

# Economic Outlook

Technology Industries of Finland

1 | 2022

## Global And Finnish Economic Outlook

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## ECONOMIC OUTLOOK 1 | 2022

Information based on the situation on 3 February 2022

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Please visit the homepage of the Federation of Finnish Technology Industries for additional information on technology industry turnover, exports, investments, personnel and the development of producer prices: [www.techind.fi](http://www.techind.fi).

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## Strong momentum continues in technology industry – Supply chain issues may be easing

Economic recovery has maintained strong momentum at the turn of the year, despite the very fast spread of the Omicron variant. However, the service sector has again been affected by extensive restrictions, and with many employees out sick, businesses have found it hard to keep running, in particular in the United States. While the impact of the Omicron variant remains quite limited on the manufacturing sector, any restrictions introduced to stop it from spreading are likely to prolong the supply chain disruptions.

According to the outlook published by the International Monetary Fund IMF at the end of January, the global economy is projected to grow 4.4 per cent in 2022. This is half a percentage point lower than in the outlook published in October. The downward revision is due to factors such as the restrictions related to the Omicron variant as well as inflation that is more prolonged than anticipated.

Downgrades have been made for both China and the USA. Tighter fiscal policy is expected in the United States, which is anticipated to slow down growth. In China, slower growth expectations are related to the zero-tolerance COVID-19 policy. The protracted financial stress among Chinese property developers will also burden growth throughout 2022.

According to the Purchase Managers' Indices, manufacturing continues to fare well in Europe. The PMIs also contain faint signals of possible easing of supply chain issues, at least to some extent. In terms of production input, price pressures have eased somewhat, and companies have finally been able to increase their stocks, which are essential for smooth production.

In the United States, however, the situation remains more challenging. Manufacturing continues to suffer from supply chain disruptions on a very wide scale. The number of employees out sick is also high enough to have a clear negative impact on production. On the upside, demand remains good.

Manufacturing activity in China remains subdued, but the outlook has improved somewhat. For the first time in a long while, slight growth is expected over the coming months. Cost inflation seems to be levelling out also in China. However, the overall situation does not yet indicate a significant improvement

in future outlook, because the number of people in employment is expected to fall for the fifth month running.

Despite persistent supply chain challenges, short-term outlook in manufacturing looks quite good. However, as the last year showed us, it is very difficult to anticipate how much longer the supply chain issues will persist. At the moment, it seems safe to say that challenges will continue long into 2022. Should the situation gradually improve, manufacturing may experience very strong growth in early 2022.

### Inflation more prolonged than anticipated

Inflation has proven more persistent than expected, and in the United States in particular, also much higher. The European Central Bank (ECB) has kept its projections moderate, expecting inflation to slow down considerably in 2022, which means that no sudden policy tightening is seen necessary at the moment. In contrast, the Federal Reserve in the United States has sent stronger signals. The message is clear: if deemed necessary, the central bank is prepared to introduce rate hikes at every meeting in 2022.

The uncertainty in relation to inflation and central banks' reactions has been reflected on the stock market. Several stock indexes have dropped significantly from the end of 2021.

While tighter monetary policy, or rather a move towards a more normal situation is in certain respects welcome after years of zero interest-rate policy, it also involves risks that are difficult to predict.

It is clear that the current good cycle is largely due to massive fiscal stimulus, which is driven by even more massive monetary stimulus. The growth we are currently seeing is driven by low interest rates and record levels of debt. The public sector in particular has seen a dramatic increase in the level of debt. This raises the question whether any future rate hikes will cause new crises in public finance in the eurozone for example. Another question is how such crises can be solved if the central bank has very limited means to act because of high inflation.

