ECONOMIC COMMISSION FOR EUROPE

Timber Committee

October 2018 *FINLAND*

MARKET STATEMENT

1 GENERAL ECONOMIC TRENDS

In 2017, the Finnish economy grew by 2.8 percent, and the growth was wide-ranging. Strong international demand and improved price competitiveness boosted exports. Especially, the demand for machinery, equipment and other investment goods and intermediate inputs, which constitute important part of Finnish exports, increased due to full capacity utilisation especially in Euro area. Economic growth was also supported by domestic GDP components. Improved employment, increases in wages and salaries and strong confident of Finnish households increased private consumption. Investments, on the other hand, were boosted because of the low interest rates, bottlenecks in production and increased construction activity.

During the first part of this year and prevailing autumn the statistics, different indicators and business outlooks show that the economic growth in Finland is continuing, albeit at a slowing pace with respect to previous year. In the first quarter of 2018, GDP in Finland grew by 1.2 per cent from the previous quarter and 2.8 per cent compared to the first quarter of 2017. According to Statistics Finland's preliminary data, the corresponding figures from the second quarter of the year were 0.3 and 2.5 per cents, respectively.

As the business cycle matures, the economic growth in Finland is more heavily relied on the domestic components. Increase of private consumption is supported by accelerating employment growth, low inflation and increasing real disposable income. The recent consumer confidence indicators, released by Statistics Finland in September 2018, revealed that the consumer expectations and confidence in economy are still rather optimistic and well above the long-term average even though the confidence concerning the performance of Finnish economy has slightly decreased after the summer.

Even though the most recent statistics concerning construction permits indicate that the growth in construction sector will gradually moderate, the investments in machinery and equipment, in turn, are still growing due to the shortages of free capacity in production. The recent business tendency survey in August 2018, released by Confederation of Finnish Industries, indicates that the industrial confidence in Finland is still strong, production expectations are positive and the number of orders remained good. The confidence is stronger than the long-term average.

Following the decreasing international demand, the performance of Finnish exports, in turn, remained poor in the first quarter of this year. The figures concerning the second quarter, however, indicated that the moderate growth of the export value was mainly because of the increase in export unit prices, and not volumes. The consensus in economic prognoses is that the growth of exports is gradually slowing down. The most recent economic outlooks project that the Finnish economy will grow by 2.5–2.8 percent in 2018.

The economic outlook for Finland in 2019 follows a rather similar pattern than during the current year. The increasing purchasing power of households together with improving employment will feed the private consumption growth. The growth of investment activity is projected to slow down with respect to this year. Especially, the construction is cooling down. In 2019, exports will slow slightly from this year's pace, and the growth in goods exports is anticipated to remain below the growth of world trade. In 2019, the Finnish GDP is projected to grow roughly by 1.9–2.2 percent.

The main uncertainties concerning the performance of Finnish economy in near future are related to politics. The political uncertainties and possible restrictions of global trade, increase of protectionism, geopolitical tensions and the results of the Brexit negotiations are easily affecting Finland’s exports and, thus, the economy as a whole.

Sources: Statistics Finland, Research Institute of the Finnish Economy (2018f, 2019f)

2 RECENT POLICY MEASURES

The most significant changes in the forestry environment in Finland in 2018 are related to digitalisation. In March 2018, the Metsään.fi service maintained by the Finnish Forest Centre became open for everyone to download compartment level information concerning forest resources, harvesting declarations, public financing of sustainable forestry as well as information on the important habitats. However, the actual borders and codes of land properties or forest owner information are not part of open forest information. Some pilot-like services have already been built on this open forest information.

The online roundwood bidding service Kuutio.fi, utilizing Metsään.fi or other applicable forest information, has established its position during its first year of operation. The Kuutio.fi has been developed and it is operated jointly by roundwood buyers and sellers. Still, the service has not yet, due to user difficulties, been able to fully replace with Kuutio.fi dismantled Puumarkkinat.fi roundwood bidding service of forest management associations. Instead, forest management associations have partially returned back to older routines, like sending bidding requests by email to roundwood buyers.

In the forestry business environment in Finland, most significant political reforms projected by the present government have been made so far. Next election of the parliament will be in April 2019. In the sector of Ministry of transport and communications, however, there is still an on-going amendment to allow increased lengths of trucks, benefiting for instance wood chips transports. In the sector of Ministry of agriculture and forestry, for the current and also for the next year in the state budget, Kemera (Financing of Sustainable Forestry) funds will be available for 56.2 million euros. According to the monitoring of the Finnish Forestry Centre, by the end of August, the budget for the current year was used as much as EUR 22.9 million. EUR 31.3 million of allowable granting EUR 79.3 million of the Kemera funds, which is provided for the flexibility of the budget was used. By the end of August, EUR 2.0 million was spent on natural and environmental support of total EUR 6.1 million available for the current year.

At the beginning of 2018, a change in the asset transfer tax was also introduced meaning that a change in the form of enterprise of the agricultural or forest farms (transformation into a limited liability company) will no longer be taxed. In 2015, the aim of the Government Program was to increase the use of wood by 15 million cubic meters from the starting level of 2013 by 2025. This target was adopted from the National Forestry Strategy 2025. Overall, harvests in 2018 are projected to reach already 4/5 of the target of the National Forestry Strategy 2025. According to forest resources, the potential for increasing harvests is considerably higher in northern Finland than in southern Finland. Updated calculations based on the most recent National Forest Inventory data (VMI) are slightly increasing the sustainable harvesting potential, which most probably will also be adopted as the strategic targets for the use of wood in the future. One new sustainability criteria in addition to the traditional ones, however, is also the legislation adopted by the European Parliament in April 2018 on the carbon leak of forests (the so-called LULUCF Regulation).

3 MARKET DRIVERS

In 2017, the nominal total value of exports of Finnish forest industry products increased by 5.1 per cent from the previous year to nearly EUR 12 billion. However, the share of value of exports of forest products with respect to Finland's total commodity exports declined to 20 percent as the value of goods exports rose by as much as 15.1 per cent to nearly EUR 60 billion. The export earnings of the forest industry were increased by both the increase in export volumes and the rise in export unit prices. Only the export unit prices of plywood and paper decreased with respect to 2016.

