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MARKKU PENTTINEN • ADJUNCT PROFESSOR

• FINNISH FOREST RESEARCH INSTITUTE

ANTREI LAUSTI • RESEARCHER • HELSINKI

SCHOOL OF ECONOMICS

## The Competitiveness and Return Components of NIPF Ownership in Finland

This article compares non-industrial private forest (NIPF) ownership return and risk characteristics with the forest industry stock, all stock, housing, office, and bond and debenture asset classes in Finland. A method for estimating the return on and risk of NIPF ownership in Finland over the 1972–2003 period is provided. The forest ownership return methodology split into (i) felling, (ii) price change, (iii) change in the growing stock and (iv) silvicultural cost components which has been developed is an innovation. The risk-adjusted competitiveness of asset classes, their correlation and the sensitivity of NIPF return is also analysed

The results are based on the national forest inventory (NFI) which, with the forest statistics information service (FSIS), not merely samples forest holdings and areas, but maintains systematic and comprehensive databases on stumpage prices, silvicultural costs, and felling volumes. The National Forest Inventories (NFI) have a long tradition in Finland, dating back to 1921.

The nominal average annual return on forest ownership of 8.4% consisted of a stumpage price change rate of 4.6%, commercial fellings 3.1%, silvicultural costs –0.35%, and volume change component 1.0%. The standard deviation of forest ownership return was 13.4%. The average inflation rate was 5.8%, so that the average real return on forest ownership was only 2.6%. This was clearly less than in many US studies. The average stumpage price change fell slightly below the average inflation level

The average nominal return on housing was 10.4% (standard deviation 11.4%) on forest industry stocks 13.4% (27.7%) on all stocks 14.8% (32.5%). The risk-adjusted Sharpe ratio analyses exhibited lower competitiveness for NIPF ownership (0.01) than that of housing (0.18), and was well below that of stocks (0.20). The nominal return on the total Finnish market portfolio was on average 12.9%, with a standard deviation 14.2%.

There was significant positive correlation between returns on forest ownership and private housing at 0.55, and between forest ownership returns and offices at 0.37. The correlation between forest ownership returns and stocks returns was very low, only 0.15. The felling value of NIP forests in 2003 currency has decreased slightly from 1972 to 2003, but its proportion of the total market portfolio has dropped from 29% to 6.8%. The value of the total market portfolio has increased from €149 billion to €523 billion during the same period. ■