Eurozone recovery slowed at turn of year, underlying service sector difficulties

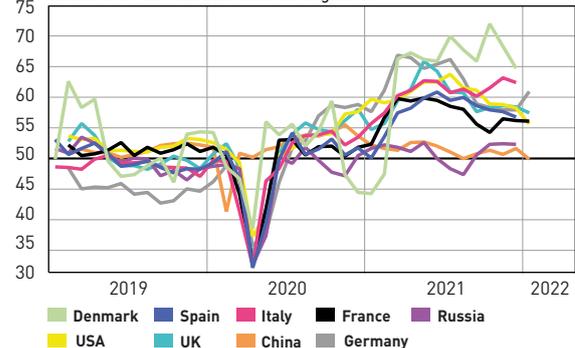
Eurozone manufacturing and services purchasing manager index, values over 50 indicates economic growth



Latest information: January 2022  
Source: Markit, Macrobond

The good situation of the manufacturing industry continues despite the omicron

Manufacturing purchasing manager indices, values over 50 indicates economic growth



Latest information: January 2022  
Source: Markit, Macrobond

## Global baseline outlook is good, but there are significant risks, some of which are quite unpredictable

The global economic outlook involves many risks, such as supply chain disruptions, which in part contribute to the inflationary pressure, possible wage inflation, as well as the reactions of central banks and governments to the new situation. In the worst-case scenario, we will approach stagflation, or recession-inflation.

It is also too early to rule out further COVID-related risks in the future. Supply chain challenges in particular could worsen quickly if extensive restrictions have to be reintroduced.

Geopolitical tensions are also likely to remain at a level not seen in a long time. Should the situation between Ukraine and Russia escalate, it would inevitably have a negative impact on the economic outlook. Approximately 5.5 per cent of exports of goods from Finland went to Russia in 2021. In technology industry, the share of exports to Russia was slightly higher and came to 5.8 per cent.

If the above-mentioned risks do not materialize in 2022, the supply chain disruptions ease gradually and no new problems emerge, the Finnish technology industry may be expected to see growth and maybe even strong growth. However, skills shortages will not ease if nothing is done. Even in a good cycle, growth may fizzle out because of labour shortages.

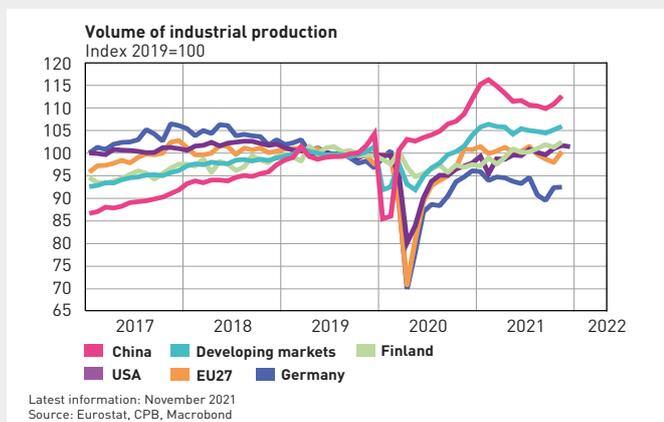
## Considering the risks, cost level of the export industry agreement is too high

The Bank of Finland published an analysis and forecast of the development of Finnish cost-competitiveness on 26 January 2022. It takes into account the results of the collective bargaining agreements made in January.

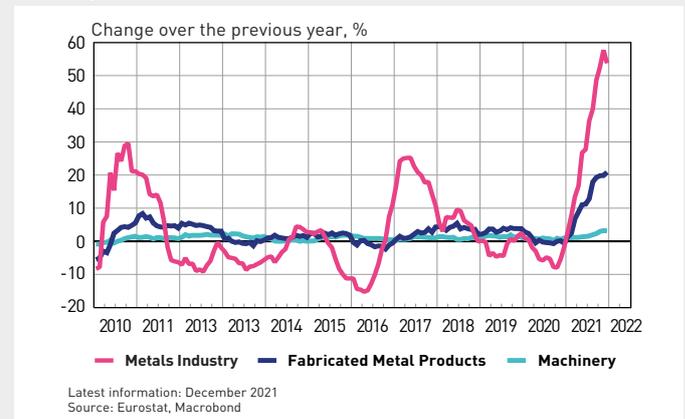
The main message is that if actual development matches current predictions, Finland's cost-competitiveness will not weaken relative to its competitors.

