

Abstract

The softwood lumber industry is a major source of trade between Canada and the U.S.. This industry accounts for about 2% of Canadian manufacturing shipments and 80% of the output is exported to the United States. The purpose of this paper is to evaluate the allocative and dynamic efficiency of the Canadian softwood lumber industry by testing for the existence of price-cost margins and decomposing rates of total factor productivity (TFP) growth.

A dynamic model of multiple output production and investment is developed in which output is sold domestically and exported. Price-cost margins are parameterized through shadow prices that affect variable profit and thereby output supply and input demand functions. The model is applied to the Canadian softwood lumber industry. Price-cost margins are estimated for both domestic and export markets. The empirical results show that prices are equated to short-run marginal costs in both markets.

The traditional measure of TFP growth is decomposed into four elements; technological change, returns to scale, price-cost margins and capital adjustment. The decomposition is based on the variable profit function. The empirical results show that for the Canadian softwood lumber industry TFP growth has averaged 3% per year. In addition, unlike many other industries, softwood lumber did not suffer a productivity slowdown and the main element accounting for TFP growth was the rate of technological change.

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