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## Essays on the economics of British Columbian timber policy

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## VII. Summary, conclusions and future research

Timber resources remain an integral part of several regional economies in British Columbia (BC). This forest resource is rich in diversity, ranging in species, age, structure and accessibility (i.e. terrain and distance to markets). The institutions governing these resources are equally complex. Perhaps this is best displayed in the province's timber tenure system. An assortment of tenure types exist in the province, each with their own unique characteristics, history and purpose. Collectively, these tenures have been designed to meet a broad group of governmental objectives. These objectives include: encouraging investment in timber processing facilities, generating forest sector employment, maintaining community stability, collecting government revenue, promoting reforestation and supporting long-term sustainable forestry.

Balancing these objectives throughout time has proved to be challenging. This was particularly true given the softwood lumber dispute with the United States (US). Access to US markets hinged on the BC government proving that it collected "adequate remuneration" for its timber resource (which according to the US can be shown by auctioning timber through open competitive markets) and by allowing market forces to dictate forest sector activity (US Department of Commerce 2003). The BC government created the Forestry Revitalization Plan (FRP) in 2003, largely out of a desire to satisfy these US conditions. The hope was this would provide its industry with unobstructed market access to the US, but also provide the industry the flexibility needed to adapt to heightened global competition. Did these policy reforms address US concerns? If not, how so? Did they affect the generation and distribution of timber rents? Were there both winners and losers? Also, why did the reforms not go further? In particular why was publicly owned timberland not privatized?

This thesis sought to uncover some specific answers to the above questions, but also searched to identify the factors which are driving timber policies in the province more generally. However, in doing so additional questions came forth. Furthermore, a complete answer to the original set of questions in many cases was not always clear. As a consequence, this chapter summarizes my key findings and conclusions; however it also includes a section which outlines future research needs.

### **Thesis summary and general conclusions**

The review of BC's storied forestry history in chapter 2 shows that policies pertaining to timber in the province are in a constant state of flux. However, particular policies were far more sweeping than others and had more noticeable impacts for years to come. Each of these major policy shifts seemed to be precipitated by a change in the market outlook for timber and was shaped by economic demands at the time.

Endowed with an enormous stock of old growth timber and projected shortages in other regions, at the turn of the century a newly developing province starved for infrastructure designed a system of public forest management to lure investors to develop a domestic forest processing sector. Next, Sustained Yield (SY) management and

enhanced utilization standards offered secure timber supplies to an emerging, capital intensive, post World War II pulp industry which in turn met the province's regional development goals and promoted the adoption of new technology in sawmilling. Later, an abnormally high lumber market afforded the province the opportunity to address rising environmental concerns.

Conditions did not stay static however; BC faced a completely new setting at the start of the new millennium. The natural competitive advantage of its mature timber stock had diminished as accessible supplies dwindled and technological advancements (engineered wood products, tree breeding etc.) meant that substitute products derived from intensively managed short-rotation species in other regions could now offer plentiful supplies at a potentially lower cost (Sohngen et al. 1997). On top of this, the provincial government's customary interventionist approach in the forest sector was a continued trade irritant with the US. Faced with restricted access and increased competition in its traditional marketplaces, the pressure for institutional change became unbearable.

This institutional adjustment, encapsulated by the FRP, like others in the past was born out of current economic conditions. In this case, institutions needed to adapt to allow the provincial forest sector to expand its market access and to become more efficient. Indeed, this thesis shows that in many ways the FRP and its associated legislation did exactly that; implementing long overdue reforms which had the effect of substantially increasing the wealth derived from the forest and addressing several long standing issues associated with the trade dispute. In terms of the former, foremost among these were the changes to:

1. *Utilization policies* - new 'take or pay' utilization policies which charge stumpage in a fixed manner eliminate the incentive to high grade the resource and as a result the need for command and control policies aimed at countering this distortion. This will establish the proper intensive margin, increasing the rent available from public timber (see chapter 3; Uhler and Morrison 1986; Paarsch 1993)
2. *Timber auction practices* – The size of the timber sale and the level of competition were shown to significantly impact the value of standing timber in BC (chapters 4 and 5). The province therefore stands to gain by eliminating practices which limit timber sale size and competition. This appears to be the case with the changed mandate and operation of the government's timber auction agency (see change from Small Business Forest Enterprise Program to British Columbia Timber Sales in chapter 5).
3. *Processing regulations* – traditional timber processing regulations embedded within several tenures are expensive (see chapter 5). These costs are due either to restrictions which limited where timber flowed or because of distortions caused by the tenure award process (they created an incentive to over-employ capital and labour). The government's new practise of awarding tenures solely based on price and the elimination of appurtenancy requirements tying timber from existing tenures to certain manufacturing facilities abolishes these costs. Furthermore, added freedom to close mills and transfer tenures appears, in some instances, to be fostering a more resilient industry in the long run (see chapter 3).

The above reforms, along with an administered stumpage system based on auction results, were also a necessary condition for free trade with the US (US Department of Commerce 2003). It turns out that they were not sufficient however, as softwood lumber flows from BC to the US are currently still restricted. It is difficult to say whether these continued restrictions are due to “old fashioned protectionism” (McNabb 2005) or because of outstanding issues such as sustained yield management, log export restrictions and the workings of administered stumpage systems based on transaction evidence (see chapters 3 and 4). At the very least, it seems to me the reforms have served to strengthen BC’s future bargaining and legal position with the US.

The research in this thesis also revealed that the FRP significantly re-distributed timber rents, creating both winners and losers. The big winner appears to be the provincial government. Their new policies not only generate more rent but through more open competitive timber auctions they also stand to increase the amount of rent that they collect.<sup>1</sup> However, to some extent this came at the expense of industry and labour, as rents that were once dissipated were benefiting these groups either directly or indirectly. This is summarized below:

- Prior utilization standards which made logging companies remove lower quality logs were rent reducing. However, the pulp sector, particularly on the coast, relied heavily on these logs to furnish their mills (see chapter 3). Likewise, undersized timber sales reduced the available rent from public timber, but provided opportunities for small producers (see chapter 5).
- Uncollected rents not captured by administered stumpage systems were capitalized into the value of timber tenures held by major companies. New stumpage fees derived from timber auctions have the potential to transfer wealth away from tenure holders (see chapter 3; Binkley and Zhang 1998).
- Labour and capital lost their value as the previous tenure award process indirectly gave them a claim to resource rents. This loss has the potential to impact forest dependent rural communities as this award process was being used to retain or attract labour and capital to specific locations (see chapter 5).

Referring back to the stated goals of the FRP in chapter 1, I therefore conclude that the goals of increasing competitiveness by allowing “right sizing” and freeing timber to flow to its highest value use are on their way to being achieved (log export restrictions still hinder this process). Nevertheless, these goals, in some areas and for some parts of the forest sector, potentially conflict with the healthy forest sector and healthy community objective. They may also conflict with the goal of generating new entrants; for as economies of scale are exploited, additional entry barriers may be erected (regulated harvesting quotas and transportation costs already act as entry barriers, see chapters 4 and 5).

Moreover, further decentralization advocated in the past aimed at strengthening

<sup>1</sup> The exception to this might be in the Fort Nelson zone where timber auctions were not subject to much competition. As a result, stumpage fees from auctions may well be lower than administered fees. See chapter 4 for more details.

private property rights over forestland (Haley 1985; Zhang and Pearse 1996) if not designed carefully could be inconsistent with other public objectives for the forest. Chapter 6 demonstrated that the purported inefficiencies in the tenure system (i.e. its lack of incentives for investment in silviculture) have likely been over-stated, as the private sector would have little incentive to perform basic reforestation activities on much of the forest estate even if given the securest form of property rights.<sup>2</sup> As a consequence, the traditional practise of granting rights to mature timber but not land may very well be appropriate for much of the province's forest estate (particularly lands of lower productivity in the interior region and steep, isolated regions on the coast).

