

ECONOMIC COMMISSION FOR EUROPE

Timber Committee

October 2020

FINLAND

MARKET STATEMENT

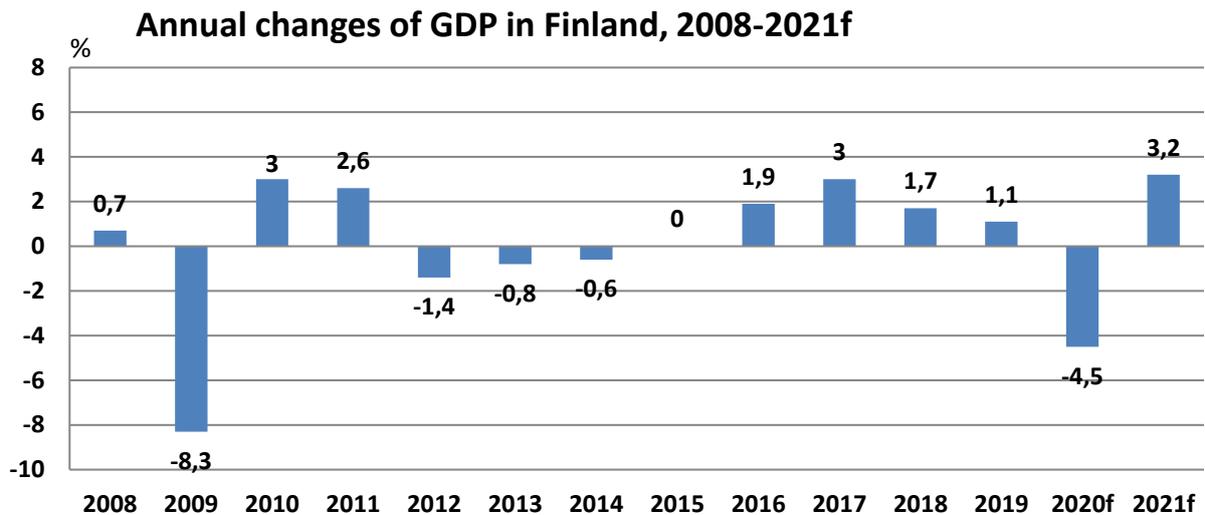
1 GENERAL ECONOMIC TRENDS

In 2019, the Finnish economy grew by 1.1 percent year-over-year. At the end of the year, however, Finland's economic growth turned negative. In the first quarter of this year, the economy contracted further by 1.9 percent and in the second quarter by 4.5 percent from previous quarters. Compared to quarters a year ago, the corresponding percentages were -1.3 and -6.4, respectively. Technically, this means that Finland has been in recession throughout the first half of 2020.

The corona-related restrictions on assembly and movement imposed in the spring affected particularly the service and transport sectors in Finland. Although the rapid rise in unemployment could be avoided through part-time work, lay-offs and other arrangements, the general increase in uncertainty and restrictive measures quickly dampened private consumption. The first wave of the pandemic in Finland was curbed fairly quickly, and the lifting of restrictions at the beginning of June quickly revived consumption and economic activity. However, significant growth in private consumption will be limited by rising unemployment towards the end of this year. In Finland, construction contracted even before corona, but the pandemic even had a stimulating effect on housing renovation, as the renovation of detached houses and summer cottages increased during the spring and summer due to remote work and mobility restrictions. Investments in machinery and equipment, on the other hand, will shrink this year as a result of uncertainty and weakening new orders. With the stimulus packages, public consumption will increase.

The overall development of the Finnish economy is largely influenced by the pull of exports. According to the Finnish Customs' foreign trade statistics, the value of exports of goods fell by more than 17 percent in January-June 2020. The contraction in exports of services has been sharper than in exports of goods. Finnish exports rely largely on various investment commodities, for which there is currently no global demand. The total exports of 2020 are also affected by the forest industry's strike at the beginning of the year, the corresponding losses in production and exports, and the rapidly declining demand for and export volumes of printing and writing paper due to the pandemic. The value of exports from the pulp and paper industry fell in January-June by more than a fifth from the corresponding period last year. Due to world trade at the beginning of the year and weak demand from Finland's main trading partners, paper exports are expected to contract by double digits this year.

According to the confidence indicators published by Statistics Finland in September 2020, after the summer, consumer confidence and perceptions of both the current state of one's own economy and expectations of Finland's economic development in general have weakened slightly again.



Sources: Statistics Finland, Research Institute of the Finnish Economy (2020f, 2021f)

According to the Confederation of Finnish Industries' September confidence indicators, the outlook for construction and industry in the autumn has also darkened. The weak order backlog in industry suggests that industrial production will continue to decline during the autumn and coming winter.

The economic development in Finland towards the end of the year will be strongly influenced by whether the second wave of the pandemic will come during the autumn and, if so, how strong it will be and what measures will be taken to prevent it. The re-introduction of large-scale restrictions would lead to a re-downturn in the economy. The Finnish government would then have to balance the economic and health effects in its decisions. In 2020, the Finnish economy is expected to shrink by 4–5 percent.

Although the economic downturn in the spring was deep, according to economic forecasts published in early autumn 2020, the impact of the corona on the Finnish economy will be smaller than forecast. Retail, services, and private consumption are recovering, but the outlook for industrial production is gloomier. However, the overall economic recovery is slower than in many other countries, due the importance and structure of exports. Although the recovery in important target areas of Finnish exports is underway, the growth in demand will be reflected in a delay in Finnish exports and the growth of exports will not start until next year. Household disposable income will increase next year, supporting growth in private consumption in Finland. Private consumption and exports are the engines of Finland's economic recovery. Public consumption will remain almost at the current year's level, and the extensive support packages made this year will have an impact also next year. In 2021, the Finnish economy is estimated to grow by about three percent.