However, with consideration to the fact that wage formation in Finland is less flexible than in many other countries, there is a significant risk related to the development of Finnish cost-competitiveness in 2022. Should the economy grow less than expected for any reason, there is an obvious risk of the development of cost-competitiveness falling short of expectations.

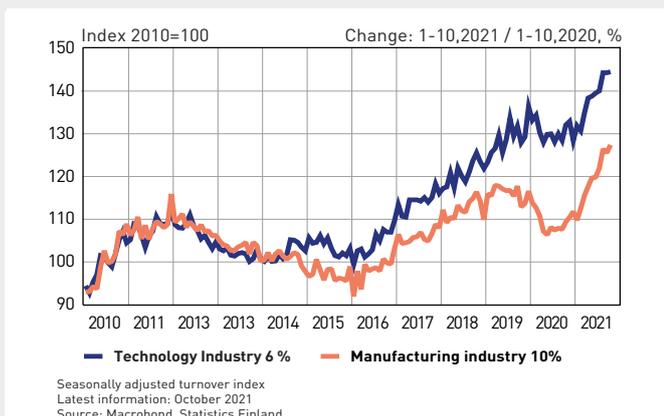
### Supply chain challenges continue to hamper industry broadly



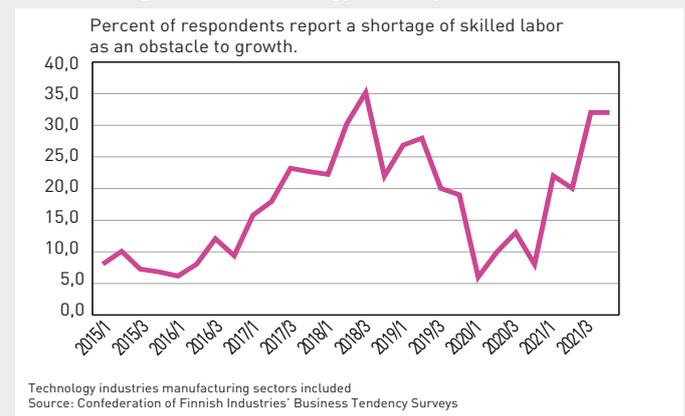
### Development of producer prices in the Finnish technology industry



### Turnover in Manufacturing industry and technology industry



### Availability of skilled workforce again quickly emerged as a barrier to growth in technology industry



# Technology industry investments recovering, but level remains low

Finnish technology industries invested EUR 5.9 billion in Finland in 2021. Intangible investments, such as investments in R&D and software, accounted for 60 per cents of total investments. The remaining 40 per cent was spent on tangible investments, such as machinery, equipment, and facilities.

Investments are vital for gains in productivity and prosperity, as well as the fight against climate change. Without sufficient investments in both R&D and tangible assets, our competitiveness in relation to others will continue to weaken. Unfortunately, the rate of investment in Finland has remained very low for several years, which gives rise to concerns over the rate of growth in the coming years.

This becomes evident if we compare technology industry investments in Finland going back as far as 2005. In real terms, investments are 30 per cent lower than in the peak year of 2008. In monetary terms, this is a drop of more than EUR 2 billion. Based on future outlook, the situation should improve somewhat over the coming years: according to a recent investment survey by the Confederation of Finnish Industries, investments should increase by approximately EUR 500 million in 2022. Even so, the level remains much lower than in 2005.

It is important to note that this drop is in part due to a significant structural change in the electronics industry. The production volumes of the industry have dropped, and as the industry is especially reliant on R&D, it translates into a notable drop in the intangible investments of technology industry as a whole. In other main sectors, investment development has been clearly more positive.

Assessing the development of investments in technology industry through rate of investment, we can see that it has dropped significantly since 2008. Rate of investment looks at investments as a share of value-added. A high rate of investment typically suggests better growth prospects and profitability, at least in the long run.