On highly productive accessible sites in both regions, where intensive timber management is suitable, stronger property rights may well facilitate greater investment and innovation on the land. This could relieve pressure on existing stocks of natural forest valued for their public goods (Binkley 1997). For it is on these highly productive lands where existing interventions in the timing of harvesting (i.e. sustained yield management) are most costly (see chapter 6). The amount of rent that sustained yield dissipates is substantially smaller on steep, isolated sites with low productivity however. Maintaining sustained yield management in these circumstances may be appropriate once one considers other non-timber benefits such as carbon sequestration and the provision of wildlife habitat. Future research should be directed toward quantifying these values and incorporating them into management decisions.

### **Directions for future research**

In my opinion, there are several other future research issues that need to be addressed. Perhaps foremost among them are the outstanding matters pertaining to the softwood lumber dispute. These fall into the following three categories, all of which are somewhat related:

1. Timber supply
2. Stumpage system and timber auctions
3. Log export restrictions

### ***Timber Supply***

A good start would be to address the question implied by Sedjo (2006); what would timber supply look like if the private sector was granted greater ownership and control over the mature stock of timber in the province? Would it choose to harvest it faster or slower than sustained yield? Several authors (Nordhaus 1992; Uhler 1991) have inferred that that private sector would liquidate timber much faster than sustained yield. However these intuitive appeals are not sufficient, particularly given recent deviations from sustained yield designed to address the mounting pine beetle infestation in the province. Can these harvest increases be justified economically? It seems to me that a robust analysis considering site specific timber characteristics, user costs and price

2 Silviculture is the practice of establishing, tending and managing forest growth. In chapter 6 it was shown that tree establishment (reforestation) on much of the interior landscape could not earn the cost of private capital.

effects is warranted. If it can be shown that SY (or other harvest targets) actually reduce timber production in Canada compared to a private market, perhaps the debate about stumpage fees is somewhat moot (Luckert 2006).

This work would also be interesting more generally as it also fits into the paradigm shift called for by Luckert and Williamson (2005). They argue, rather persuasively in my opinion, that SY attaches strong sustainability requirements to the wrong forest product (timber rather than public goods such as biodiversity). What would timber supply look like if it was constrained only by things like wildlife habitat and scenic quality rather than the even flow of timber? What impact would this have on community stability and prices in the North American lumber market?

### ***Stumpage system and timber auctions***

Related to the above, how should the province's timber auction agent, British Columbia Timber Sales, behave? Does the mandate of providing a representative sample of timber value in the province (all shapes and sizes and in all market conditions) conflict with the goal of producing an administered stumpage system that replicates a market? How do market-based administered stumpage prices respond to changes in downstream products like lumber? Does this result in similar prices and output responses at different points in the business cycle as producers in the United States? (Spelter 2006).

Further, is auctioning 20% of the timber supply sufficient to garner a competitive market price? Are spot market auction transactions efficient institutions given the specific nature of forest product manufacturing facilities? Are auctions the right mechanism for selling timber resources in all regions of the province given the presence of scale economies and high transportation costs? How might competition for BC's timber be expanded further?

### ***Log exports***

In chapter 4 it was suggested that the answer to the latter question in some cases may come by eliminating log export restrictions. If this was the final ingredient needed to resolve the softwood dispute, how might the location of timber processing change if there were both free trade in lumber and logs? Neoclassical economic theory and a previous study (Margolick and Uhler 1992), suggest that the province as a whole would benefit from such a change, but there would be both winners and losers. Is some form of compensation necessary, in order for this potential Pareto improvement to take place?

### ***Investigating the process of institutional change***

In general, any of the prospective reforms listed above will not be easy to implement politically as typically there are winners and losers and previous attempts to make reforms in these areas fuelled many public emotions (see chapter 2). Deviation from SY will inevitably be questioned from a timber supply security, community stability and sustainable forest management point of view; relaxing log export restrictions will be labelled as job exports; tenure reforms aimed at strengthening property rights face legal challenges from First Nations and members of the public will be concerned about the

effects forms of privatization have on their national heritage.

In some cases, reforms to existing institutions may not be warranted. However, in other cases change and adaptation is required as former institutions which were often put in place in response to previous circumstances are not suitable for current or future conditions. After all it is the adaptive efficiency of institutions which tend to explain a region's economic performance in the long run (North 1990). Broadly speaking therefore, future research and analysis may benefit greatly from the new institutional economics literature that North helped pioneer (Menard and Shirley 2005).

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