2 RECENT POLICY MEASURES

Forests are affected at several different policy levels, the most important of which is probably the preparation of a new EU forestry strategy. Although forests are part of national decision-making in the EU, the Forest Strategy brings together and inevitably interprets the steering effects of supranational EU policies on forests. At the beginning of September 2020, the European Parliament's Committee on Agriculture and Rural Development adopted a report on the forest

strategy, the conclusions of which emphasise national decision-making in forest policy and the consideration of the ecological, economic, and social sustainability of forests. The European Parliament will vote on the forest strategy in October and the European Commission will publish a new forest strategy in 2021.

At the national level in Finland, the most significant current legislative project is the reform of the Nature Conservation Act. The reform is underway until the end of September 2021. The Forest Act and the Nature Conservation Act were once drafted in parallel in the 1990s in order to clearly define their division between the use and protection of forests. Since then, the range of nature conservation measures has grown significantly, especially in the direction of voluntary conservation measures. The latest reform, which will take effect at the beginning of November 2020, is the restoration and management measures of the Helmi Habitat Programme in privately owned forests. The new Helmi subsidy would enable the restoration and management of important natural values located on private lands to a greater extent than at present and would encourage the protection of biodiversity.

The reform of the Act on the Financing of Sustainable Forestry (Kemera Act) is also under way, but its completion is linked to the forthcoming EU programme period and the guidelines it sets. Due to delays in the preparation of the EU's common agricultural policy (CAP) and new state aid rules, Kemera is to be extended beyond the original deadline.

Regarding forestry taxation, an increase in the one-off depreciation and expenditure balances of the Income Tax Act, the Business Income Tax Act and the Agricultural Income Tax Act is currently underway, which would enter into force at the beginning of 2021. According to the proposal, the one-off limit for small-scale forestry procurement or the residual depreciation of expenditure would be raised from EUR 200 to EUR 600. The previous limit applied in forestry has been exceptionally low in terms of expenditure to be accrued for tax purposes compared to other tax legislation and has caused additional work for forest owners in taxation. The new limit is also below what has been applied so far in other tax legislation.

The Finnish government agreed to increase the peat tax in a budget dispute in September 2020, and the tax will be increased by 2.7 euros per megawatt hour in the beginning of 2021. In addition, a floor price mechanism will be introduced in energy peat taxation from 2022, which will ensure that, together with the price of allowances, the energy use of peat will be at least halved by 2030, in line with the government programme. According to current forecasts, however, the main energy use of peat will end as early as the 2030s when the price of allowances rises, but it will remain a security of supply fuel. Old peat-fired power plants will have to invest in new technology that will enable the increasing use of forest chips.

3 MARKET DRIVERS

In 2019, the total nominal value of Finnish forest industry exports decreased by more than five percent year-over-year to EUR 12.5 billion. While the nominal value of Finland's total exports of goods increased by a couple of percent, the share of forest industry products in merchandise exports fell to 19 percent. This was one and a half percentage points less than in the previous year. The total value of exports of forest industry products was reduced by both decreased delivery volumes and lower unit export prices than in the previous year. Only export volumes of sawnwood and pulp and the unit prices of exports of paper and paperboard increased.

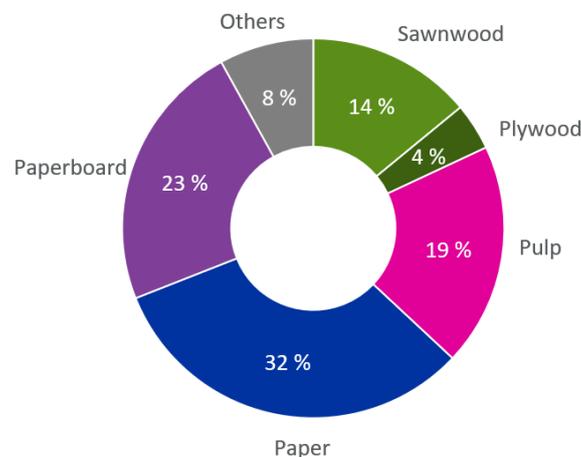
The total value of the wood products industry's exports in 2019 fell by more than four percent from the previous year to just under EUR 2.8 billion. Although sawnwood export volumes increased by three percent to almost nine million cubic meters, a decrease of almost nine percent in average export prices reduced sawnwood export earnings by almost six percent. Plywood exports fell by more than nine percent, with unit export prices freezing to almost the previous year's level.

The total nominal value of exports in the pulp and paper industry was EUR 9.7 billion in 2019. This was about six percent less than in the previous year. The total value of exports was reduced because of 10 percent decrease in paper export volumes and a decrease in average pulp export prices by almost 19 percent. Despite declining demand for printing and writing paper, unit prices for paper exports rose by almost four percent. Paperboard export volumes decreased by a couple of percent as export prices rose by one percent.

The share of paper in the value of total exports of forest industry products has decreased due to the restructuring that has been going on for several years. In 2019, this share decreased further by one and a half percentage points and was less than a third of the total value of Finnish forest industry exports. The share of pulp in exports, on the other hand, has increased. In 2019, the wood products industry accounted for 22 percent of the value of exports of forest industry products and the pulp and paper industry for 78 percent.

The distribution of the value of exports of forest industry products is affected by the market prices and export volumes of the various product groups to the target countries. Looking at consecutive years, there have generally been no major changes in export earnings from the target regions. In the longer term, however, clear trends can be observed, such as the growing importance of China. In 2019, almost 30 percent of the export earnings of the wood products industry came from the euro area. In the pulp and paper industry, the corresponding share was 39 percent. In the euro area, exports of forest products to Germany declined by almost one hundred million euros. In Germany, the weakened economic development had an impact on demand for paper, which was reflected in lower paper deliveries and lower unit prices. Despite the confusing political situation in Britain and Brexit, the forest industry exported EUR 914 million worth of forest industry products to Britain.

