

EXHIBIT AB-S-118

The Brattle Group's Response to the DOC Supplemental Questionnaire Question 3

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In this document, we respond to the following question posed by the U.S. Department of Commerce (“DOC”) in its Supplemental Questionnaire to the Government of Alberta:¹

Q3. The Brattle Group’s study at 30 considers the change from the equilibrium log price resulting from the inclusion of crown stumpage in the price of logs (a parallel upward shift show [sic] in the supply curve in figure 9). This addition of stumpage raises the equilibrium price (and lowers the quantity of logs consumed). Explain how the inclusion of stumpage differs from the additional expenses that would be incurred by a private land owner holding forestry land for the purposes of raising and sell the right to cut standing timber.

We offer the following response:

In Section VI of The Brattle Report, we compare the economics of a log market with a system of private timberland ownership to one with a system of Crown timberland ownership.² Under the private system, the stumpage rates that the landowner receives are a share of whatever profits are generated from the sale of the timber less the costs of harvest. This is the shaded triangle in Figure 8 of the Brattle Report. Under Crown ownership, the harvester pays a fixed stumpage rate irrespective of the profits generated by the logs.³ The question above correctly notes that this institutional difference manifests itself as a shift in the supply curve in Figure 9 of the Brattle Report. Because the stumpage demanded by the Crown is not responsive to the profits generated by the logs, the Brattle Report concludes that fewer logs are harvested under the Crown system, thereby raising log prices.

The question suggests a comparison of the stumpage rates paid to the Crown by the harvester (*i.e.*, a cost to the harvester) to “expenses that would be incurred by a private land owner” (*i.e.*, costs to the landowner). Though we are unsure of the DOC’s precise question, we attempt to address it by responding to the following two questions:

- Why, under the private system, the harvester views stumpage costs as separate from its supply curve, whereas, under the Crown system, the harvester views the stumpage

¹ Letter from Dana S. Mermelstein to Lawrence A. Schneider, May 12, 2017, *Re. Countervailing Duty Investigation of Certain Softwood Lumber Products from Canada: Supplemental Questionnaire for the Government of Alberta*.

² Berkman, Mark, Kevin Neels, and Charles Gibbons, March, 10, 2017, *Assessment of an Internal Benchmark for Alberta Crown Timber* (the “Brattle Report”) (Alberta Exhibit AB-S-24, submitted March 13, 2017).

³ By fixed we mean for a particular harvester across its logs at a point in time. These rates can vary with overall production levels and over time. For additional details see Brattle Report at 22. These rates are independent of the profitability of the timber, which is the key issue here.

payment as a direct cost that is incorporated into its supply curve (*i.e.*, why the supply curve is “shifted” relative to that of the private timber market curve)

- How stumpage in a private market is related to costs borne by the landowner in a private market.

We hope that our response adequately addresses the concerns that the DOC has and welcome the opportunity to clarify any further issues.

Whether under a system of private or public timberland ownership, the cost of harvesting timber will vary both across parcels and across trees within a given parcel. This variation in costs can reflect distances of parcels to mills, distances of particular trees to established roads, the terrain of a parcel, or any number of other factors.⁴ Thus, each log that comes to market will be associated with a unique cost of bringing it to market.

The value of a given log to a mill, on the other hand, is the same regardless of the log’s origin. The most that a mill is willing to pay for a log of a given size, species, and quality that came from a distant hillside is the same as it would be willing to pay for a similar log from an easily accessible stand nearby. This combination of common value of logs to the mill and differential costs to get logs to the mill implies different levels of profit (the difference between the value of the log and the costs of harvest and transportation) associated with different logs.

As rational economic actors, the landowner and the harvester will mutually agree to harvest all timber that provides any profit above the costs of harvesting that timber.⁵ The last stands to be cut (the “marginal” stands in economics vernacular), will be those that generate the lowest levels of profits. The value to the mill of the logs produced from these marginal stands just covers the costs of harvesting and transporting them to the mill, yielding hardly any profit at all.⁶

Under a private timber market, the landowner will share these profits with the harvester.⁷ All else equal, a landowner with highly profitable timber will earn more per log harvested than a landowner with less profitable timber. These profits are represented by the shaded triangle in Figure 8 of our report.⁸ The profits are higher for some logs (the “fat” end of the triangle) and smaller for others (the “skinny” end). In this market, there is no single “stumpage rate”; instead, there is a range of stumpage rates that depend upon the profitability of particular stands and that will range from high values down to zero.

