Faustmann Forest Economics in Eastern Europe

Forestry science and practice in Eastern Europe have now for one decade been exposed to the challenge of understanding and adapting to market economics, implying *inter alia* that the Faustmann approach should be applied in forest investment analysis. It seems as if this aspect of western forest economics is particularly difficult to apply. This is not surprising. Even in countries where the approach was introduced about 150 years ago it is not fully endorsed, and forest management in Eastern Europe has for decades been based on central planning with no explicit economic investment criteria.

Forest science and practice in Eastern Europe have focussed on biological aspects of management and have here reached very high competency. However, there was no need for forest economics. For example, optimal rotation ages might be determined from maximising the volume of certain timber assortments. Lower rotation ages resulting from the application of financial investment criteria would have been disadvantageous to especially the Baltic countries, because by falsifying inventory data and reporting stockings below the targets set by technical criteria, they had large amounts of timber shipped from Russia for free.

In a centrally planned economy there was little room for flexibility in forest management, e.g. number of plants, thinning regimes, and minimum allowable rotation ages were strictly adhered to. This is still the case in these countries, at least in State forestry. But what will be the consequences of applying financial investment criteria. It is evident that this depends cru-

cially on the discount rate. We have recently analysed some implications of applying different discount rates *r* in Lithuanian forestry.[1]

For fast-growing species like birch and black alder, rs from 2 to 5 per cent would not imply rotation ages very much lower than those presently applied. But for the slower-growing broadleaves and conifers, covering more than 60 per cent of the forest land, the effect would be dramatic, e.g. an *r* of 2 per cent would shorten the current rotations between 15 years for Norway spruce and 45 years for oak. Consequently, mature timber would make up almost half of the total standing volume, with a value of 35 per cent of the GDP. If, e.g. two thirds of this capital is realised over the next 10 years, it could annually increase the GDP by 2–3 per cent (exclusive of multiplier effects).

Almost similar outcomes could be expected for the surrounding countries: Latvia, Estonia, Poland, Belorussia, and probably also the European part of Russia. With the exception of Russia, East European State forest agencies generate positive returns to the national treasuries, but nevertheless it might be argued that capital tied up in State forests should be used for more profitable/much needed investments, e.g. energy-producing facilities, financial assets, schools, hospitals. However, the negative effects of large-scale and swift increases in timber harvest on timber prices and environmental benefits should be taken into account.

Also, institutional settings and societal response should be considered. The classical normal forest concept is deeply rooted in East European forestry and by this the objective of non-declining timber flow. This perception should not be jeopardised, but gradually

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[1] Brukas, V., Thorsen, B.J., Helles, F. and Tarp, P. 1999a. Discount rate: a crucial choice for East European forestry. In prep.

Brukas, V. and Brodie, J.D. 1999b. Economic Optimisation of Silvicultural Regimes for Scots Pine Using Dynamic Programming. Baltic Forestry 1: 28–34.

converted into a *sustainable normal forest* concept, i.e. a normal forest structure within the financial rotations using a rational *r* and maintaining sufficient areas of old forest to ensure socially optimal production of environmental benefits. In Lithuania, a recent temporary increase of the annual cut by 50 per cent, mainly due to calamities, was met with public outcry, even if the cut was still less than half of the total annual increment. To this comes a high public interest in protecting and furthering the environmental benefits of forestry, and in Lithuania and Poland we have experienced that the Forest Service is conscious of these demands and very qualified for meeting them.

As a deliberate trade-off between the sustainability and stability from an East European perspective and the financial efficiency from a Faustmann standpoint, we suggest an *r* of 2 per cent or less for contemporary economic evaluations in East European State forestry, such *r* being already applied in Poland. In some cases, an *r* of 0 per cent (the forest rent principle) may be appropriate. Large-scale realisation of forest capital should not be a means to furthering economic development with the objective of making the countries qualify for membership of the EU.

The restitution of property rights and privatisation of forests in the Baltic countries constitutes another major challenge to the promotion of sustainable forest management. There may in a few years be 500,000 small private forest owners in the three countries. Privatisation of forest land is at present not an issue in Poland, but there are already 1.5 million small forest owners. Such owners need funds for other investment or consumption to improve their livelihood, so they would tend to apply relatively high rs. There is an urgent need for research on how/whether interference should be made with short-term profit maximisation behaviour.

Societies in East European countries will have to live with the consequences of discounting, and we suggest

that a *deliberately chosen r* in forest investment analyses should, in combination with environmentally balanced legislation, be viewed as an important agent for maintaining the sustainable development in East European (State) forestry.

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