Shares (%) of the export value of Finnish forest industry products by industry in 2019



Sources: Finnish Customs, Luke

Distribution of the value of exports of Finnish forest industry products in 2018 and 2019



Sources: Finnish Customs, Luke

Forest industry export revenues from China decreased by EUR 90 million last year compared to the previous year. Although pulp export volumes increased, the decrease in average unit prices of bleached softwood sulphate pulp by almost EUR 200 reduced total export earnings. The development of wood products exports to China was similar: sawnwood export volumes increased, but unit export prices decreased. Export revenues from Japan increased slightly last year.

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 working 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.

4. DEVELOPMENT IN FOREST PRODUCTS MARKETS

A. Raw wood

In January-February 2020, industrial actions in the forest industry together with the unfavourable winter weather conditions for harvesting in southern Finland affected roundwood trade in Finland. In March 2020, the corona pandemic began to affect the structure of demand for forest industry products. This further was reflected in the roundwood trade, which in private forests decreased by 22 percent in January-August year-over-year.

However, if January-February 2020 is excluded from the roundwood trade volumes, the situation seems different. During the corona pandemic, the decline in roundwood trade has been only 10 percent. During March-August, the trade of pine logs decreased by 10 percent but increased by three percent for spruce logs and by nine percent for birch logs. The total roundwood trade has decreased by only two percent year-over-year in August 2019-August 2020. During March-August 2020, the pulpwood trade decreased more clearly than the sawlogs trade, by as much as 16 percent. Trade in pine pulpwood has decreased by 21 percent, while in spruce and birch pulpwood the decrease has been smaller. The changes reflect a rapid change in the structure of demand for forest industry products, as a result of which industrial roundwood purchases have shifted to sawlog-intensive final felling and subsequent thinning.

Stumpage prices have remained rather stable since the end of last year, which, together with traded roundwood volumes, indicates an economic downturn. Harvesting of industrial wood in January–July 2020 decreased by 18 percent compared to the corresponding period last year. The fellings of pine and spruce sawlogs and pine pulpwood decreased slightly less than the average, by 14–16 percent, while the fellings of spruce pulpwood, birch log and birch pulpwood decreased by 21–25 percent. The total fellings of logs decreased by 15 percent and of pulpwood by 20 percent.

Loggings of private forests are estimated to decrease by 13 percent in 2020. When the fellings of the state and companies decrease slightly more moderately, the total fellings of industrial wood will decrease by 12 percent to 56 million cubic meters. Although the development of stumpage prices has been very stable since the end of last year, as an annual average, stumpage prices of sawlogs are forecast to fall by 2 to 4 percent. Pulpwood stumpage prices will remain at approximately last year's level. Roundwood imports will increase by 8 percent.

In 2021, the roundwood market is expected to recover, driven by growth in the wood products industry. Because of this, the fellings of industrial roundwood are estimated to increase by 4 percent. The log prices of logs are supposed to increase by 3–4 percent from the current year. Pulp and paperboard production volumes are also increasing, which raises pulpwood stumpage prices by 0–3 percent. Imports of roundwood are forecast to remain at the current year's level.

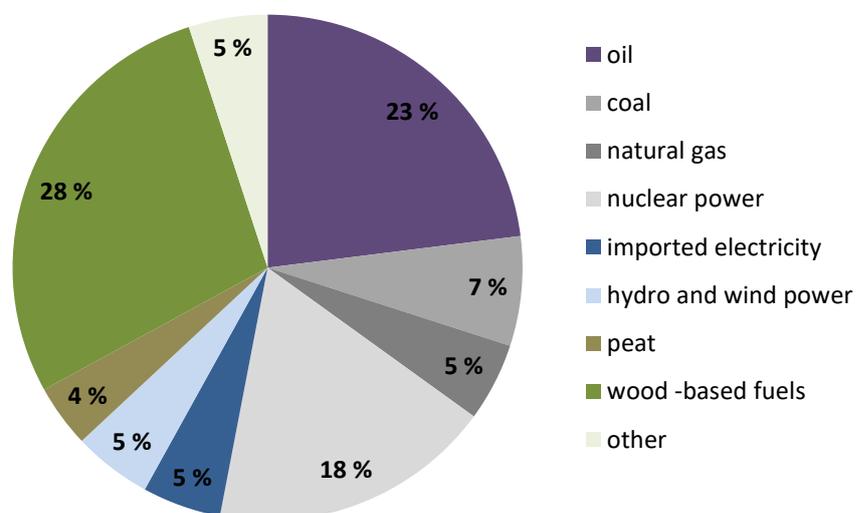
B. Wood energy

In 2019, the consumption of solid wood fuels was 20.5 million solid cubic metres in Finland (39.4 terawatt-hours) being two percent more than in the previous year and more than ever before. Solid wood fuels remained the most important individual energy source in Finland with a share of 28 percent. The 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 2018 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.

In 2019, the use of forest chips was 8.1 million cubic meters (m³) of which 7.5 million m³ was used in heating and power plants. The use of forest chips increased by two percent from 2018. Most of the forest chips, 3.9 million m³, was manufactured from small-sized trees, i.e. from pruned and unpruned stems. The consumption of logging residues increased by six percent from the year before to 2.9 million m³, being the highest volume ever recorded in the statistics. Furthermore, the consumption of large-sized decayed roundwood was 0.4 million and that of stumps was 0.3 million m³. In 2020, due to mild winter the use of forest chips is estimated to stay in the same level as in the previous year. In 2021, the use of forest chips is estimated to increase by 3 percent. The plant price of forest chips in 2019 was EUR 20.9 per megawatt hour, which is 3 percent higher than 2018. In 2020, the average plant prices of wood chips are expected to increase 3–4 percent.