The decrease in the rate of investment is largely due to the drop in the investments in intangible assets by the electronics

industry. Considering the long-term decline, we can draw the conclusion that while the development in other sectors has been more positive, they have not been able to fully compensate for the drop, which leaves the overall rate of investment at a considerably lower level. This raises concerns about the future growth prospects of the Finnish economy.

## Low rate of investment is a wide-spread problem in Finland

The overall situation in terms of rate of investment in Finland mirrors that of the technology industry: it is clearly lower than in many other small European countries. The rate of investment in Finland is approximately 22 per cent. In Austria, the rate is approximately 8 percentage points higher, and in Sweden approximately 5 percentage points higher. The gap has remained relatively stable for the past decade.

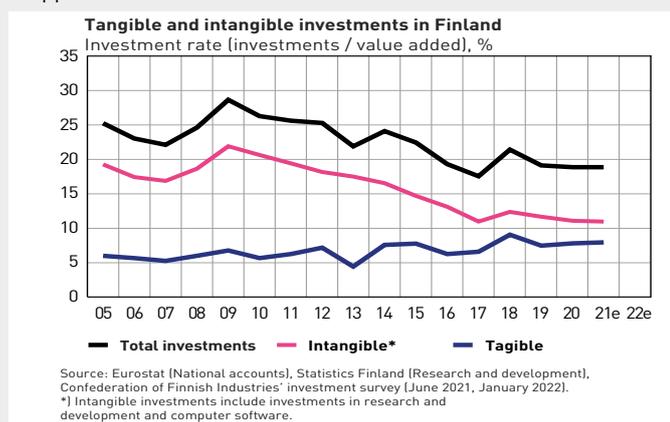
## Finland lacks incentives for investment

There are no doubt several reasons for the weak development of investment activity and low rate of investment in Finland. However, comparisons with other countries' investment incentives give grounds for introducing new measures here. The most urgent one is the significant expansion of the R&D tax incentive. Of the 37 OECD member states, 32 already have R&D tax incentive schemes.

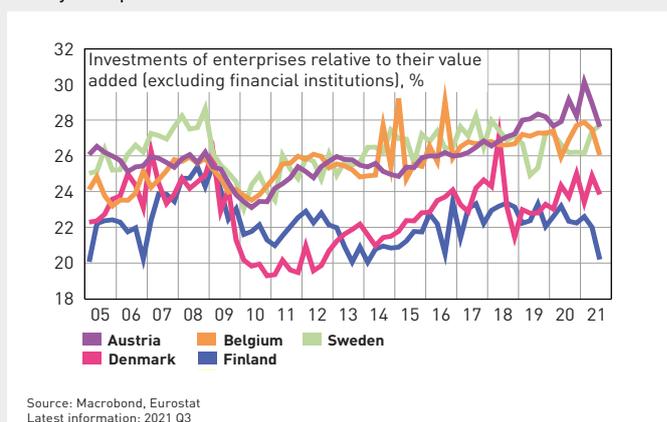
In Finland, the R&D tax incentive should be available to all sectors and be uncomplicated, technology-neutral, predictable, and non-dependent of the business life cycle. The tax incentive should also be significant enough to make a difference.

It is also important to promote companies' tangible investments. New innovations typically provide value-added only once they are in production. A step towards unlimited deductions could be a cost-effective way to encourage tangible investment.

The investment rate in the technology industry in Finland dropped after the financial crisis



The investment rate of enterprises in Finland is lower than in key competitor countries



## Order intake at a very good level

According to preliminary data, the turnover of technology industry companies in Finland grew more than 6 per cent in 2021 from 2020. Turnover was up in all main sectors except electronics and electro-technical industry. The significantly higher level of costs contributed to turnover growth. In 2021, the turnover of technology industry companies in Finland amounted to approximately EUR 87 billion.

