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Long-Term Supply and Demand Projections for Wood Products in Austria until 2020

A Contribution to the UN-ECE/FAO 'European Forest Sector Outlook Study'

Langfristige Vorausschau für das Angebot von und die Nachfrage nach Holzprodukten in Österreich bis 2020

Ein Beitrag zur UN-ECE/FAO 'European Forest Sector Outlook Study'

Peter Schwarzbauer

Over the past six decades, two UN organizations, UN-ECE (UN Economic Commission for Europe) and FAO (Food and Agriculture Organization), have been publishing long-term outlooks on the forest sector in ECE member states in a joint effort. The sixth of these studies since 1952, entitled 'European Forest Sector Outlook Study' (ETTS VI), was finished in 2005. The core of this study are econometric estimations and projections regarding supply and demand of forest products.

Because of the international relevance of its forest sector, Austria was selected as one of the countries to be analyzed in detail. As the scientific consultant to the Austrian Federal Ministry of Agriculture, Forestry, Environmental and Water Management in ETTS-related issues, I calculated the econometric supply and demand estimations as well as projections for Austria.

This report contains the Austrian contribution to the current European forest sector study ETTS VI and is an updated and enhanced version of the contribution to ETTS V (Long-Term Supply and Demand Projections for Wood Products in Austria. A Contribution to the Study "European Timber Trends and Prospects: Into the 21st Century", 1996). In order to reach an audience beyond the German-speaking world, this work is published in English with a summary as well as headings of tables and figures in German translation.

My special thanks go to Kari Kangas, UN-ECE consultant for ETTS VI, for his encouragement and scientific advice as well as to Stefan Weinfurter and Ewald Rametsteiner for the critical review of the manuscript. I also like to thank the Austrian Federal Ministry of Agriculture, Forestry, Environmental and Water Management for providing the funds to keep me involved in the process of this study in Geneva, which made this Austrian contribution possible.

Summary

This report contains the documentation of the Austrian contribution to the sixth European Timber Trend Study (ETTS VI) within the UN-ECE/FAO EFSOS process (European Forest Sector Outlook Studies; UN-ECE/FAO, 2005). It covers econometric estimates of supply and demand equations as well as projections for forest products until the year 2020 in Austria. In addition, projections are made for derived removals based on the production of forest products and net-trade of roundwood and other fibres. To be compatible, the general structure of equations and the exogenous assumptions are the same as those implemented by UN-ECE/FAO. However, there are some deviations:

- Supply and demand equations (elasticities) have been estimated using Austrian rather than UN-ECE/FAO data whenever possible.
- Raw material net-trade (roundwood, pulp, waste paper) is not entirely based on exogenous assumptions, but mostly on trendextrapolations.
- Plywood is deleted from the consistency analysis, because in the case of Austria it is almost entirely made of sawnwood (laminated sawnwood panels, blockboards).
- Projected removals are estimated using extrapolations of historical trends.

Three categories of *supply/demand equations* were estimated for industrial forest products:

- Import demand
- Domestic demand (from domestic production) = domestic supply (for domestic consumption)
- Export supply

Demand (consumption) is the total of import and domestic demand (from domestic production), supply (production) is the total of domestic demand (supply from domestic production) plus production for exports, net-trade is the difference between import demand (consumption from imports) and export supply (production for exports).

The *products* covered are:

- Coniferous sawnwood
- Non-coniferous sawnwood
- Particleboard
- Fibreboard
- Newsprint
- Other printing & writing paper
- Other paper & paperboard

Projections for plywood, veneers, fuelwood and other industrial roundwood were made based on trend extrapolations rather than on econometric equations.

A *consistency analysis* is required to check whether derived removals and projected removals match or to what extend they differ. While projected removals are estimated based on extrapolations of historical trends, derived removals are calculated from forest product production, conversion factors and net-imports of roundwood and pulp. In addition, waste paper utilization (in the paper industry) and sawmill residue utilization (in the pulp and panel industries) have to be considered when constructing the consistency check.

For the *projection of supply and demand* of industrial wood products, economic growth is *the* driving force. Similar to the general EFSOS approach three main scenarios with a 'base', 'high' and 'low' economic growth were developed. Conversion factors, elasticities and all prices are assumed to remain constant at the 2000 level. In addition, two alternative scenarios were tested with increasing (+0.5% per year) and decreasing (-0.5% per year) forest product prices.

Depending on the level of GDP- or end-use elasticities, some products react more sensitive than others to different assumptions on economic growth. The major differences of the scenarios are mainly based on the *trade equations* that usually have higher elasticities. Panel and paper trade react more sensitive than sawnwood. Variation in general economic growth has much more impact on the projections than variation in forest product prices.

One general important finding is that Austrian production of wood products (in all scenarios) can only be increased if *net-imports of roundwood, sawmill residues, waste paper and pulp rise* significantly. The share of raw material net-imports in total Austrian wood and fibre supply is expected to increase from about 27% (2000) to 33-37% (2020). The supply element domestic removals is characterized by a *continued difference between actual (fellings) and potential supply* (NAI). The share of domestic removals of the total Austrian wood and fibre supply is expected to decrease from about 48% (2000) to 37-40% (2020). Furthermore, the domestic element that shows the most significant growth, is recovery of waste paper. Regarding these aspects, the future for Austria is in line with the results for Europe as a whole in the EFSOS study.

Another general finding is that in terms of growth, Austria performs better than the entire current EU/EFTA region, but less well than the CEEC and CIS countries. This indicates that *Austria may lose some of its competitiveness to Eastern Europe*. However, compared to Europe as a whole (incl. CEEC and CIS) Austrian growth rates are quite similar.

Both derived and projected *removal growth rates in Austria and in Europe are well below the growth rates of product consumption and production of industrial forest products.* This fact alone should not be interpreted as an indicator of an upcoming physical wood shortage, but as a result of increasing recycling, increasing sawmill residue use, harvesting well below NAI and - last but not least - increasing raw material net-imports. In other words: while *Austrian removals* will remain the largest supply element for forest industries, their *relative importance will decline* substantially.

The EFSOS model structure does not allow an assessment of whether future raw material import quantities are feasible at all or where they should come from. For the Austrian forest sector *several consequences respectively options are possible* – separately or in combination:

1. Future import quantities of raw materials (roundwood, sawmill residues, recovered paper) *can actually be supplied by other countries/regions*. If this happens, production, consumption, and trade developments will be in line with the projections.
2. Future import quantities of raw materials cannot be supplied as projected by other countries/regions. This would result in a *reduction of domestic production* of industrial forest products as compared to the projections and – if demand is large enough – in an *increase of industrial forest products imports.*
3. Future wood and fibre shortage could be avoided by efforts leading to the *mobilization of unused timber resources* in the forest. Given the forest ownership structure in Austria and in many other European countries (high share of privately owned forests) mobilization of unused timber resources is a tremendous task for forest sector policy.
4. Future wood and fibre shortage could be avoided by *improved technologies reducing the input of raw materials*. In the light of technology developments over the past decades, it is questionable, whether there is much left for improvement regarding raw material use.

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