

Methodology Note:

UK Wood Imports & Exports

Introduction

Statistics on UK imports and exports of wood and wood products (based on overseas trade statistics published by HM Revenue & Customs) are compiled by the Forestry Commission (in association with the Forest Service in Northern Ireland).

Data are released twice a year. *UK Wood Production and Trade: provisional figures* is released in May alongside the *Joint Forest Sector Questionnaire: provisional figures* submitted to the statistical office of the European Union (Eurostat). Final figures are released in *Forestry Statistics* in September and in the *Joint Forest Sector Questionnaire: final data*. Estimates for the current year and forecasts for the coming year are submitted at the same time to the United Nations Economic Commission for Europe (UNECE) as part of the *Timber Forecast Questionnaire*.

The methodology and outputs relevant to UK wood imports and exports were reviewed in 2013. The review report is available at www.forestry.gov.uk/forestry/ahen-589ddl. The review identified a need to document the data analysis methods used in the production of the output.

This paper sets out the data analysis methods used to produce annual estimates of UK wood imports and exports.

Sources

The data sources used to estimate UK wood production are described in the Sources section of *Forestry Statistics 2013*:

www.forestry.gov.uk/website/forstats2013.nsf/TopContents?Open&ctx=9314380047FD5FFD8025731E00475FD7. They comprise:

- Published overseas trade statistics for intra-EU trade and extra-EU trade produced by HM Revenue & Customs (HMRC) and available at www.uktradeinfo.com
- Data from the Confederation of Paper Industries.
- Other data requests to relevant businesses concerning roundwood and chip exports.
- Estimates from the Expert Group on Timber and Trade Statistics: www.forestry.gov.uk/forestry/infd-5rabj3.

Methodology

A two stage process is applied to the estimation of statistics on imports and exports of wood and wood products.

Stage 1: Initial estimates from HMRC data

The data obtained from HMRC cover quantities (weights and volumes) and values of wood and wood products imported to and exported from the UK.

Data are downloaded at annual level for all countries combined (total EU and total non-EU). Products are restricted to those related to wood, pulp and paper and are downloaded at the lowest level of detail available (combined nomenclature CN8 codes http://ec.europa.eu/taxation_customs/customs/customs_duties/tariff_aspects/combined_nomenclature/index_en.htm).

Some imports data are also obtained by country of origin, to enable estimates of source for the main categories (as reported in Forestry Statistics 2015, table 3.8).

This methodology has been revised from 2016, for the production of 2015 estimates, to download the more detailed flat files from HMRC, rather than using the "Build Your Own Tables" facility, to ensure that estimates for below threshold trade are picked up at detailed product level.

Data are downloaded from the HMRC website in comma-separated values (csv) format and converted to Microsoft Excel format, before being transferred to SAS, a statistical software package (www.sas.com).

Data processing and analysis takes place in SAS and Excel. The processing steps are documented as comments within the SAS code and in the Excel spreadsheets. The data are combined within SAS, aggregates are calculated and exported to Excel.

The initial estimates produced cover the following product categories (corresponding to the categories requested by international organisations in the Joint Forest Sector Questionnaire):

- Roundwood - woodfuel, industrial roundwood;
- Wood charcoal;
- Wood chips, particles, residues and wood pellets;
- Sawnwood;
- Wood-based panels - veneer sheets, plywood, particleboard, fibreboard;
- Pulp - wood pulp, other pulp;
- Recovered paper;
- Paper & paperboard - graphic papers (including newsprint), sanitary & household papers, packaging materials, other paper & paperboard.

Methodology note: UK wood imports & exports

For industrial roundwood, sawnwood, veneer sheets and plywood, a softwood/hardwood breakdown is also estimated.

The HMRC trade data is initially assigned to JFSQ product codes on the basis of the latest cross-reference supplied by international organisations. The cross-reference provides guidance to countries on the allocation of detailed product codes to the categories covered in the JFSQ. A 6 digit level (Harmonised System, or HS) is available for use by all countries; for EU countries, trade data are also available at the 8 digit level (Combined Nomenclature, or CN). The initial UK estimates are therefore based on the 8 digit CN product codes. In producing these initial estimates, a factor of 0.5 is applied for products where only part of a code is assigned (generally for identifying tropical species).

Stage 2: Amendments to data

Historically, the initial estimates based on HMRC data have often necessitated adjustments, following liaison with practitioners in the trade. This is partly because detailed intra-EU wood trade data is obtained through a survey of businesses which trade above a particular value threshold. Businesses which trade below this threshold are only required to report the total value of their imports and exports. Therefore the trade data reported for individual products is based on a potentially biased survey. More information on HMRC statistics can be found at www.uktradeinfo.com.

In order to improve the initial aggregate estimates, amendments are then applied to specific product categories, making use of alternative data sources and expert advice. In particular:

- Revised import data for all the main solid wood and panel products are supplied by Timbertrends, under contract with the Forestry Commission. Raw HMRC data are purchased by Timbertrends and are downloaded, reviewed and where necessary, errors are corrected. This correction process is often based upon 'correct' data in close proximity to that in error. These errors are usually minor, but occasionally are significant.
- The Forestry Commission collects data on roundwood and chip exports directly from UK timber businesses that export these products.
- Expert advice on wood pulp and paper imports and exports is sought from the Confederation of Paper Industries.