⁴ Brattle Report at 29.

⁵ This holds after taking into account sustainability concerns and the intertemporal choice of the landowner regarding when to harvest.

⁶ Brattle Report at 29.

⁷ The allocation of these profits between the landowner and the harvester will depend upon the relative bargaining power of each party. Brattle Report at 29.

⁸ Brattle Report at 28.

Note that the discussion of profit here compares the price that the log fetches to the cost of harvesting that log (*i.e.*, costs to the harvester). “[E]xpenses that would be incurred by a private land owner,” as mentioned in the motivating question, do not enter this calculation. These costs are recovered through the share of harvesting profits (*i.e.*, the share of the “triangle”) that the landowner obtains through stumpage negotiations.

The situation in Alberta is quite different, however. Considering Crown timber in Alberta, every log, regardless of its profitability before accounting for stumpage dues, is charged the same stumpage dues per unit of volume. Rather than sharing profits between the landowner and the harvester, as in the case of private timberland, a fixed amount is charged.⁹ This institutional difference leads to different production decisions.

Consider an example. Suppose that there are two stands, each of which is made available for harvesting: (1) a stand with trees close to the road that generate \$10 of profit each and (2) a stand with trees far from the road that generate \$1 of profit each. Under a private timberland system, both stands would be harvested, with the harvester and landowner splitting the \$10 of profit for each tree from the first stand and \$1 of profit for each tree from the second.

Now suppose that the same stands are held under Crown ownership and stumpage dues are \$2. The first stand would be harvested, yielding \$2 for the Province and \$8 for the harvester per tree. The second would not be harvested because those trees would no longer be profitable to the harvester after paying the (fixed) stumpage dues.

As this example illustrates, the Crown stumpage system will tend to reduce overall harvests. This is because the fixed stumpage system is less flexible than a private system based on landowner-harvester negotiations over stumpage rates. The private system provides economic incentives for all profitable stands to ultimately be harvested, whereas the Crown system effectively establishes a floor of profitability that each stand must exceed before it would be harvested. Because fewer stands are harvested, the price of logs will increase.

The motivating question notes that these two systems imply different supply and demand analyses. Under the private system, the harvester has an economic incentive to harvest any timber that is profitable considering harvest costs alone, as stumpage is a share in what remains after paying those costs. The Crown system, on the other hand, requires that each log generate a minimum level of profit to cover the associated stumpage rates, leading to a shift in the supply curve. In the former case, the area between the supply curve and the price received for the log is shared between the (private) landowner and the harvester and, in the latter case (where stumpage dues are already subtracted), it is retained entirely by the harvester.

⁹ Brattle Report at 30.

Another way to understand the difference in systems is that, under the private system, the stumpage rates for the marginal stands are near \$0. Under the Crown system, the stumpage dues for the marginal stands are the same as for every other tree and are substantially above \$0.¹⁰ The total cost to the harvester (*i.e.*, including stumpage payments to the landowner) for the most profitable stands may be lower under the Crown system because the fixed Crown rate is lower than the share of the profits that a private landowner would be able to obtain. But the total costs are higher for the least profitable stands because the Crown demands more than rational private landowners would accept for this timber and, indeed, perhaps more than the profits generated by this timber.¹¹

It is these marginal stands that determine the supply and demand equilibrium because harvesters are nearly indifferent to leaving them standing or bringing them to market and decisions regarding these stands push log prices up or down. The equilibrium is not determined by average stumpage rates, which include rates charged to relatively high profit “infra-marginal” stands.¹² Rather, it is the stumpage rate on this timber that determines equilibrium log market prices. It is the higher stumpage rate charged by the Crown for these least profitable stands that leads to higher market prices and reduced output of logs under the Crown stumpage system. Consequently, as we pointed out, even if Crown stumpage dues are lower than the *average* stumpage generated by timber in a private market, what matters for market outcomes is the comparison between the level of Crown stumpage and the stumpage paid to the least profitable tree harvested.¹³

Furthermore, even if the log market is viewed as distorted by Crown stumpage rates, log prices are distorted *upward*, rendering the difference between log prices and the costs of harvesting logs an overestimate of the average residual value as defined in the Brattle Report. Therefore, the TDA data that Alberta proposes as a Tier 1 benchmark serves as a conservative benchmark source.¹⁴

¹⁰ Brattle Report at 31-32.

¹¹ Brattle Report at 30.

¹² Brattle Report at 31-32.

¹³ Brattle Report at 31-32.

¹⁴ Brattle Report at 38.