Order intake for the last quarter of 2021 was excellent. The monetary value of new orders in the October-December period was 40 per cent higher than in the third quarter of the year and as much as 4 per cent higher year-on-year. After the disappointing level of order intake for the third quarter, this comes as a pleasant surprise and augurs well for the Finnish technology industry in early 2022. The quick rise of producer prices has contributed to the increase in the value of order intake.

Of concern in the third quarter of 2021 was the fact that a significant majority of companies reported that their new order intake dropped from the second quarter. After the last quarter of 2021, a significant majority of technology industry companies reported that the value of new orders was up from the previous quarter.

The number of tender requests received by companies remained at a healthy level during the autumn. The balance figure for October was +17. The positive figure indicates that demand has remained at a good level during the autumn.

At the end of December, the value of order books was 8 per cent higher than at the end of September and 16 per cent higher than in December 2020. The books include all orders yet to be delivered,

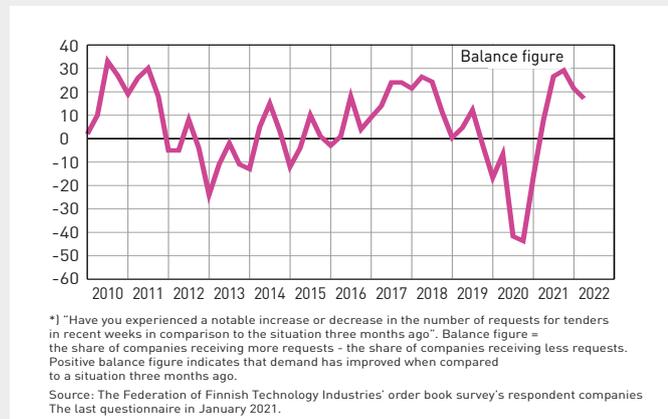
which means that they are also currently inflated by the delivery problems caused by material and component shortages.

Judging from order trends at the end of 2021, the turnover of technology industry companies in early 2022 is expected to be higher than in the corresponding period last year. In the coming months, the significant increase in production costs will boost industry turnover, while at the same time, the delivery problems caused by the material and component shortages will have a negative impact.

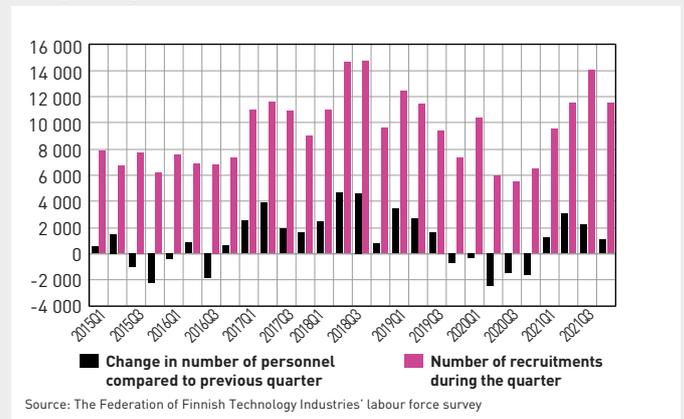
The number of personnel employed by technology industry companies in Finland was less than 1 per cent higher than the 2020 average. On average, the industry employed 317,000 people in 2021. At the end of December, the industry employed approximately 320,000 people. Personnel grew in each quarter of 2021. According to the personnel survey by the Federation of Finnish Technology Industries, the number of employees affected by lay-off procedures at the end of December was only approximately 3,000.

Recruitment of new employees remained at a high level in the October-December period. In total, recruitments came to 11,500. Some companies were increasing their personnel, others were hiring new employees due to retirements and employee turnover.