Domestic production of wood pellets in Finland decreased 6 percent to 363 000 tons in 2019. Apparent consumption was 433 000 tons (production + import – export). Deliveries by pellet producers based on domestic pellet production, 333,000 tonnes, were at the 2018 level. The amount of wood pellets delivered to power and heating plants and large buildings increased by 5 percent to 282 000 tonnes. The amount of wood pellets delivered to small-scale housing and farms decreased by nearly one fifth to 51 000 tonnes. Domestic consumption and production are estimated to increase slightly at 2020 and 2021.

Energy consumption in Finland in 2019 by source of energy



Source: Statistics Finland

The price of EU emission allowances has been increased strongly during the last years (from around 5 €/t CO₂ to 25–30 €/t CO₂). The emission trading has a strong influence on the competitiveness of wood-based fuels and their use in energy plants. Together with rise in world market prices of fossil fuels (especially coal) it has created the situation, where forest biomass is more competitive. However, changes in taxes, subsidies and regulations have fast and strong influence on the use of renewable energy sources in bioenergy markets. In the EU, 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.

In Finland coal-fired power and heating generation will be banned as of 1 May 2029. The coal ban will promote a low-carbon energy system, stimulate the use of renewable energy sources, and ensure healthier living environment. In addition, the taxes for energy-peat has been decided to raise and the use of peat for energy decrease by at least half by 2030.

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 18.3 million hectares (by mid-2020). This accounts for 91 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 2.1 million hectares or approximately 10.3 percent of the forest area. 1.99 million hectares are double certificated (9/2020).

In 2018, the requirements for the risk assessments of FSC controlled wood (used in FSC mix products) were changed. Earlier they were made by the companies buying timber, but after the new requirements, the risk assessments must be done at country level. In Finland, the country level assessment changed the status of some forest areas, especially due to different interpretation of acceptability categories about violation of traditional rights and forests with high conservation values. The debate about these area's forestry use is ongoing.

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 September 2020 was 242, whereas FSC has granted 149 CoC certificates. 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 2019, the production volume of the Finnish sawmill industry and the export price of sawnwood began to decline from the cyclical peak of 2018. Sawnwood exports, in turn, increased as sawnwood stocks that had inflated in 2018 were unloaded during the first half of 2019. Europe and North America experienced a decrease in the consumption of softwood sawnwood as construction growth slowed. In contrast, the consumption of softwood sawnwood continued to grow in China in 2019.

Finnish sawmill industry in 2019.

	Sawnwood 1000 m ³	Share of production %	Volume change 2019/2018 %
Production, of which	11 330	100	-4
Domestic market*	2 363	21	-25
Exports, of which	8 967	79	3
Euro area	2 159	19	-3
<i>Germany</i>	479	4	-6
<i>France</i>	468	4	-3
<i>Estonia</i>	348	3	-8
<i>Others</i>	863	8	1
Other Europe	1 208	11	-7
<i>United Kingdom</i>	840	7	-8
<i>Others</i>	368	3	-5
Asia	3 258	29	11
<i>China</i>	1 234	11	14
<i>Japan</i>	893	8	-3
<i>Saudi Arabia</i>	475	4	106
<i>Israel</i>	361	3	-17
<i>Others</i>	295	3	11
Africa	2 283	20	6
<i>Egypt</i>	1 519	13	18
<i>Algeria</i>	447	4	-14
<i>Others</i>	317	3	-10
North America	39	0	44
<i>Others</i>	20	0	-66

*Apparent consumption of sawnwood production in Finland = production – exports. Sawnwood includes softwood and hardwood sawnwood.

Sources: Finnish Customs, Finnish Forest Industries Federation.

Despite the slowdown in demand in several regions, the supply of softwood sawnwood remained high globally in 2019. In Europe, the supply of sawnwood was boosted by extensive forest damage in Central Europe, which brought low-cost spruce logs to the market. The mismatch between supply and demand led to a broad-based decline in the price of softwood sawnwood, which was also reflected in a nine percent year-over-year decrease in the average export price of Finnish sawnwood in 2019. The decline continued until December 2019, when the export prices of both pine and spruce sawnwood were several tens of euros per cubic metre lower than in autumn 2018.

The weakening of economic outlook led to production restrictions at several Finnish sawmills in late 2019. In addition, industrial actions stopped production at some sawmills in December. In the last quarter of 2019, Finnish sawnwood production was 14 percent lower than year earlier.

Outlook for years 2020 and 2021

At the beginning of 2020, demand in the export markets seemed to strengthen, and the export price of Finnish sawnwood began to rise cautiously. However, Finnish sawnwood production was hampered by poor harvesting conditions in the early winter and the four-week mechanical forest industry strike that began at the end of January. In February 2020, sawnwood production decreased

by as much as 40 percent compared to February 2019. In March 2020, however, sawnwood production exceeded slightly the figures of March 2019.

The COVID-19 pandemic and the related restrictive measure were first reflected in construction activity and demand for softwood sawnwood in China. Sawnwood imports into China plummeted in the first quarter of 2020 but rebounded already in the second quarter. The supply of softwood sawnwood to Chinese markets during 2020 has been strong especially from Russia and forest-damage-plagued Central Europe, which has effectively curbed the rise in prices. In the first half of 2020, the Finnish sawnwood exports to China were 19 percent less than year earlier.