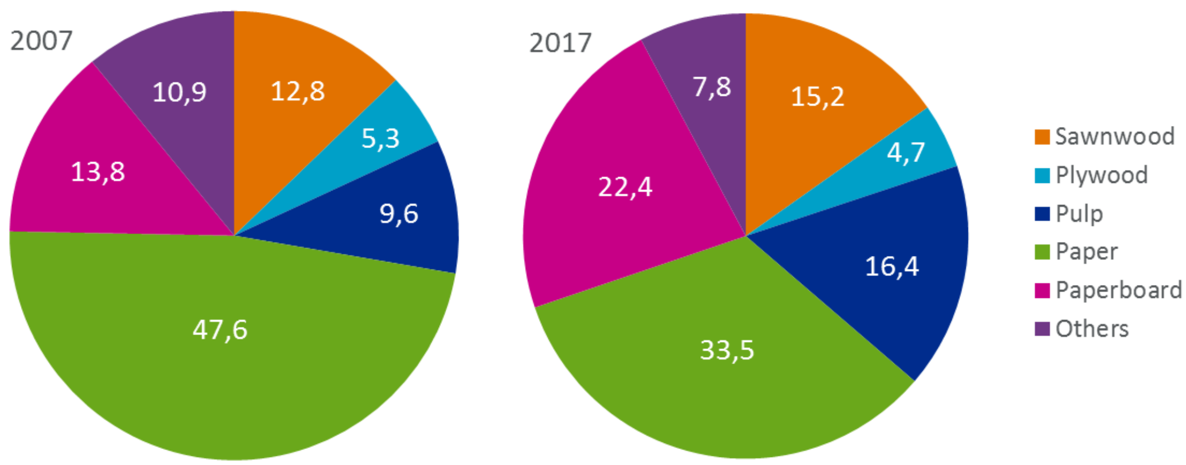
The export value of wood products industry increased by 11.1 percent. The export volume of sawnwood increased by 8.7 percent to an all-time-record of 9.4 million cubic meters and the unit price of exports rose by two percent. Plywood exports increased by 10.5 percent, but the unit price for exports fell by half percent. The rise in the value of 11.3 percent in pulp exports was due to the rise both in export volumes and unit prices. The growth in paperboard value over 10 percent was due in particular to the strong growth in export volumes, as unit prices only slightly increased. Paper exports, by contrast, contracted by 4.2 percent and the average unit price of exports fell by less than 3 percent.

In spite of the structural change and the contraction in exports and production volumes, which had persisted for many years, paper still accounted for about one third of the value of exports of Finnish forest industry products in 2017. However, the share dropped by 3 percentage points from previous year. The corresponding shares of sawnwood, pulp and board increased each by a percentage point. In 2017, the wood product industry accounted for 24 percent (EUR 2.9 billion) of forest products exports and the pulp and paper industry accounted for 76 percent (EUR 9.1 billion).

Revenues from the forest industry's exports are fairly stabilized in terms of region, and there are usually no major differences between the successive years. However, China's importance as a single important export destination is growing year by year. In 2010, China accounted for only about one percent of the export revenue of the wood products industry, compared with almost 11 percent last year. Also in the pulp and paper industry, the importance of China is increasing. Nevertheless, the euro area remains the most important market for the Finnish forest industry. 28 percent of export sales of wood products industry came from the euro area in 2017 while the corresponding share was for the pulp and paper industry was 40 percent. Of Germany, the share of exports of whole forest products declined from a percentage point on the previous year to 15 percent. The uncertainty created by Brexit was reflected in the export earnings of the forest industry in Britain, which also declined by a percentage point from the previous year to just over 7 percent.

While most of the products manufactured by the Finnish forest industry are exported, the industry is highly dependent on the development and changes in international trade and demand in the main export markets. Also, the development of exchange rates (USD, CAD, SEK, GBP, JPY, RUB, CNY) with respect to euro is an important factor of competitiveness of the Finnish forest industry not only outside of euro area to promote exports, but also inside the euro area when competing against the imports from outside of the euro area. In the Finnish paper industry, about 90 percent of production is exported, while in wood products industry the corresponding share is close to 70 percent. Although target countries of exports slightly differ between the forest products categories, the most important export destinations are Europe, Asia, Near East and North Africa.

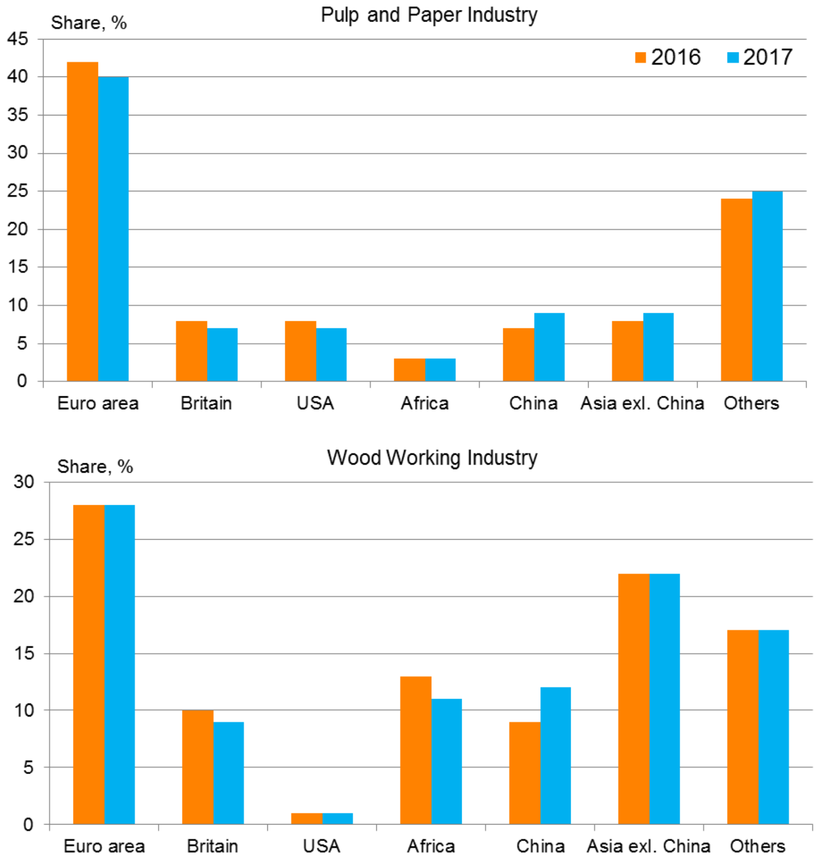
Shares (%) of the export value of forest industry products by industry in 2007 and 2017



Sources: Finnish Customs, Luke

The short-term outlook for Finnish forest sector follows closely the similar structure as in the previous years, even though the growth of demand in the main export markets is expected to slightly slow down. In the long run, the megatrends such as urbanization, middle-class prosperity, abandoning fossil materials and plastics, digitalization, climate change, some to mention, are in favour to increase demand for bio products, such as pulp and packaging materials, and promote the production and exports of Finnish forest industry. The recent uncertainties concerning the world trade, trade tariffs, Brexit and geopolitics, on the other hand, can create challenges and unexpected short-term changes in demand.