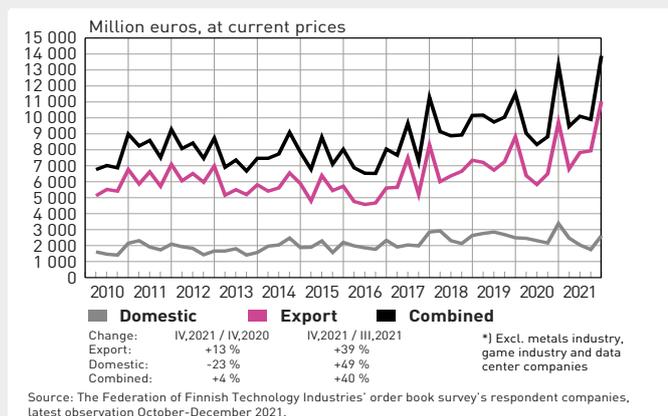
Tender requests\* received by the technology industry companies in Finland



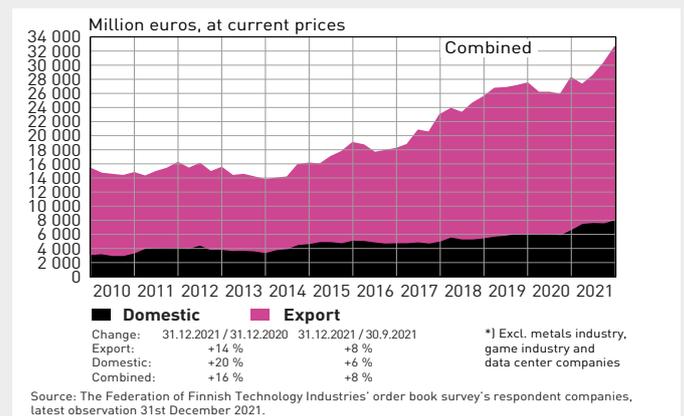
The number of employees in the technology industry in Finland still growing



Value of new orders in the technology industry\* in Finland



Value of order books in the technology industry\* in Finland





## Electronics and Electrotechnical Industry in Finland

### Sharp rise in the value of new orders from the previous quarter

According to preliminary data, the turnover of companies in the electronics and electrotechnical industry (telecommunications equipment, electrical equipment and medical technology) in Finland grew by approximately 1 per cent in 2021 from 2020. In 2021, their turnover in Finland amounted to slightly less than EUR 18 billion.

The value of both new orders and order books increased clearly in the July-September period from the previous quarter.

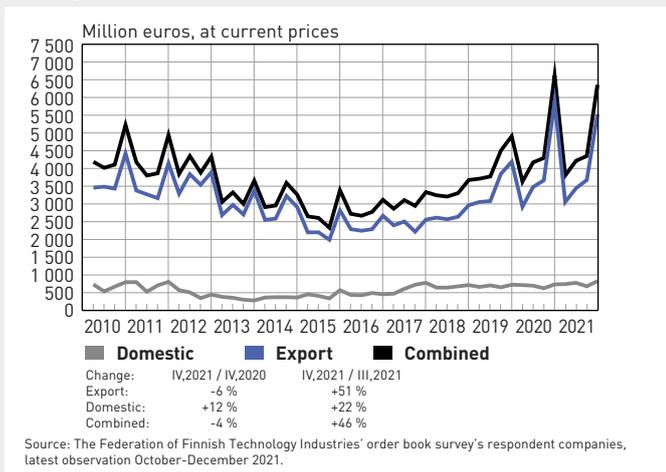
The electronics and electrotechnical companies that took part in the Federation of Finnish Technology Industries' survey of order books reported that the monetary value of new orders between October and December was 46 per cent higher than in the preceding quarter, but 4 per cent lower than in the corresponding period in 2020.

At the end of December, the value of order books was 33 per cent higher than at the end of September and 4 per cent higher than in December 2020.

