

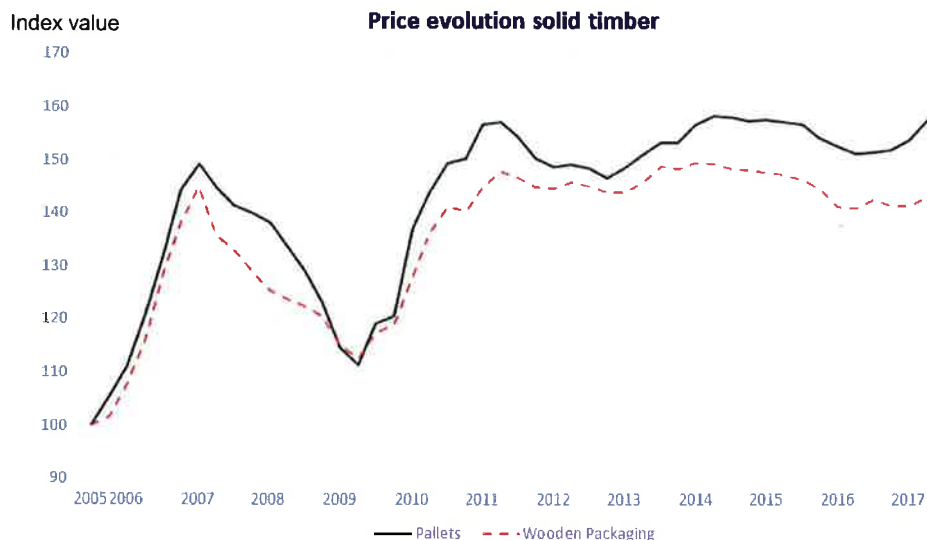
## The HPE price index for sawn timber and wood-based products for wooden packaging and pallets

The price index for sawn timber and wood-based products for wooden packaging and pallets is calculated by the Bundesverband Holzpackmittel – Paletten – Exportverpackung (HPE) e.V., the German professional association for wooden packaging and pallets in cooperation with Bonn University. The individual indices show the evolution of purchasing prices for sawn timber and wood-based products as used in the sector. They cover native supplies and those from abroad. The price indices and their evolution look as follows:

Price index: solid timber for wooden pallets								
Quarter	1/2016	2/2016	3/2016	4/2016	1/2017	2/2017	3/2017	4/2017
Index value	152,7	151,4	151,5	152,1	153,7	157,2	160,7	166,8
Price changes since last quarter	-1,0%	-0,8%	0,1%	0,4%	1,1%	2,3%	2,2%	3,8%
Price changes since last year	-3,2%	-3,7%	-3,4%	-1,4%	0,7%	3,8%	6,1%	9,7%

Price index: solid timber for wooden packaging								
Quarter	1/2016	2/2016	3/2016	4/2016	1/2017	2/2017	3/2017	4/2017
Index value	141,3	141,1	142,5	141,5	141,5	143,0	145,0	146,7
Price changes since last quarter	-2,4%	-0,2%	1,0%	-0,7%	0,0%	1,1%	1,5%	1,2%
Price changes since last year	-4,3%	-4,1%	-2,5%	-2,2%	0,2%	1,3%	1,8%	3,7%

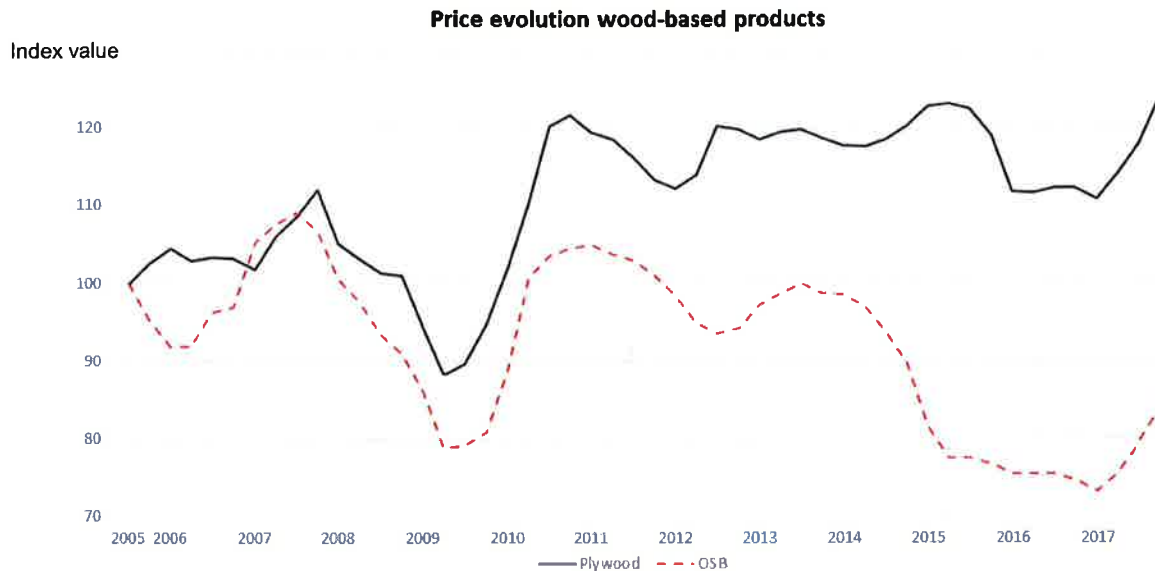
1/2005 = 100



Price index: plywood for packaging								
Quarter	1/2016	2/2016	3/2016	4/2016	1/2017	2/2017	3/2017	4/2017
Index value	111,9	111,8	112,2	112,3	110,8	114,2	118,0	124,0
Price changes since last quarter	-6,1%	-0,1%	0,4%	0,1%	-1,3%	3,1%	3,4%	5,1%
Price changes since last year	-9,0%	-9,3%	-8,4%	-5,8%	-0,9%	2,2%	5,1%	10,4%