The amendments made consist of routine changes, that are made regularly, and ad hoc changes (resulting from specific issues with that year's data). Further details are provided in the Annex to this note.

The amendments are received, processed and applied to the initial estimates in Excel. They generally only relate to import and export quantities; values are normally left

Methodology note: UK wood imports & exports

unchanged, as these are generally believed to be more accurate. However, when the quantity of a particular product category is set to zero, the corresponding value will also be set to zero.

Quality checks and unit conversions

A number of quality assurance checks, corrections and imputations are carried out at several stages of the data processing and analysis. They include testing for completeness (missing, duplicate or incomplete records), consistency between categories (such as intra-EU, extra-EU and total trade), consistency with historical data, sense-check of unit values and general sense-check of the figures by the Expert Group on Timber & Trade Statistics.

Where required, figures are adjusted using standard FAO/ECE conversion factors, listed below:

Product	m³ / tonne
Fuelwood, including wood for charcoal	1.38
Wood chips, sawdust, etc	1.48
Industrial roundwood (wood in the rough) - softwood	1.43
Industrial roundwood (wood in the rough) - hardwood	1.25
Sawnwood - softwood	1.82
Sawnwood - hardwood	1.43
Veneer sheets	1.33
Plywood, particleboard	1.54
Hardboard	1.053
MDF (medium density fibreboard)	1.667
Insulating board - density 0.35-0.5 g/cm ³	1.667
Insulating board - other	4.00

Methodology note: UK wood imports & exports

The following factors are used to convert to wood raw material equivalent, which indicates the volume of wood (in m³ underbark) needed to produce one unit (tonne or m³) of final product:

Product	Measurement unit	Factor to wrme underbark
Fuelwood	tonnes	1.20
Wood charcoal	tonnes	6.00
Chips, sawdust, etc	tonnes	1.20
Industrial roundwood (rough, treated)	m ³	1.10
Industrial roundwood (in the rough)	m ³	1.00
Sleepers	m ³	1.58
Softwood sawnwood	m ³	2.00
Hardwood sawnwood	tonnes	2.50
Wastepaper	tonnes	2.80
Mechanical pulp	tonnes	2.50
Chemical dissolving pulp	tonnes	2.50
Sulphate pulp, unbleached	tonnes	6.00
Sulphate pulp, bleached	tonnes	4.50
Sulphite pulp	tonnes	5.00
Semi-chemical woodpulp	tonnes	2.75
Veneer (< 6mm)	tonnes	3.45
Other wood-based panels	tonnes	2.50
Woodwool, woodflour	tonnes	1.70
Packing cases, pallets	tonnes	2.00
Other manufactured wood	tonnes	2.50
Newsprint	tonnes	2.80
Writing & printing paper, uncoated	tonnes	3.50
Other paper & paperboard	tonnes	2.50

Notes:

1. A revised set of figures was produced in FC Technical Paper 19, "Revised Forecasts of the Supply and Demand for Wood in the UK" (Forestry Commission, 1996), but these have not been used in FC publications.

Disclosure

Statistics on imports and exports are primarily based on published HMRC overseas trade data, so no further disclosure checking is undertaken by the Forestry Commission. Results from survey data are checked for disclosure potential; results to date have not been disclosive.

Revisions

Statistics on imports and exports are subject to revision after publication if revisions are made to the overseas trade statistics produced by HMRC. Figures may also be refined to take account of expert advice from the Expert Group on Timber & Trade Statistics and trade associations on trade in specific products.

The Forestry Commission's revisions policy sets out how revisions and errors to statistics are dealt with, and can be found at:

[www.forestry.gov.uk/pdf/FCrevisions.pdf/\\$FILE/FCrevisions.pdf](http://www.forestry.gov.uk/pdf/FCrevisions.pdf/$FILE/FCrevisions.pdf)

More specific information on revisions to UK imports and exports statistics can be found in the quality report on *UK Wood Production and Trade* at

[www.forestry.gov.uk/pdf/ukwptqrpt.pdf/\\$FILE/ukwptqrpt.pdf](http://www.forestry.gov.uk/pdf/ukwptqrpt.pdf/$FILE/ukwptqrpt.pdf) ; and in the quality report on *Forestry Statistics* and *Forestry Facts and Figures* at:
[www.forestry.gov.uk/pdf/qrfss_fff.pdf/\\$FILE/qrfss_fff.pdf](http://www.forestry.gov.uk/pdf/qrfss_fff.pdf/$FILE/qrfss_fff.pdf).

Jeremy Darot / Sheila Ward
Statistics, Forestry Commission
Updated March 2016

Glossary

Conversion factor Numerical factor by which a quantity that is expressed in one set of units must be multiplied in order to convert it into another set of units.

Deliveries The quantities of UK-grown roundwood that is delivered to processors (mills) or for other uses (such as wood fuel and exports). Note that for sawmills and round fencing mills, the deliveries figure reported is actually the quantity of roundwood consumed by the mill, which may differ from the true deliveries figure if the levels of input stocks vary.