In Europe, construction was partially suspended due to corona restrictions in, e.g. France, Britain, Spain, and Italy. However, in many countries, such as Germany, efforts were made to keep construction going. Throughout Europe, as well as North America, the demand for sawnwood has been supported by the surprisingly strong growth in DIY construction during the pandemic. In the first half of 2020, Finnish sawnwood exports to Britain decreased by 39 percent, to France by 31 percent, and to Germany by 15 percent (y-o-y). According to Euroconstruct, construction volumes are forecast to decrease by 11.5 percent this year and to rebound by six percent next year. However, the differences between countries are large: a deep drop for Britain, a minor decrease for Germany.

In North Africa, a vital market area for Finnish pine sawnwood exports, the fall in oil prices and the collapse of tourism, especially in Egypt, have reduced foreign exchange earnings, which combined with corona restrictions has led to a contraction in demand for sawnwood and a descent in prices. In the first half of 2020, Finnish sawnwood exports to Egypt dropped by 28 percent year-over-year and exports to Algeria by 33 percent. The drop in North Africa was at least partially compensated by the growth in exports to Saudi Arabia (+27%) and Israel (+4%). In Saudi Arabia, Finnish softwood sawnwood, has recently been able to win market shares from Swedish and South American sawnwood.

Although the corona pandemic has accelerated in the fall 2020, nations are not expected to take as extensive restrictive measures as at the beginning of the pandemic. During the second half of 2020, the Finnish sawnwood exports are expected to develop relatively steadily and the export price to rise slightly further. For the whole of 2020, the volume of sawnwood exports is estimated to be slightly below eight million cubic meters, a year-over-year reduction of 12 percent. Although the decline in export prices was reversed at the beginning of 2020, the average export price for the whole year will remain slightly lower than in 2019.

In 2021, Finnish sawnwood exports are expected to grow by eight percent as economies recover and demand grows in export markets. At the same time, the export price of sawnwood will rise, but the rise will be limited, especially in Europe, by the abundance of sawnwood supply. Driven by exports, the Finnish softwood sawnwood production is projected to grow by six percent, to 10.9 million cubic meters in 2021.

Despite the increased pandemic-driven uncertainty, investment plans have been announced and decisions have been made on investments in sawnwood production in Finland in 2020. The most significant of these is Metsä Fibre's decision to build a sawmill producing 750,000 cubic meters of pine sawnwood per year in Rauma. The sawmill is scheduled to start up in the third quarter of 2022.

F. Sawn hardwood

Hardwood sawnwood is a marginal product in Finland, and currently, only one sawmill of industrial scale is sawing birch. The estimated annual production volume of hardwood sawnwood is about 40 000 m³.

G. Wood-based panels

The production of wood-based panels is dominated by plywood in Finland. There is no OSB or MDF/HDF production, while both particle board and hardboard is produced in one mill only. In 2019, tense competition in the European market reduced the export price of Finnish birch plywood. Accordingly, production was restricted in birch plywood mills throughout the year. The development of demand for softwood plywood was more positive as construction still grew in Europe. However, the pull of softwood plywood exports weakened towards the end of 2019, and softwood plywood production was also restricted in Finland. Total plywood production and exports decreased by 12 percent in 2019 compared to 2018.

Finnish plywood industry in 2019.

	Plywood 1000 m ³	Share of production %	Volume change 2017/2016 %
Production, of which	1 090	100	-11
Domestic market*	172	16	-21
Exports, of which	918	84	-9
Euro area	415	38	-7
<i>Germany</i>	142	13	-18
<i>Netherlands</i>	138	13	4
<i>Others</i>	135	12	-3
Other Europe	382	35	-10
<i>United Kingdom</i>	138	13	-1
<i>Sweden</i>	105	10	-14
<i>Denmark</i>	46	4	-22
<i>Norway</i>	47	4	-6
<i>Others</i>	46	4	-17
Asia	35	3	-37
Africa	4	0	-45
North America	55	5	-2
Others	29	3	16

* Apparent consumption of plywood production in Finland = production – exports.

Sources: Finnish Customs, Finnish Forest Industries Federation.

Outlook for years 2020 and 2021

In the first quarter of 2020, plywood exports contracted by 24 percent and production by a third compared to the same period in 2019. The main reason for the decline was, as in the sawmill industry, the prolonged strike in the mechanical forest industry. Demand for birch plywood in industrial applications, such as in the transport industry, was subdued before the onset of the corona pandemic, but despite this, the export price of Finnish birch plywood rose in March 2020. In April,

the export price began to fall. As a result of the pandemic, the demand for birch plywood in the transport industry has weakened further, and the production of birch plywood has been restricted in both Finland and Russia. In addition, UPM-Kymmene Plc. announced that it would close its Jyväskylä plywood mill by the end of July 2020. The mill, with a capacity of 100,000 cubic meters, has produced both birch and softwood plywood.

Export demand for softwood plywood has remained better than in the case of birch plywood. This has been influenced by the relatively shallow slump in construction volumes in some main export destinations and the growing popularity of DIY construction. The export price of softwood plywood fell in February 2020, but then returned to average level of 2019.

Both plywood production and exports are forecast to fall by 12 percent in 2020 from the 2019 level. The average export price of plywood is expected to fall by three percent. As the export markets recover in 2021, plywood exports are expected to grow by nine per cent and the average export price by one per cent. Plywood production is forecast to grow by six percent in 2021.