Distribution of the value of exports of Finnish forest industry products in 2016 and 2017



Sources: Finnish Customs, Luke.

During the recent years, China has become one of the most important trading partners for the Finnish forest industry. China’s importance will continue to be emphasised also in the future. In China, the political objective from the investments and export orientated economic growth towards the more consumption-driven economy can be seen as a promoting pulse for the exports of Finnish forest industry. Along with the rise in standard of living and increasing purchasing power, China requires more raw materials such as sawnwood and pulp in order to produce consumption goods for daily use. For example, the export volumes of sawnwood from Finland to China, and especially spruce sawnwood, which is further processed in furniture industry, are almost quadrupled with respect to 2012.

4. DEVELOPMENT IN FOREST PRODUCTS MARKETS

A. Raw wood

During January-August in 2018, roundwood trade in private forests in Finland has grown by 16 percent compared to the previous year. The trade growth has been wide-ranging and concerns all species of trees. The stumpage prices of sawlogs have been at highest in June, from which they have slightly fallen. In contrast, the stumpage prices of pulpwood species have risen slightly after the end of June. Industrial wood harvesting has increased by 11 percent in January-July, with the largest number of logging (13–15 percent) in pine sawlogs and pine pulpwood.

In 2018, the total removals for industrial wood in Finland are estimated to grow by 9 percent to 59.7 million cubic meters under bark (u.b.). The fellings are increasing both in private forests and in forests of the state and companies. The fellings of sawlogs are anticipated to grow by 7 percent to 25.9 million cubic meters (u.b.), due to the increased demand for pine and spruce logs. Correspondingly, the fellings of birch sawlogs increase in the same proportion as coniferous trees, because hardwood plywood is produced more than before. The fellings of pulpwood will increase by 7 percent to 30.4 million cubic meters (u.b.) due to the recent capacity increments of pulp production at the Äänekoski and Kymi biorefineries.

Roundwood imports are forecast to grow to 8.9 million cubic meters (u.b.) in the current year. Together the total removals of industrial wood and roundwood imports are projected to increase by 10 percent to 68.6 million cubic meters, which is a record for all time. The target in National Forest Strategy 2025 was to increase the fellings by 15 million cubic meters (o.b.). Thus, about four fifths of this target has been achieved.

Along with the growth of the production volumes of spruce sawnwood, the stumpage price of spruce sawlogs is expected to increase by 10 percent in 2018. The stumpage price of pine sawlogs, on the other hand, is projected to rise by 9 percent as a result of the growth in production of pine sawnwood and increased demand for by-products used in pulp production. Significant growths of softwood pulp and paperboard production as well as the stabilization of paper production will increase the stumpage prices of softwood pulpwood by 8–11 percent in this year.

In 2019, the total removals of industrial roundwood are projected to decrease by one percent to 58.8 million cubic meters (u.b.), as the growth of the forest industry production will stabilize. The fellings in private forests will be reduced by two percent while the combined fellings of companies and Metsähallitus are growing slightly. The removals of sawlogs are projected to decline by 3 percent while those of the pulpwood will remain roughly unchanged. In total, industrial wood fellings and roundwood imports are projected to decline by one percent and amounts 67.8 million cubic meters.

B. Wood energy

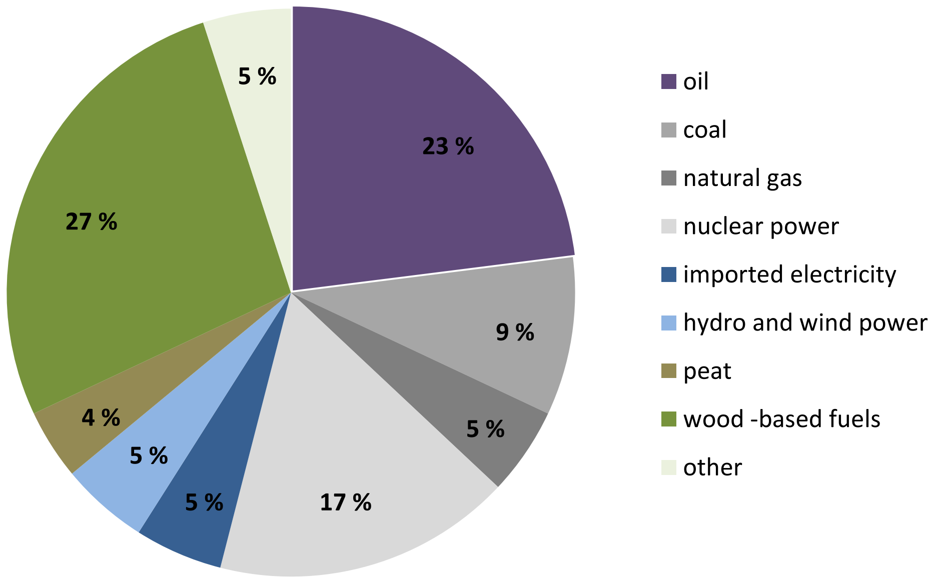
The consumption of wood fuels grew by 3.5 percent in 2017 and they remained the most important individual energy source in Finland with a share of 27 percent. The growth was mainly due to an increase in the burning of by-products and waste wood from the forest industry. EU targets for renewable energy are calculated relative to final energy consumption. Calculated in this manner, the share of renewable energy sources in Finland rose to more than 40 percent in 2017 according to Statistics Finland’s preliminary data. Finland's target for the share of renewable energy is 38 percent of final energy consumption in 2020, and this share was reached for the first time in 2014. The Finnish Government has set an ambitious goal for 2030: the share of renewable energy in the end consumption should increase to approximately 50 percent.