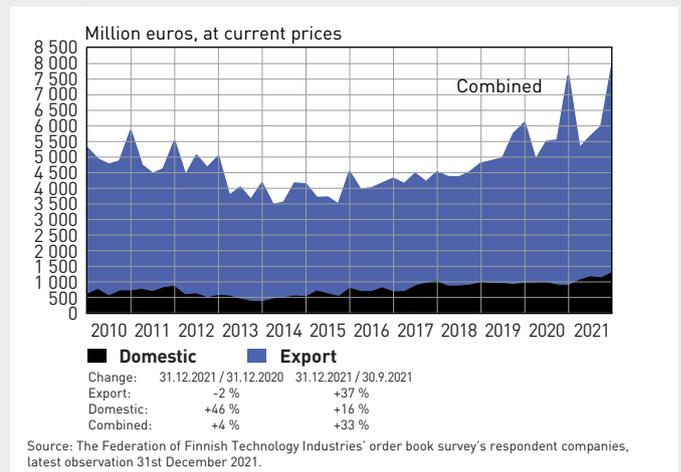
Despite the healthy demand and order books, the shortage of semiconductors and components is a serious burden for companies and turnover development may fall short of expectations.

The number of personnel employed by electronics and electrotechnical companies in Finland was more than 2 per cent higher than the 2020 average. The industry employed 39,100 people, approximately 900 more than in 2020.

Value of new orders in the electronics and electrotechnical industry in Finland



Value of order books in the electronics and electrotechnical industry in Finland





## Mechanical Engineering in Finland

### Order intake at an excellent level

According to preliminary data, the turnover of mechanical engineering companies (machinery, metal products and vehicles) in Finland increased by slightly less than 4 per cent in 2021 from 2020. In 2021, their turnover in Finland amounted to approximately EUR 34 billion.

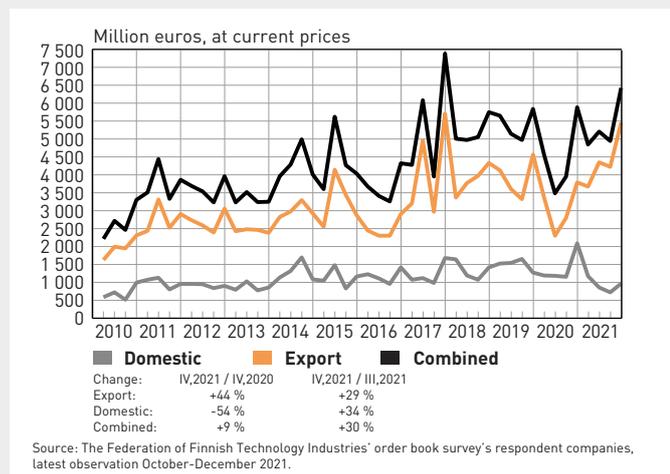
The value of new orders in mechanical engineering in the October-December period increased as much as 30 per cent from the previous quarter. Year-on-year, the value of new orders increased by 9 per cent. The quick rise of producer prices has contributed to the increase in the value of order intake.

At the end of December, the value of order books was 1 per cent lower than at the end of September, but 20 per cent higher than in December 2020. It remains necessary to consider that the shipyards' share of the total value of order books is exceptionally large.

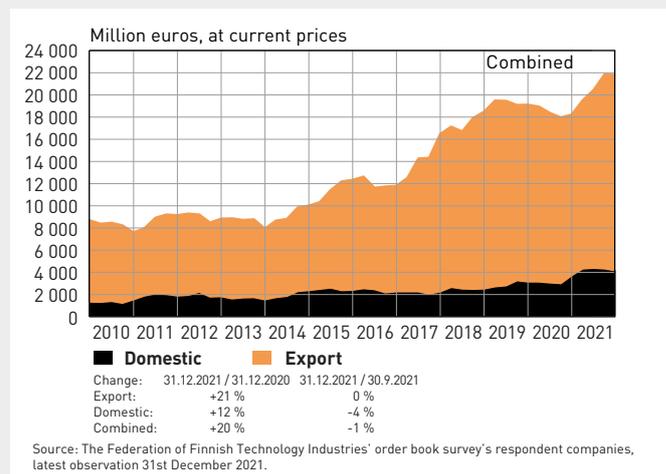
Judging from order trends towards the end of 2021, the turnover of mechanical engineering companies in early 2022 is expected to be higher than in the corresponding period last year. The large increase in production costs will boost industry turnover, while at the same time, the delivery problems caused by the shortages of materials and components will have a negative impact.