H. Pulp and paper

Finnish paper and paperboard industries are highly dependent on the changes in international demand. In 2019, 98 percent of the Finnish paper and 97 percent of paperboard production was exported. The main export destination is Europe, and approximately two thirds of paper and paperboard is exported to European countries. Other important export regions for paper are Asia and North America. China has importance in export of pulp, especially. The investments in chemical pulp capacity have enabled increments in the market pulp exports in recent years, but still approximately half of the production volume is used by domestic paper and paperboard mills. The main export destination of Finnish market pulp is Europe. However, as an individual country, China is currently by far the most important single market. In 2019, 41 percent of the Finnish pulp exports were to China.

There have been significant changes in the structure of the Finnish pulp and paper industry during the last 10–15 years. Due to the decline of international demand for paper, significant amount of paper machines has been closed. Capacity changes have continued during the recent years. The most recent announcement of closure was received in autumn 2020 as UPM announced that it will close down Kaipola paper mill in central Finland by the end of 2020. Despite closures paper was still in 2019 the most important export product of the Finnish forest industry, but as export of paperboard has increased the difference between paper and paperboard export volumes has decreased.

At the same time with decline in paper production, the capacity of paperboard industry and its share of total forest industry production have increased. During 2015–2016 major investments were carried out by Stora Enso and Kotkamills as they converted paper machines into kraftliner and folding boxboard production. In autumn 2020, Stora Enso switched production from woodfree coated paper to kraftliner in one of the paper machines of Oulu mill in northern Finland. The other paper machine of the mill was shut down.

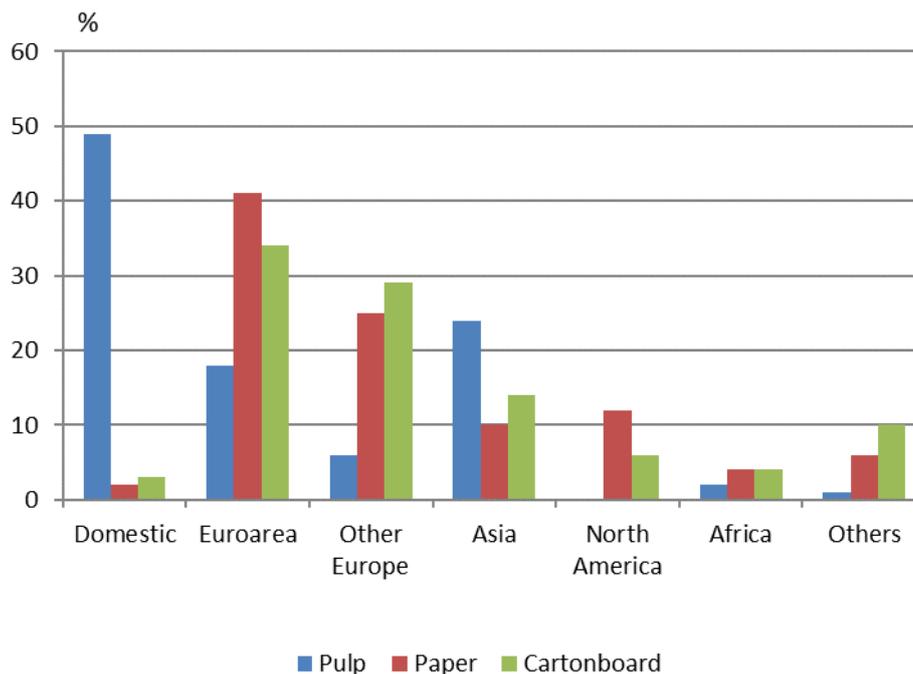
Significant increase has occurred also in pulp production capacity in Finland. Especially, Metsä Group's pulp mill in Äänekoski expanded production capacity in the country (net increase 0.77 mill. t/year, total capacity 1.3 mill. t/year) in 2017. UPM has carried out several expansion projects in company's pulp mills in Finland. Capacity expansion has been a consequence of increasing

demand for pulp. In 2019, the volume of pulp production in Finland was approximately 19 percent higher than it was in 2014. Currently there are several greenfield plans to further increase pulp production capacity in Finland.

In 2019, Finnish paper production decreased by 14 percent and export by 10 percent year-over-year. Production decreased from 6.73 to 5.8 million tons. Decrease was somewhat deeper than in Europe in general as according to Euro-Graph, demand for graphic papers declined in Europe in 2019 by 8.4 percent. More negative development in Finland is partly explained by closure of one paper machine in 2019. As production of paper also production of paperboard decreased last year. The decrease was, however, minor, approximately 3 percent. The production of chemical pulp increased last year by two percent. Increase was due to increased capacity and still good demand in global market. Export was 12 percent higher than a year before.

Average export price of paper increased in 2019 by four percent and export price of paperboard by one percent. However, development of pulp export price was poor, and it decreased by 20 percent from the year before.

Domestic Use and Exports of Finnish Pulp, Paper and Cartonboard in 2019 (% of production)



Sources: Finnish Customs, Luke, Finnish Forest Industries Association

Outlook for 2020 and 2021

The outlook for Finnish pulp and paper industry is characterised by the decrease of paper production. Demand for paper has weakened this year sharply in Europe, the main market of Finnish paper producers. In January-July total demand for graphic papers declined in Europe by 21 percent compared to same period in 2019. This was because of COVID-19 pandemic and following

sharp consumption decline. Due to digitalisation downward trend will continue also in coming years. European paper prices have also been decreasing most of year 2020.

In Finland paper production is expected to decline significantly in 2020 and 2021 due to closure of two paper machines in Stora Enso Oulu mill (the other is converted to paperboard production) and UPM Kaipola mill in autumn 2020. The total production capacity of these paper mills is approximately 1,8 million tons of paper in a year. The decline in production and exports of paper has been exacerbated in Finland not only by the effects of the pandemic and closures, but also by the industrial actions in the early part of the year. In 2020 decrease in production is expected to be seen also in pulp and paperboard production and export volumes.