The target for 2020 in Finland is to use 13.5 million cubic meters (m^3) of forest chips annually, but it seems that this target is not able to be reached. In 2017, the use of forest chips was 7.8 million m^3 of which 7.2 million m^3 was used in heating and power plants. The use of forest chips decreased by 3 percent with respect to 2016. Small diameter trees are by far the most important raw material source for forest chips in Finland (56 percent of forest chips in 2017), logging residues accounted for 32 percent of raw material, stumps 7 and stem wood 5 percent. The use of forest chips is estimated to increase 3 percent at 2018 and 2 percent at 2019.

The plant price of forest chips in 2017 was EUR 20.59 per megawatt hour, which is 1 percent lower than 2016. In 2018, the average plant prices of wood chips are expected to remain at the same level than 2017.

Domestic production of wood pellets in Finland increased 20 percent to 324 000 tons in 2017, while the apparent consumption was 373 000 tons (production + import – export). Deliveries by pellet producers based on domestic pellet production grew by 15 percent compared to the previous year, amounting to 349 000 tonnes. The amount of wood pellets delivered to power and heating plants and large buildings increased by 18 percent to 288 000 tonnes. The amount of wood pellets delivered to small-scale housing and farms increased by six percent to 62 000 tonnes. In 2018 and 2019, the domestic consumption of pellets is estimated to increase only slightly while the production of pellets in Finland is projected to remain at the same level as in 2017.

Energy consumption in Finland in 2017 by source of energy



Source: Statistics Finland.

The emission trading has a strong influence on the competitiveness of wood-based fuels and their use in energy plants. Price of EU emission allowances has been increased strongly during the last and ongoing year (from around 5 €/t CO2 to 20 €/t CO2), and along with a rise in world market prices of fossil fuels (especially coal), forest biomass has become more competitive.

In bioenergy markets, changes in taxes, subsides and regulations have fast and strong influence on the use of renewable energy sources. In the European Union, there are several directives concerning the usage of solid and gaseous biomass in energy production under construction. Uncertainty with emission trading together with different directives are postponing investment decisions and making future planning difficult and highly challenging. However, during the recent years, there have been few new investments and plans of new biofuel plants in Finland. Also, several large scale CHP (Combined Heat and Power) plants using forest biomass have been launched in Finland, and in addition there have been reconstructions in old plants in able to use more forest biomass.

C. Certified forest products

In Finland, the current amount of certified forests endorsed by the international Programme for the Endorsement of Forest Certification schemes (PEFC) is about 17.7 million hectares. This accounts for 89 percent of the forests used for wood production. After introducing the Finnish certification standard in 2011, the forest area certified under Forest Stewardship Council (FSC) scheme has increased to 1.61 million hectares or approximately 7.9 percent of the forest area. 1.23 million hectares are double certificated.

The use of forest certification labels in forest products has experienced only modest changes over the last year. The number of PEFC Chain of Custody (CoC) certified companies in mid-2018 was 230, whereas FSC has granted 126 CoC certificates. PEFC has introduced the group certification scheme earlier, the first FSC group certificates were granted August 2018.These group certificates lower the economic burden of holding the certificate for companies that meet the strict turn over or number of employee criteria. Both forest and CoC certificate schemes contribute to the sustainable wood material criteria of the Nordic Ecolabel (The Swan), a widely recognised consumer oriented eco-label in the Nordic countries.

D. Value-added wood products

E. Sawn softwood

In 2017, the year-over-year growth rate of Finnish softwood sawnwood exports was 9 per cent, and with the export volume of 9.4 million cubic meters, the all-time sawnwood export record dating from the previous year was hit. Since 2009, the exports of sawnwood have increased every year, and in 2017, the export volume was more than 80 per cent higher than in 2009. Of the total Finnish sawnwood exports, 99 per cent was softwood sawnwood (hereinafter sawnood) in 2017.

As in 2016, also in 2017, the year-over-year growth rate was the highest (64%) in sawnwood exports to China. With 1.7 million cubic meters, China became the most important export destination for Finnish sawnwood, and its share of the total Finnish sawnwood exports swelled to 19 percent. The majority, over 70 percent, of sawnwood exported to China consisted of spruce sawnwood. However in 2017, the growth rate of pine sawnwood exports to China was considerably higher than the growth rate of spruce sawnwood exports, as the exporters directed shipments from the troubled North African markets to Chinese markets. Sawnwood exports to North Africa decreased by 12 per cent in 2017. The largest drop, 44 per cent, was experienced in sawnwood exports to Algeria due to the introduction of import licenses for sawnwood in April 2017. The problems related to the issuing of import effectively halted the sawnwood exports to Algeria for five months.

Due to the growing construction activity, sawnwood exports to euro area increased by 10 per cent in 2017. The highest growth rate, 22 per cent, was in the exports to Estonia. The average unit value (export price) of Finnish sawnwood exports rose by 2 per cent in 2017. Thus, the slide in export price that started in 2015 finally stopped. The increase in average export price of sawnwood was mainly due to the rise of export price spruce sawnwood. The export price of pine sawnwood remained at the level of 2016, and the difference between the export prices of pine and spruce sawnwood grew to 15 euros per cubic meter.

Finnish sawmill industry in 2017.

	Sawnwood 1000 m^3	Share of production %	Volume change 2017/2016 %
Production, of which	11705	100	2
Domestic market*	2329	20	-18
Exports, of which	9376	80	9
Euro area	2228	19	10
France	*506*	*4*	*2*
Germany	*499*	*4*	*3*
Estonia	*380*	*3*	*40*
Others	*842*	*7*	*9*
Other Europe	1306	11	2
United Kingdom	*897*	*8*	*2*
Others	*410*	*4*	*3*
Asia	3872	33	24
China	*1745*	*15*	*64*
Japan	*989*	*8*	*5*
Israel	*474*	*4*	*3*
Saudi Arabia	*372*	*3*	*-17*
Others	*292*	*2*	*52*
Africa	1929	16	-12
Egypt	*1297*	*11*	*-3*
Algeria	*273*	*2*	*-44*
Others	*358*	*3*	*1*
North America	12	0	209
Others	29	0	31

*Apparent consumption of sawnwood production in Finland = production – exports.
Sources: Finnish Customs, Finnish Forest Industries Federation.

