of some communities in adjusting to those changes in hopes of deriving policies to mitigate these impacts (Ambard and Patriquin 2006). Some argue that the focus should not be on communities but rather on aiding displaced workers and that the community focus may divert resources from individuals that need assistance the most (Robertson 2003). However most commentators place the primary emphasis on what strategies may assist communities in coping with what can be the economic and social turmoil caused by significant job loss (Kusel 1991). If all the existing communities can not be sustained it is important to target those which have the best chance of survival, .i.e. the most resilient communities.

Case studies dealing with communities that adjusted successfully following mill closures or some other such events (see, for example, the description of the how the Finnish community of Vuohijårvi responded to the closure of its plywood mill by shifting to veneer and furniture production in Ambard and Patriquin 2006) can provide insights about community characteristics that ensure resilience. It is our observation that oftentimes the relative success of communities is linked to factors such as the presence of local amenities and local infrastructure (not only transportation but also services) that affect the ability of the community to pursue alternative viable economic opportunities. This is supported by Harris et al (2000) who list factors thought to positively influence community adaptability to change. These include: larger population sizes (greater than 5,000 people)[24]; greater economic diversity; strong civic infrastructure (including civic leadership); the presence of amenities (both civic and natural) and location (situated on major trade routes and near service and tourist destinations). If only resilient communities should be targeted for interventions that ensure that they adjust and survive, what should be done about the others? For these communities transition programs must be considered as the communities shrink or cease to exist. We would suggest that revenue sharing (in order to ease the burden on the community as the tax base is reduced) and providing assistance to affected workers through job retraining and relocation assistance are appropriate policies to consider. Such programs would be essential from a political perspective as government in this case cannot be seen to "be doing nothing". However such assistance programs should have definite life spans so that the programs are not sustained indefinitely.

What should be the policies that focus on the resilient communities? Several authors have proposed that local control over resources be allocated to communities as a means of providing the tools for those communities so they can forge their own well-being (Pearce 2005; Kusel 2005; Ambard and Patriquin 2006). Both in Canada and in the US, some local community leaders and local government officials are promoting the idea of "community-based forest stewardship, a concept that involves the local community in forest restoration activities" (FPL 2006). This is also encompassed in the Community Economic Development (CED) approach that emphasizes a collaborative effort at the community level using local resources to pursue economic development rather than relying on outside actors (either government or large firms) (Markey et al. 2005).

While increasing the local scope of control over resources may provide some economic opportunities that would otherwise not exist, the community will only be able to capitalize upon them to the extent there are viable economic opportunities. This, as suggested earlier, will depend

24 They state that populations below 1,500 are often associated with low resiliency.

upon other attributes of the community. A community forest will not necessarily solve or reverse community's economic woes when the local mill closes. In the US, efforts to promote forest restoration as an alternative are highly dependent upon developing markets for the product derived from restoration work (typically small dimension timber that is relatively high cost due to the need to the high labour component)-a challenge that has yet to be solved despite several years of effort.

While the tenure policy changes in BC did include the reallocation of tenure to increase the size of the community forest license program, and to directly allocate more timber to First Nations, this was largely a response to political demands for access to fibre. It is not clear to what extent such licenses would either be targeted towards communities losing employment nor to what extent they might generate new employment. Indeed many of the community forest holders are currently expressing concerns about the economic viability of their tenures and the government has responded with stumpage adjustments. For First Nations while the allocations are perceived as a step forward relative to the status quo many question their short-term nature (often under 5 years) and whether they can provide the basis for any sustainable long-term business investment. Trosper et al, (2006) found that lack of secure access to the land base for FN was seen as a barrier to their forest-sector based enterprises.

Other authors have proposed policies that include the transfer of expertise, government support and access to financing (Ambard and Patriquin 2006). In terms of government support (whether it be through direct financing or providing expertise) it is the reality that for many remote communities the costs of supplies and lack of infrastructure makes many businesses marginal. The danger of such approaches is that they do not take into account the local conditions that will affect the success of any new economic ventures. In fact such a view is not inconsistent with the CED approach that "top-down" and "make-work" programs directed by senior levels of government are unlikely to yield lasting success (Miller 2000).

We argue that a more strategic shift in regional policy is required that allows market forces to determine the consolidation patterns of the traditional commodity based forest products sector, while creating opportunities for the emergence of forest related "added value" innovation cluster in some communities while helping the economic diversification of others.

The decisions which communities should become efficient centers for production of traditional commodity forest production should be left to the private sector. Government role in this case is to remove constraints on the consolidation process permitting market forces to affect these decisions. Communities with attractive lifestyle related characteristics can become the loci for economic diversification efforts. Some forest-dependent communities in BC such as Ucluelet on Vancouver Island and Vernon in the BC interior have been able to draw upon their ability to provide amenities that can support either tourism or attract other businesses. Their abilities to do so are reflected in property assessment values that rose 73.5% in Vernon and 37.4% in Ucluelet between 2002 and 2005.

These and other communities close to unique resources (including e.g. a pool of unemployed skilled people) can be targeted for cluster development. This could be done through the creation of technical regional schools, training programs and applied research facilities and provision of

appropriate infrastructure. It should be clear, however, that government recognizes that the pre-existing conditions should be in place-attempting to target value added creation in remote areas where there is job loss and an out-migration of younger people is unlikely to be successful. Indeed this has been one of the problems of BC's value added timber sales program that attempted to promote value added through the province; the timber was really only utilized in areas such as the Okanagan, South Coast, and to some extent in the Kootenays where there existed the workforce and capacity to support such activity. Elsewhere the timber was simply processed within local sawmills showing the difficulty in trying to stimulate new investment absent supporting market conditions.

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