Next year, in addition to declining demand, the decline in Finnish paper production will be affected by already announced capacity cut downs. Paper production in Finland is estimated to decrease by a total of almost 40 per cent during 2020–2021 from production figures for 2019. Both this year and next year, also average export prices are expected to fall.

On the Finnish board industry, the immediate impact of the COVID-19 pandemic in spring was positive as demand for board increased. In 2020, however, production and export volumes will remain slightly lower than last year as a result of the economic downturn and labor disputes at the beginning of the year. Stora Enso's Oulu krafliner machine, which will start up at the end of 2020, will significantly increase total board production volume in Finland next year. Production and export from Finland will increase by 13 percent. The average export price of cartonboard will decrease next year, as the share of krafliner, which is cheaper than folding boxboard, will increase in exports. Altogether, the outlook for the board remains positive. As production and export of cartonboard rises in 2021, it will become Finland's most important forest industry product in terms of export value.

Chemical pulp export from Finland will decrease this year by five percent due to the weakening global market situation and decreasing paper demand. Pulp production in Finland will decrease clearly more than exports from Finland as domestic demand decreases with the closure of paper machines. Next year, economic growth is expected to recover and demand for pulp will also strengthen. Finland's average export price will be about 14 percent lower this year than last year due to already experienced price fall in 2019. Next year the price will rise, but price level will be still far from the peak years.

I. Innovative wood products

The expected growth of the use of wood in large-scale residential, commercial, and public constructions in both the domestic and export markets has boosted the investments in production of engineered wood products in Finland in recent years. New CLT mills have been built in Kuhmo (2014), in Alajärvi (2017), and in Kauhajoki (2018). Stora Enso Plc.'s new LVL plant in Varkaus started in 2016 and Metsä Wood's new LVL line in Savonlinna in 2019.

In the several pulp mill investment plans, such as in Kemijärvi, Kemi, Paltamo, and Kuopio, much emphasis is laid on innovative new products and processing of by-products. However, actual investment decisions in new pulp mills have not been made due to, e.g. the protracted environmental permit processes. In the case of Finnulp Ltd.'s Kuopio mill, the Finnish Supreme Administrative Court revoked the environmental permit in the late 2019. However, Finnulp has announced that it will explore options for implementing the project.

Several R&D projects focusing on wood-based textile fibres have been launched in Finland. In 2018, Spinnova Ltd. built a pilot plant to produce textile fibres directly from wood pulp without dissolving chemicals. In 2019, Metsä Spring Ltd. invested in a textile testing unit in Äänekoski next to Metsä Fibre's new pulp mill. In the test facility, a new technology for producing wood-based textile fibres is being developed and tested. In September 2020, Stora Enso Ltd. applied for an environmental permit for a textile fibre test facility in Enocell pulp mill in Joensuu. The application is part of Stora Enso's exploration of possible location for a pilot textile fibre plant either in Finland or Sweden.

In packaging, Metsä Spring Ltd. has invested EUR 20 million in a packaging test facility in Äänekoski. The testing plant, in which 3-D packaging products are manufactured directly from wet pulp, will be entering production in 2021.

In 2019, Stora Enso invested EUR 10 million in a pilot mill to produce bio-carbon from lignin at Sunila mill, Kotka. The mill is planned to be completed at the beginning of 2021.

J. Housing and construction

In 2019, the housing constructions decreased by 2.1 percent while the total construction activity decreased by 0.9 percent. The outlook for the prevailing year, however, is still rather pessimistic along the corona epidemic and downturn of the economic growth in Finland.

According to the recent statistics released by Statistics Finland in September 2020, the building permits were granted for a total of 8.6 million cubic metres in May to July 2020, which was as much as 35.4 percent lower than in the corresponding period one year ago. The cubic volume allocated to residential construction decreased by 28.6 percent and the cubic volume allocated to non-residential construction decreased by 37.9 percent. In all house types, the cubic volumes decreased significantly from a year ago, with the largest decrease in the number of cubic meters allocated to commercial and office construction, up to 52.6 percent.

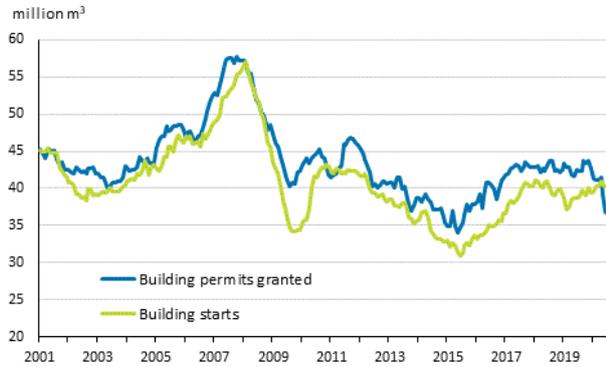
The recent business tendency survey of industries, released by the Confederation of Finnish Industries (CFI) in September 2020, revealed that the construction confidence indicator scored -15 in September, which is clearly below its long-term average which is -6. Companies' assessments on order books increased but the level is still clearly below the normal. According to CFI, expectations concerning the labour market are more pessimistic. Seasonally adjusted workforce numbers are expected to drop from the current levels during the next few months.

The construction forecast of The Confederation of Finnish Construction Industries RT in May 2020, which may be now already slightly outdated, revealed that the construction in total will decrease by -5.0 percent in 2020 and -4.0 percent in 2021 in Finland. The outlook for the construction sector has taken a clear nosedive after the outbreak of the corona epidemic. While the clients are postponing projects, it seems that construction will slow down during the next few years – the risk for long-term downturn exists.