Sawnwood production grew to 11.7 million cubic meters in Finland in 2017. The year-over-year growth rate was 5 per cent and lower than the growth rate of sawnwood exports. The sawnwood production was constrained by the poor harvesting conditions in the end of the year. In addition, the domestic demand for sawnwood has grown slowly despite the booming construction activity in recent years. In fact, the apparent consumption of sawnwood (production – exports + imports) decreased in 2017. However, the provisional figures that include the changes in sawnwood stocks show a growth in domestic sawnwood consumption, which indicates that the sawnwood stocks were reduced to the minimum in Finland in 2017.

Outlook for years 2018 and 2019

In the first half of 2018, the Finnish sawnwood exports decreased by 4 per cent lower in year-over-year terms. The decrease was mainly due to the limited sawnwood production. Because of the poor harvesting condition in the end of 2017 and beginning of 2018, the production of sawnwood was lower in the first quarter of 2018 than year earlier. However, the harvesting conditions soon improved and rising stumpage prices of sawlogs boosted roundwood sales. Accordingly, also sawnwood production increased during the second quarter of 2018, and the cumulative production of the first half of 2018 was on par with the first half of 2017.

In the Finnish sawnwood exports, major sifts have occurred during 2018. The exports to China were a third lower in the first half of 2018 compared to the same period last year. The decrease of sawnwood exports to China was attributable, among other things, to inflated stocks of Chinese importers. Also, the closures of polluting factories due to the Chinese governments' aim to make country's industrial production more environmental friendly, have affected furniture industry, the main user of Finnish sawnwood in China. It is expected that the drop in Finnish sawnwood exports will be temporary, and exports will recover gradually towards the end of 2018.

In the North African markets, the situation has improved considerably. The unit value of Finnish sawnwood exports to Egypt started to increase in the late 2017, and simultaneously the exports to Algeria started again. In the first half of 2018, the positive trend in North Africa has continued. Demand for sawnwood is strong in the area, and trade with Algeria has normalised due to the abolition of import licences in the beginning of 2018. Traditionally, North Africa has been the most important export destination for pine sawnwood, and in the first half of 2018, the pine sawnwood exports to Egypt increased by 5 per cent and to Algeria by 92 percent compared to the same period last year. The growth rate of export price of pine sawnwood was 21 per cent in exports to Egypt and 14 per cent in exports to Algeria. Mainly due to the positive development in North African markets, the export volume of pine sawnwood was 2 per cent higher and export price 14 per cent higher in the first half of 2018 compared to the same period last year. Simultaneously, the difference between export prices of pine and spruce sawnwood shrank.

Also in Europe, the demand for sanwood has been strong in 2018. In the first half 2018, Finnish sawnwood exports grew to almost every major European export destinations compared to the same period las year. The UK was an exception. The Finnish sawnwood exports to the UK decreased by 2 per cent, which was attributable to the 7 per cent decrease in pine sawnwood exports. Spruce sawnwood exports to the UK grew slightly. The export prices of pine and spruce sawnood grew practically in all major European export destinations.

It is expected that in 2018, the volume of Finnish sawnwood exports will be slightly lower than in 2017. However, the production of sawnwood is expected to grow by 2 per cent due to the expanding harvesting volumes, accumulation of sawnwood stocks, and slowly growing domestic consumption. The average price of sawnwood exports is predicted to increase by 8 per cent. In 2019, the upward trend of export price is expected to flatten, while both sawnwood production and exports will increase by one and two per cent, respectively.

F. Sawn hardwood

In Finland, hardwood sawnwood is a marginal product, the estimated annual production volume of which was 40 000 m^3 for several years. In 2016, the production of hardwood (mainly birch) sawnwood was 45 000 m^3, which accounted for 0.4 percent of the total sawnwood production in Finland.

G. Wood-based panels

The production of plywood accounts for over 90 percent of the total production of wood-based panels in Finalnd. The remainder consist of particle and hardboard, while there is no OSB or MDF/HDF production in Finland. Softwood (spruce) plywood dominates the Finnish plywood production. In 2017, the production of plywood was 1,24 million cubic meters, of which 68 per cent was softwood plywood (incl. LVL) and the remainder hardwood (birch) plywood. Year-over-year growth rate of plywood production was 9 per cent, while the plywood exports grew by 11 per cent to 1,04 million cubic meters. Europe's share of plywood was ca. 90 per cent and demand for softwood plywood was strong in construction industry. The average export price of plywood remained at the previous year's level in 2017.

Finnish plywood industry in 2017.

	Plywood 1000 m^3	Share of production %	Volume change 2017/2016 %
Production, of which	1241	100	9
Domestic market*	202	16	1
Exports, of which	1039	84	11
Euro area	466	38	7
Germany	*183*	*15*	*1*
Netherlands	*124*	*10*	*6*
Others	*158*	*13*	*16*
Other Europe	446	36	5
United Kingdom	*135*	*11*	*2*
Sweden	*130*	*10*	*40*
Denmark	*58*	*5*	*3*
Norway	*56*	*5*	*22*
Others	*68*	*5*	*-32*
Asia	47	4	-2
Africa	9	1	17
North America	46	4	38
Others	26	2	30

* Apparent consumption of plywood production in Finland = production – exports.
Sources: Finnish Customs, Finnish Forest Industries Federation.

Outlook for years 2018 and 2019

In the first half of 2018, the production of plywood was 2 and exports one per cent higher than in the first half of 2017. The demand for softwood and hardwood plywood has remained adequate in the European markets. Also investments in LVL production increased the total production of plywood. In Varkaus, Stora Enso's LVL plant reached full capacity in the second quarter of 2018. Metsä Wood's new LVL line in Äänekoski entered production in late 2017. In December 2017, Metsä Wood also announced that it will build a new LVL in Punkaharju plant. This line is due to enter production in the first quarter of 2019.

Due to the stable situation in the European markets and investments in plywood production, both the production and exports of plywood is expected to grow by 3 per cent in 2018. The average unit price will remain at the previous year's level. In 2019 new production capacity will increase the production and export volumes, the both of which are expected to rise by 5 per cent. The average export price of plywood is to remain unchanged compared to 2018.