Price index: OSB for packaging								
Quarter	1/2016	2/2016	3/2016	4/2016	1/2017	2/2017	3/2017	4/2017
Index value	75,5	75,4	75,5	74,5	73,2	75,6	79,7	84,0
Price changes since last quarter	-1,5%	-0,1%	0,1%	-1,2%	-1,8%	3,3%	5,5%	5,4%
Price changes since last year	-7,3%	-2,8%	-2,5%	-2,7%	-3,0%	0,2%	5,7%	12,7%

1/2005 = 100



The analysis is carried out at the end of each quarter. It is based on a representative sample of HPE member firms that provide information on prices and price changes. The individual indicators cover prices and price developments for supply loads of the following material. All material is weighted equally within the index.

1. Price index : solid timber for pallets
  - Softwood boards 18 x 80 mm cut lengths (green)
  - Softwood boards 22 x 100 mm cut lengths (green)
  - Square soft wood lengths 80 x 80 mm (green)
  - Cut pallet lengths 22 mm (green)
  - Cut pallet lengths 18 mm (green)
2. Price index: solid timber for wooden packaging (crates and export packaging)
  - Softwood boards 18 mm narrow (dried)
  - Softwood boards 24 mm wide (dried)
  - Softwood boards 24 x 100 mm long (dried)
  - Softwood planks 40 mm long (green)
  - Square softwood lengths 100 x 120 mm long (green)
  - Square softwood lengths 140 x 160 mm long (green)
3. Price index: plywood for packaging uses
  - 5-ply 12,5 mm, CCX
  - 5-ply 9,5 mm, CCX
  - 7-ply 15 mm, CCX
4. Price index: OSB for packaging uses
  - OSB/3 12 mm

The calculation of these indices is supervised and audited by the Department of Statistics of the Institute for Social and Economic Sciences of Bonn University. Detailed information on the calculation of the price indices can be found in the annex.

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**Comments on the construction of price indices:**

**Sawn timber and wood-based products - size and product selection**

Price indices for sawn timber and wood-based products for wooden packaging and pallets are established by Bundesverband Holzpackmittel – Paletten – Exportverpackung (HPE) e.V. (German Federal Association for wooden packaging, pallets and export packaging) in collaboration with Rheinische Friedrich – Wilhelms – Universität, Bonn, (Bonn University). The purpose of these price indices is to reflect in a representative manner the purchasing price trends for sawn timber and wood-based products as used in the wooden packaging, pallets and export packaging industry. All Member firms of HPE are asked once a quarter to fill in a written questionnaire. Information is requested about prices of 5 solid timber products for pallets and 6 solid timber products for wooden packaging and of 3 plywood products as well as 1 OSB quality. The sawn timber and wooden material products are standard supplies as purchased by the companies in the survey. The following products are part of the survey:

**1. Price index: solid timber for pallets**

- softwood boards 18 x 80 mm cut lengths (green)
- softwood boards 22 x 100 mm cut lengths (green)
- square soft wood lengths 80 x 80 mm (green)
- cut pallet lengths 22 mm (green)
- cut pallet lengths 18 mm (green)

**2. Price index: solid timber for wooden packaging (crates and export packaging)**

- softwood boards 18 mm narrow (dried)
- softwood boards 24 mm wide (dried)
- softwood boards 24 x 100 mm long (dried)
- softwood planks 40 mm long (green)
- square softwood lengths 100 x 120 mm long (green)
- square softwood lengths 140 x 160 mm long (green)

**3. Price index: plywood for packaging uses**

- 5-ply 12,5 mm, CCX
- 5-ply 9,5 mm, CCX
- 7-ply 15 mm, CCX

**4. Price index: OSB for packaging uses**

- OSB/3 12 mm

**Quantity categories**

Any index includes both national and import supplies. In order to avoid possible biases, prices paid by individual member firms have to be weighted by the corresponding quantities purchased of the respective product. Each index is based on 7 quantity categories which correspond to typical order sizes within the sector. Please note that these are not producer price indices.

A simple price index is established for each of the four categories (solid timber for pallets, solid timber for crates and export packaging, plywood and OSB) based on the following formula:

**Price index = (arithmetic mean of prices during the quarter under survey)/(arithmetic mean prices for the base quarter i.e. 1st quarter of 2005)**

The arithmetic mean is calculated by adding all the prices (weighted by the supply quantities) and dividing them by the total sum of all quantities. Individual quantities are approximated by the relevant mean value for each quantity category. The fact that supply quantities are not requested at their exact value but via preset intervals has improved our members' participation in the survey and enables an up-to-date evaluation. Prices are linked to the results of the previous quarter in order to get a homogenous result.

**Systematic Bias**

A representative number of member firms participate in the survey. They purchase supplies from both national and international saw mills. An analysis of our member companies shows that the structure of the subset of firms answering the questionnaire also adequately represents our overall membership structure. There is thus reason to exclude any systematic non-response bias.