Optimal Rotation Periods: An Application of Contract Theory to Forest Regulation

by

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Abstract: In this paper we construct a general principal-agent model for a forest where asymmetric information about the cost type exists and this model is used to discuss contracts between a forest owner and a regulator. It is shown that the contract offered to the most efficient type must be based on differences in the objective functions between the forest owner and the regulator. However, the optimal contract offered to the least efficient type shall also include an incentive cost and this cost secure that the most efficient forest owner reveals the correct cost type. The general model is used to study various forest owner objectives such as maximization of the value of timber, maximization of the social welfare and maximization of a mix between the timber value and the social welfare. We also investigate the implications of regulator uncertainty about the forest owner objective function by using the model. Both when the regulator perceives a wrong objective function for the forest owner and when regulator is uncertain about the objective function, uncertainty may imply a lower welfare compared to full certainty about the forest owner´s goals.

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