H. Pulp and paper

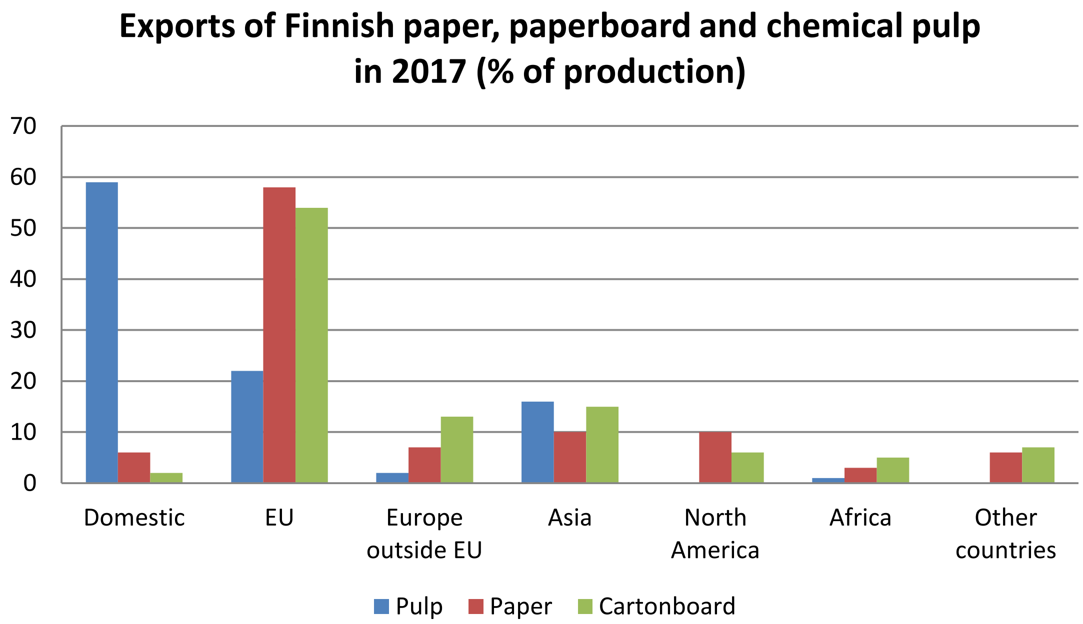
Finnish paper and paperboard industries are highly dependent on the changes in international demand. In 2017, 93 percent of the Finnish paper and 98 percent of paperboard production was exported. The main destination is the European Union, and more than half of paper and paperboard is exported to EU countries. Other important export regions for paper are Asia and North America. In 2017, export to these regions was 20 percent of the production. An important single export market for paperboard outside the EU is Russia (7% of production in 2017). Capacity investments in chemical pulp have enabled increments in market pulp exports, but still more than half of production volume is used by domestic paper and paperboard industries. The main export destination of pulp is the EU. However, from individual countries China is currently by far the most important market. In 2017, 13 percent of the Finnish pulp was exported to China.

There have been significant changes in the structure of the Finnish pulp and paper industry during the last ten years. Due to decline of demand for paper, significant amount of paper machines have been closed down. Capacity changes have continued during the recent years. In 2018, paper production capacity (printing and writing papers) in Finland is approximately 15 percent lower than it was in 2014. Despite closures paper is still by far the most important export product of the Finnish forest industry covering one third of forest industry export value.

At the same time with decline in paper production, capacity of paperboard industry and the industry's share of total forest industry production have increased. Quite recently two big paper machines have been converted to board machines: Stora Enso's investment in Varkaus (390 000 t/year, kraftliner) started production in autumn in 2015 and Kotkamills's (400 000 t/year, folding boxboard) unit was opened in summer 2016. At the moment, Stora Enso is carrying out a feasibility study on switching production from woodfree coated paper to cartonboard and kraftliner in Oulu mill in northern Finland.

Significant increase has occurred also in pulp production capacity in Finland. Especially, Metsä Group's new pulp mill in Äänekoski expanded production capacity in the country (net increase 0.77 mill. t/year, total capacity 1.3 mill. t/year). UPM has carried out several expansion projects in company's pulp mills in Finland. Capacity expansion has been a consequence of increasing demand for pulp. Demand is increasing especially in China and other parts of Asia. In 2018, pulp production capacity in Finland is approximately 16 percent higher than it was in 2014. In addition, there are other plans and preliminary planning stages to increase pulp production capacity and production of wood-based energy Finland. However, the production of mechanical pulp has decreased. This is due to decrease in demand for paper grades using mechanical pulp.

In 2017, paper production and export volume declined in Finland by two percent. Production decreased from 6.8 to 6.65 million tons. The development was in line with European development as, according to Euro-Graph, demand for printing and writing paper declined in Europe 2.8 percent. Contrary to paper production the production of paperboard increased last year significantly - almost nine percent. This was due to strong demand and earlier investments which still induced growth in production compared to previous year. Also, export volume rose nine percent. The production of chemical pulp increased last year by three percent. As new Äänekoski mill started its production only in mid-August 2017, the increase of capacity will be seen in Finnish production in 2018 figures.



Sources: Finnish Customs, Natural Resources Institute Finland, Finnish Forest Industries Association

All in all the development of export volumes was in 2017 rather positive with the exception of paper. In export prices the development was to some extent heterogeneous. The average export price of pulp was in 2017 seven percent higher than a year before. Increase of price was due to tight market situation in global pulp market. In paperboard market demand was good, but also more stable than in pulp market. Export price increased only modestly and average price was two percent higher than in 2016. Export price for paper declined due to decreasing demand by three percent from 2016.

Outlook for 2018 and 2019

The outlook for Finnish pulp industry for 2018 is characterised by the increase of production due to earlier change in production capacity. At the same time, paperboard production is stabilizing in to new production volume level after capacity increases of recent years. In 2019, smaller growth rates both in pulp and paperboard production are expected to be seen as no major capacity changes are known to be realized. Paper production is expected to decline in a long run, but exceptionally to increase in 2018.

In Europe, the key export market for Finnish paper, total demand for graphic papers declined approximately 3 percent in 2017 compared to 2016. During the first seven months of this year, demand declined more than four percent compared to demand in January-July in 2016. Consumption was down especially in newsprint and coated wood free markets. Due to digitalization downward trend will continue also in coming years. Despite decline in demand, prices of graphic papers have increased in 2018. This is due to increase in pulp prices, which has raised production costs, especially in mills dependent on market pulp. However, increase of prices is also an indication of capacity closures, which have improved market balance at least temporarily.