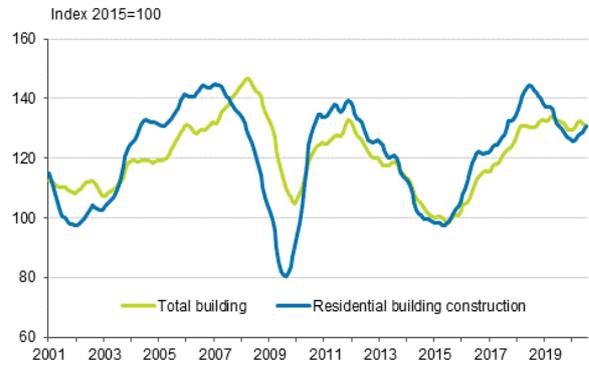
Similar outlook was given by The Research Institute of the Finnish Economy (ETLA) in its September forecast. Residential construction is forecast to decrease by 1.0 percent and other building construction 1.8 percent this year. Public waterway and other non-recurring infrastructure projects, however, are particularly visible in the growth of civil engineering in 2020. Civil

engineering is expected to grow this year 7 percent with respect to a year ago. In 2021, total construction is forecast to decline one percent.

Granted building permits and building starts, mil. m3, moving annual total

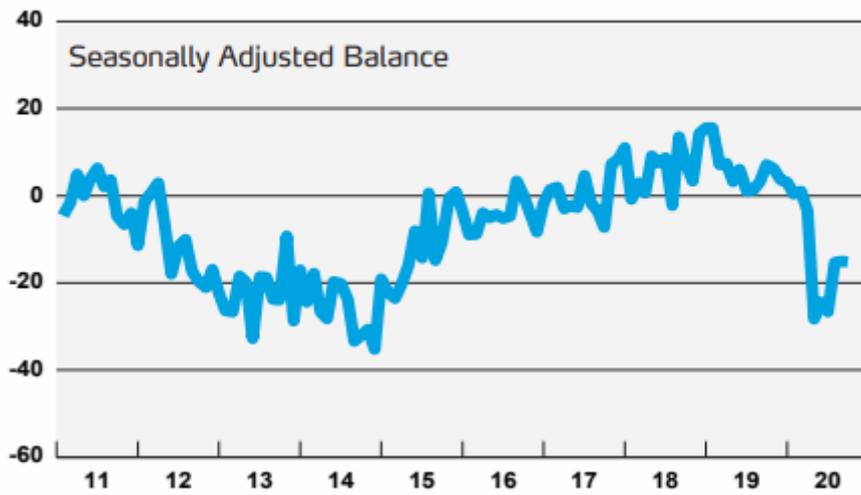


Volume index of newbuilding 2015=100, trend



Source: Statistics Finland, 22 September 2020

Construction Confidence Indicator



Source: Confederation of Finnish Industries, 28 September 2020

5. TABLES

A. Economic Indicators

Key economic indicators	2019	2020f	2021f
Gross domestic product growth, %	1,1	-4,5	3,2
Consumer price index change, %	1,0	0,5	1,3
Wage and salary earnings change, %	2,1	1,8	2,3
Unemployment rate, %	6,7	8,1	7,9
Current account surplus/GDP, %	-0,5	-0,6	-0,3
Industrial output change, %	3,8	-4,8	3,2
EUR/USD (at the end of period)	1,12	1,18	1,18

Source: Research Institute of the Finnish Economy (ETLA) 14.9.2020

B. Production and Trade

1. Forest Industry Production in Finland

Product	Unit 1000	2018	2019	2020e	2021f
Sawn softwood	m ³	11 810	11 360	10 300	10 900
Plywood	m ³	1 230	1 090	960	990
Particle board	m ³	92	92	88	92
Fibreboard	m ³	20	49	49	49
Mechanical pulp	ton	3 510	3 280	2 770	2 430
Chemical pulp	ton	8 150	8 320	7 530	7 750
Pulp, total	ton	11 660	11 600	10 300	10 180
Paper, total	ton	6 725	5 800	4 380	3 580
Paperboard	ton	3 815	3 710	3 670	4 160
Paper & Paperboard total	ton	10 540	9 510	8 050	7 740

Sources: Finnish Forest Industries Federation (2018–2019)

Natural Resources Institute Finland (wood products, pulp and paper 2020e–2021f)

2. Exports of Finnish Forest Industry Products

Product	Unit 1000	2018	2019	2020e	2021f
Sawn softwood	m ³	8 685	8 952	7 900	8 500
Plywood	m ³	1 012	918	810	880
Particle board	m ³	24	21	19	20
Fibreboard	m ³	48	45	45	45
Mechanical pulp	ton	274	254	280	210
Chemical pulp	ton	3 771	4 230	4 020	4 220
Pulp, total	ton	4 045	4 484	4 300	4 430
Paper, total	ton	6 346	5 690	4 280	3 500
Paperboard	ton	3 688	3 599	3 560	4 040
Paper & Paperboard, total	ton	10 034	9 289	7 840	7 540

Sources: Finnish Customs and Finnish Forest Industries Federation (2018, 2019),
Natural Resources Institute Finland (wood products, pulp and paper 2020e–2021f).

3. Imports of Forest Industry Products

Product	Unit 1000	2018	2019	2020e	2021f
Sawn softwood	m ³	606	567	580	580
Plywood	m ³	108	119	130	130
Particle board	m ³	125	120	120	120
Fibreboard	m ³	169	137	137	137
Pulp, total	ton	479	334	240	100
Paper, total	ton	115	83	80	100
Paperboard	ton	218	220	200	200
Paper & Paperboard, total	ton	333	303	280	300

Sources: Finnish Customs and Finnish Forest Industries Federation (2018, 2019),
Natural Resources Institute Finland (wood products, pulp and paper 2020e–2021f).