European Union (EU) Currently comprises 28 member states: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK.

Eurostat The statistical office of the European Union, situated in Luxembourg. Its task is to provide the European Union with statistics at European level that enable comparisons between countries and regions.

Forestry Commission (FC) The government department responsible for forestry matters in England, Scotland and (until March 2013) Wales. The Forestry Commission's functions in Wales transferred to a new organisation, Natural Resources Wales, on 1 April 2013. The responsibility for forestry is devolved.

Forest Service (FS) An agency of the Northern Ireland Department of Agriculture and Rural Development.

Great Britain (GB) England, Wales and Scotland.

Hardwood The wood of broadleaved trees, such as oak, birch and beech; a term sometimes used for the broadleaved trees themselves.

HM Revenue & Customs (HMRC) The United Kingdom's tax authority.

Pulp Fibrous material produced by mechanically or chemically reducing wood into its component parts from which pulp, paper and paperboard sheets are formed after proper slushing and treatment or used for dissolving purposes (dissolving pulp or chemical cellulose) to make rayon, plastics, and other synthetic products. Sometimes called wood pulp.

Methodology note: UK wood imports & exports

Roundwood Trunk or branch wood, generally with a top diameter of 7 cm or more. Can be in the form of logs (14 cm top diameter or more) or small roundwood (7 to 14 cm).

Sawnwood Sawn timber - timber that has been cut into planks or boards from logs.

Softwood The wood of coniferous trees, such as spruce, pine and larch; a term sometimes used for the coniferous trees themselves.

United Nations Economic Commission for Europe (UNECE) One of five regional commissions of the United Nations. Its mission is to promote pan-European economic integration. The UNECE Statistical Division is responsible for compiling international statistics on production and trade of wood products for Europe, the Russian Federation and North America.

United Kingdom (UK) Great Britain and Northern Ireland.

Wood pellets Sawdust or wood shavings compressed into uniform diameter pellets to be burned for heat or energy.

Annex: Further information on amendments to trade data

Routine amendments to data

The following routine amendments are made to the initial estimates produced from HMRC data, to take account of alternative data sources and expert advice.

Industrial roundwood, chips & particles

- For exports, HMRC quantity estimates are replaced with data obtained by the Forestry Commission from businesses that export roundwood or chips. This provides consistency with UK timber statistics.

Sawnwood

- Code 44079131 (relating to Oak flooring) is excluded, as this is considered to be secondary processed sawnwood.

Plywood

- Codes relating to products containing both coniferous and non-coniferous material (44129490, 44129985) are allocated to the coniferous/ non-coniferous categories based on the majority of material (derived from average densities).
- Code 44123290 is excluded from the tropical sub-category. Although plywood under this code may have a tropical face, the majority of the wood is believed to be of temperate species.

Wood pulp, other pulp, recovered paper and paper & paperboard

- All HMRC quantity estimates are replaced with estimates produced by the Confederation of Paper Industries (www.paper.org.uk).

Ad hoc amendments to data

Ad hoc amendments may be made to correct apparent errors in the data after any routine amendments have been made. These adjustments are constantly reviewed and are applied where considered appropriate. Hence, they are not a permanent feature of the regular provision of data, but remain as part of the process of delivery of information where such adjustments are required.

Work is undertaken by Timbertrends to check and revise import data for all the main solid wood and panel products. This involves deriving average prices and average densities from the HMRC data on weights, volumes and values. These derived figures

Methodology note: UK wood imports & exports

are then compared to identify outliers (records with unusually high or low average prices and/ or densities). Where outliers suggest an error (for example, average densities for non-coniferous sawnwood are unusually low and more appropriate to coniferous sawnwood) amendments may be made to the HMRC data to adjust the relevant estimates to be reported.

Work for the Forestry Commission undertaken by Timbertrends relates to the production of annual estimates for the categories covered by the Joint Forest Sector Questionnaire only. However, efforts are made by the contractor to ensure consistency of the annual estimates produced for the Forestry Commission with the monthly estimates produced for the Timber Trade Federation.

Two examples of recent ad hoc amendments are provided below.

Box 1: Example of correction to HMRC data

For instance, in the October 2015 hardwood import data provided, the following entry was observed:

Month	Country	Code	Value	Weight	Unit (m3)
201510	GERMANY	44079200	369,249	722,426	32,920

There is a high probability that the units have been mis-recorded, as these data produced an average price and average weight which would have been clearly incorrect.

The units for this entry, based on average density, were changed to: 1,003 m³.

Box 2: Sawnwood from Latvia and Estonia

Regular checks undertaken on 2013 data identified a number of entries for sawnwood imports from Latvia and Estonia that had been coded as hardwood but that had average densities more closely associated with sawn softwood.

It was concluded that these entries were likely to have been mis-coded and the Forestry Commission estimates for coniferous and non-coniferous sawnwood imports were adjusted accordingly. This resulted in an increase of around thirty thousand m³ to the estimate of coniferous sawnwood imports in 2013 (and a corresponding decrease in non-coniferous sawnwood imports).