Even if demand has declined at European level, paper export from Finland increased by four percent during the first half of the year 2018. A possible reason for increase is the closure of paper machines elsewhere in Europe, which has directed demand to the Finnish paper mills. Also high pulp price has most likely benefitted Finnish producers, which are not dependent on costly market pulp. The same development is expected to continue the whole year and Finnish paper export and paper production are estimated to increase from last year. However, in 2019 the situation is expected to return to earlier path also in Finland and production and export are expected to decline. The volumes of paper production are estimated to end up to about 6.85 million tonnes in 2018 (in 2016: 6.65 million tonnes) and to 6.8 million tonnes in 2019.

As in Europe in general, also in Finland the average export price of paper has increased this year. Price increase has been most notable in uncoated wood free paper, whereas in publication paper prices have mostly decreased. As price development has been positive from producers' point of view also in autumn, the average export unit price of paper from Finland is estimated to be higher than last year. Increase will continue also next year, but more modestly than this year due to declining pulp prices and diminishing demand.

Packaging materials, paperboard, packaging paper, household papers as well as tissue papers for personal hygiene have promising outlook for forest industries. Demand for these products is growing in Europe, especially in Eastern part of Europe, and in Asia. Still, the main markets for the Finnish paperboard are in Europe, Germany being the most important destination country. During the first half of 2018, export of Finnish paperboard increased by seven percent. Increase was due to good demand as well as production capacity increases which were realized in earlier years. More than half of production (54%) was exported to EU area. The most remarkable change was, however, seen in export to Asia, which increased 23 percent from last year's first half. Also export to North America increased substantially. As paperboard market is in autumn still balanced, production and export volume of Finland is expected to increase this year and growth will continue also next year. Production is estimated to increase by 5 percent in 2018 and 3 percent in 2019 totalling 3.9 million tonnes in 2019. The export grows with the same rate. Finnish average export unit price is estimated to rise 4 percent in 2018 and 2 percent in 2019.

The production of chemical pulp increased five percent during the first half of this year in Finland. Increase in the Finnish export volume for bleached pulp was 16 percent. The main reason for growth was expanded production capacity and strong global demand. Most notable capacity increase was Metsä Group's Äänekoski mill, which started production in August last year and started to have greater impact on production and export volumes this year. During the first half of the year also Finnish paper and paperboard production increased which increased domestic demand for pulp. Production growth was to some extent diminished by harvesting problems occurring in winter. At the same time also export price of bleached pulp increased by 20 percent.

As demand for pulp as well as pulp prices have remained high also in autumn and as there are no major new mills starting production this year or the next, global pulp market is expected to remain tight this year and the next. In Finland this means high export volume and price growth this year.

Export volume is expected to increase by 13 percent, export price by 19 percent and production volume by 8 percent. As production capacity is almost fully used, next year production volume is expected to increase only by 1 percent and export volume by 2 percent. Export price of pulp is expected to remain high, but slightly decrease from this year's exceptionally high price level.

I. Innovative wood products

The outlook for the use of wood in multi-storey residential buildings, large non-residential buildings, and civil engineering are considered promising across Europe. This has boosted the production of engineered wood products also in Finland. Before 2014, there was no CLT production in Finland. In autumn 2018, two CLT mills were already in operation and one nearing completion. The investments in LVL production were discussed earlier in chapter G.

In the several existing investment plans aiming at producing wood pulp, as well as in the completed Äänekoski pulp mill investment, special emphasis is laid on new products and processing of by-products innovatively. In October 2018, Metsä Group's newly established innovation company Metsä Spring Ltd. and Japanese Itochu Corporation announced the decision to build an industrial demo plant to produce wood-based textile fibres in Äänekoski. The capacity of the demo mill is 500 tonnes and the worth of the investment EUR 40 million. In the mill, paper grade wet wood pulp is converted using a novel solvent in the pulp dissolution stage. The new technology is more environmentally-friendly than current technologies. The demo mill is planned to start in late 2019.

Spinnova Ltd. plans to start production in its pilot factory in Jyväskylä. Spinnova develops sustainable textile fibres from cellulose using a unique technique which includes no dissolving chemicals. In Spinnova's technique, finely ground pulp mass is pressed through a nozzle creating an elastic fibre network, which is spun and dried. In 2017, Brazilian pulp company Fibria invested EUR 5 million in Spinnova and became company's majority shareholder.

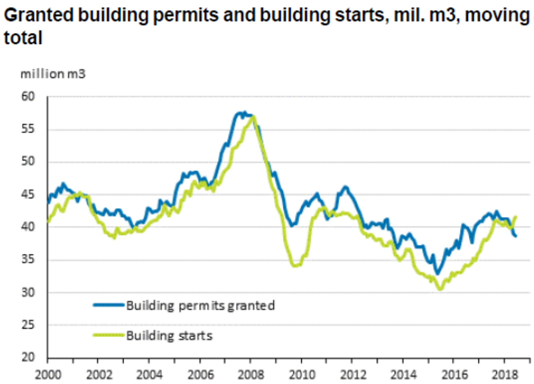
The start-up company Sulapac Ltd. has introduced a new, totally biodegradable composite containing only sustainable and renewable material. Sulapac's composite is designed to substitute plastics especially in packaging. In May 2018, Sulapac and Stora Enso signed an agreement with which Stora Enso became Sulapac's first customer using Sulapac technology and material license.

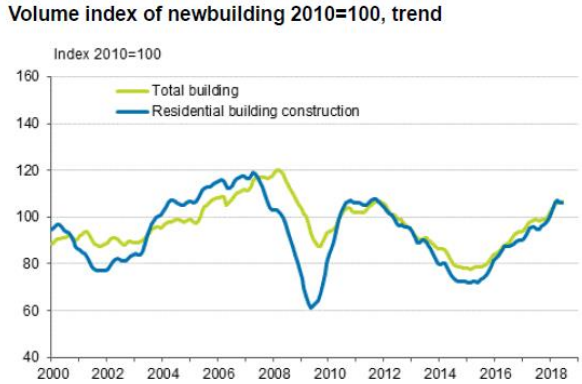
J. Housing and construction

In 2017, the housing construction increased by 5.1 percent while the total construction activity increased by 5 percent. The outlook for the prevailing year, however, is twofold. According to the recent statistics released by Statistics Finland in August 2018, the growth in the construction of industrial buildings stopped at the beginning of the year. In the second quarter of 2018, the volume of ongoing building production, on the other hand, increased by 8.3 percent in year-on-year terms. The volume of residential building construction increased in the period by 12.0 percent and that of other than residential building construction by 5.3 percent.

