

## THE EXPANDING HORIZONS OF FOREST ECONOMICS

This special issue of the *Journal of Forest Economics* begins with two papers that address the problem of price determination. A companion paper focuses the relation between expectation of future prices and a firm's demand for factors. *Joseph Buongiorno* and *Maria Luisa Chas-Amil* use a structural approach and focus the effects on various paper prices due to changes in production cost. The empirical analysis shows that prices of labour and energy are important in the determination of paper prices. The results can be used directly to analyse potential effects on forest product markets due to changes in labour or energy taxation within a specific country. The approach used by *Runar Brännlund*, *Karl-Gustaf Löfgren* and *Sara Sjöstedt* elaborates the idea that prices and quantities co-vary over time. Their model also allows a test of whether or not producers act as price-takers on the market for paper products. The approach may prove to be useful for improving forecasts of future prices and sales. The third paper in the first set of papers studies a forest company's demand in a dynamic framework. Demand for input factors presumably depends on expectations about future price movements. *Tommy Lundgren* and *Magnus Sjöström* estimate a rational expectation dynamic factor demand model for the Swedish pulp industry, using a detailed panel-data set covering the period 1972 to 1990. They shed new light on the adjustment costs for capital and the modelling of investments in a process industry. They find weak support for the hypothesis that the output level drives investment; the results suggest that the user cost of capital is a significant determinant of pulp industry investments. A surprising, and important result, is that pulp industry investments are insensitive to variations in the price of electricity.

This special issue also includes papers dealing with issues that expands the traditional boundaries of forest economics. *Alemu Mekkonen* addresses substitution possibilities between fuel wood and dung for Ethiopian households and estimates demand elasticities for fuel wood. His analysis has implications for poverty, deforestation and land degradation. He explicitly takes into account the fact that the households are consumers as well as producers of fuel. A macro oriented approach to deforestation is provided in the paper by *Elina Uitamo*. She buttresses changes in socio-economic conditions in the Philippines and how they affect deforestation in the country. Her main conclusion is that population density as well as the shares of tenant and small farms has an impact deforestation in the Philippines. Deforestation increases with a larger share of small and tenant farms and higher population density.

*Peichen Gong* looks at diversification of management alternatives decision making under of uncertainty when the forest owner is risk-averse. This issue is little studied, and while the analysis belong to the set of issues that can be subsumed under the rubric of "classical forest economics", management under uncertainty has implications for the issues raised in the papers of Mekkonen and Uitamö. Gong provides an empirical illustration showing that the optimal strategy is to divide the stand into two parts of equal size and harvest one part a year later than the other. This harvest strategy can significantly reduce the variance of the net present value, although at the cost of a slight decrease in the expected net present value. Diversification of the harvest decision depends on the size of the stand, the fixed harvest cost, discount rate and site quality.

Many recent papers in the literature look at the role of forests in national climate policy. *Johanna Pohjola's* paper targets the economywide effects (in Finland) of emission limits on net and gross emissions of carbon. The forest owners are given an incentive to increase the amount of carbon in the forest via a carbon tax. The efficient tax rate on emissions seems to depend on the ability of export sectors to shift costs abroad. Pohjola finds only minor difference between the welfare losses associated with stabilizing net and gross emissions, with an edge towards reducing net rather than emissions.

The final paper in this special issue brings in yet another dimension; valuing non-market benefits from forests. This is an active area of research, often being based on the use of contingent valuation or related survey methods. *Erkki Mäntymaa* provocatively argues that the current popularity of using willingness-to-pay (WTP) rather than willingness-to-accept (WTA) questions is unfounded. Indeed, the WTA-question is often more natural, given the typical property rights assignment. There are several problems in using the WTA-question and one is the specification of the budget constraint. If compensation is actually going to be paid, the resources has to be taken somewhere, i.e. there is a social budget constraint. The application shows that explicit mention of a social budget constraint significantly affects the compensations claimed.

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