Released by the Confederation of Finnish Industries in September 2018, the recent business tendency survey of industries reveals that the construction companies consider that the prevalent economic situation is clearly better than normal. However, even though the point value of confidence indicator remains above its long-term average, the confidence has slightly decreased during the early autumn. The decrease of the confidence has mainly been due to deterioration in companies' assessments of the current level of order books. Employment expectations have remained fairly robust.

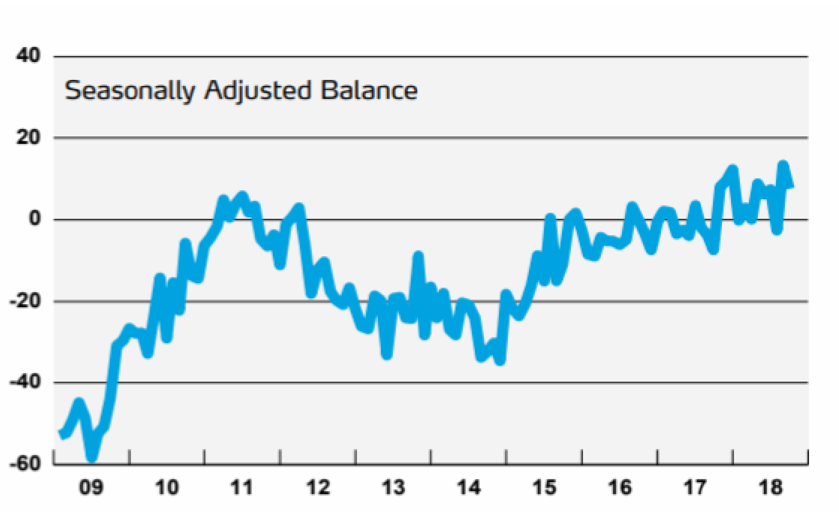
In 2019, the growth in construction activity will slow down. This insight is supported by the recent statistics which reveal that in the second quarter of the ongoing year cubic meters covered by permits for residential buildings amounted to 3.9 million, while one year earlier, the figure was 5.0 million. The total building permits were 20.4 percent lower in year-to-year terms. The Research Institute of the Finnish Economy (ETLA) estimates that the building construction in Finland will increase 6.3 percent in 2018 and 1.7 percent in 2019. The Confederation of Finnish Construction Industries RT, on the other hand, estimates in its September outlook the corresponding figures to be 5.0 and 0.6, respectively.





Source: Statistics Finland

Construction Confidence Indicator



Source: Confederation of Finnish Industries, September 2018
Construction in Finland 2017–2019f

	2017	2018e	2019f
Construction, change in volume, %	3.3	3.0	0.0
Renovation construction	2.5	1.5	1.5
Construction investments, change in volume, %	5.1	4.0	0.0
Building construction	6.2	5.0	0.6
Land and water construction	0.2	0.0	-3.0
Starting up of building construction production, mill. m^3	40.5	40.0	38.0
Residential buildings	13.2	13.4	12.3
Free-time residential buildings	0.6	0.7	0.7
Commercial and office buildings	7.2	7.3	6.8
Public service buildings	3.8	4.1	3.9
Industrial and warehouse buildings	10.6	9.6	9.4
Agricultural buildings	3.3	3.1	3.1
Other buildings	1.8	1.7	1.8
Number of housing production start-ups	44 200	44 000	39 000
Non-subsidised	35 600	35 500	30 500
State-subsidised housing	8 600	8 500	8 500

Source: Confederation of Finnish Construction Industries RT, October 2018

5. TABLES

A. Economic Indicators

Key economic indicators	2017	2018f	2019f
Gross domestic product growth, %	2.8	2,8	2,2
Consumer price index change, %	0.8	1,1	1,4
Wage and salary earnings change, %	0.2	1,9	2,3
Unemployment rate, %	8.6	7,7	7,4
Current account surplus/GDP, %	0.6	0,5	1,4
Industrial output change, %	3,4	4,0	3,3
EUR/USD (at the end of period)	1,18	1,16	1,19

Source: Research Institute of the Finnish Economy (ETLA) 18.9.2018

B. Production and Trade

1. Forest Industry Production in Finland

Product	Unit 1000	2016	2017	2018e	2019f
Sawn softwood	m^3	11 370	11 705	11 950	12 100
Plywood	m^3	1 140	1 240	1 280	1 320
Particle board	m^3	92	92	92	92
Fibreboard	m^3	15	15	15	15
Mechanical pulp	ton	3 457	3 141	3 250	3 250
Chemical pulp	ton	7 459	7 703	8 300	8 400
Pulp, total	ton	10 916	10 844	11 550	11 650
Paper, total	ton	6 809	6 654	6 850	6 800
Paperboard	ton	3 336	3 622	3 800	3 900
Paper & Paperboard total	ton	10 145	10 276	10 650	10 700

Sources: Finnish Forest Industries Federation (2016–2017)
Natural Resources Institute Finland (wood products, pulp and paper 2018e–2019f)

2. Exports of Finnish Forest Industry Products

Product	Unit 1000	2016	2017	2018e	2019f
Sawn softwood	m^3	8 661	9 358	9 250	9 450
Plywood	m^3	940	1 039	1 070	1 100
Particle board	m^3	21	21	21	21
Fibreboard	m^3	44	44	44	44
Mechanical pulp	ton	268	288	280	280
Chemical pulp	ton	3 238	3 367	3 800	3 850
Pulp, total	ton	3 506	3 655	4 080	4 140
Paper, total	ton	6 320	6 224	6 400	6 350
Paperboard	ton	3 258	3 552	3 750	3 850
Paper & Paperboard, total	ton	9 578	9 776	10 150	10 200

Sources: Finnish Customs and Finnish Forest Industries Federation (2016, 2017),
Natural Resources Institute Finland (wood products, pulp and paper 2018e–2019f).

3. Imports of Forest Industry Products

Product	Unit 1000	2016	2017	2018e	2019f
Sawn softwood	m^3	494	568	596	600
Plywood	m^3	93	97	106	106
Particle board	m^3	109	113	113	113
Fibreboard	m^3	173	94	94	94
Pulp, total	ton	424	474	540	500
Paper, total	ton	133	129	120	120
Paperboard	ton	233	219	220	220
Paper & Paperboard, total	ton	366	348	340	340

Sources: Finnish Customs and Finnish Forest Industries Federation (2016, 2017),
Natural Resources Institute Finland (wood products, pulp and paper 2018e–2019f).