The number of personnel employed by mechanical engineering companies in Finland was up approximately 1 per cent from the 2020 average. The industry employed approximately 134,100 people, up 1,200 from 2020.

Value of new orders in the mechanical engineering in Finland



Value of order books in the mechanical engineering in Finland





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## Metals Industry in Finland

### Strong turnover growth continues

According to preliminary data, the turnover of metals industry companies (steel products, non-ferrous metals, castings and metallic minerals) in Finland increased by approximately 31 per cent in 2021 from 2020. In 2021, their turnover in Finland amounted to as much as EUR 13 billion. The sharp rise in producer prices has contributed significantly to the turnover growth in the metals industry.

The total production of steel products, non-ferrous metals, castings and metallic minerals in Finland in the January-November period increased by approximately 9 per cent year-on-year.

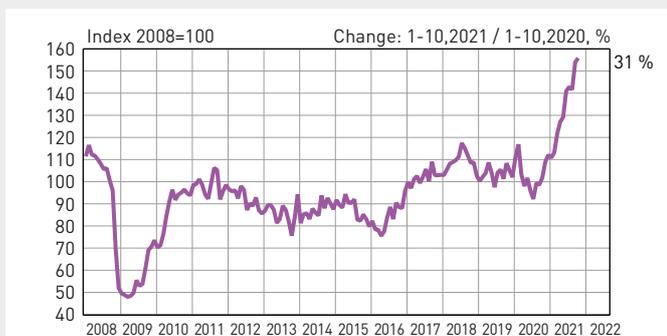
The number of personnel employed by metals industry companies in Finland fell by approximately 1 per cent in 2021 from the 2020 average. The industry employed approximately 16,000 people, down 100 from 2020.

Global steel production increased by 3.6 per cent from 2020. Production increased by 0.6 per cent in Asia, by 15.4 per cent in the EU and by 16.6 per cent in North America. Overall, the growth seems quite modest, considering the high global demand for steel throughout 2021.

In fact, global steel production contracted between the spring and November 2021. Only in December did production increase significantly from the previous month and even then, only because of a significant jump in steel production in China.

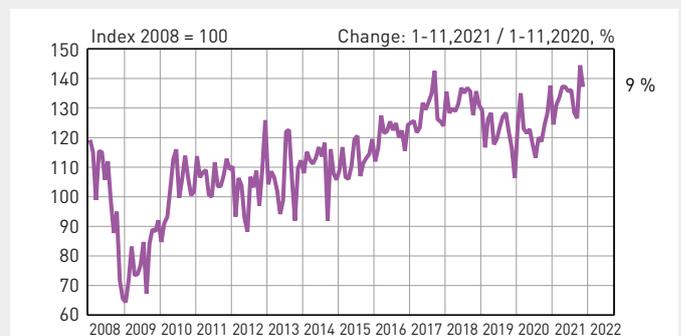
China, India, Japan, the United States and Russia were the largest producers in 2021. China accounted for approximately 53 per cent of global steel production.

Turnover of the metals industry in Finland



Seasonal adjusted turnover index  
 Shares of turnover 2020: iron and steel products, non-ferrous metals and castings 89 %, mining of metal ores 11 %  
 Latest information: October 2021  
 Source: Statistics Finland

Production volume of the metals industry in Finland



Seasonal adjusted volume index  
 Shares of turnover 2020: iron and steel products, non-ferrous metals and castings 89 %, mining of metal ores 11 %  
 Latest information: November 2021  
 Source: Statistics Finland



## Consulting Engineering in Finland

### Steady growth in the value of order books continues

According to preliminary data, the turnover of consulting engineering companies (industrial, social and construction expert services) in Finland increased by approximately 3 per cent in 2021 from 2020. In 2021, their turnover in Finland amounted to almost EUR 7 billion.

The value of new orders in consulting engineering increased in the October-December period from the previous quarter. Order books also strengthened further.

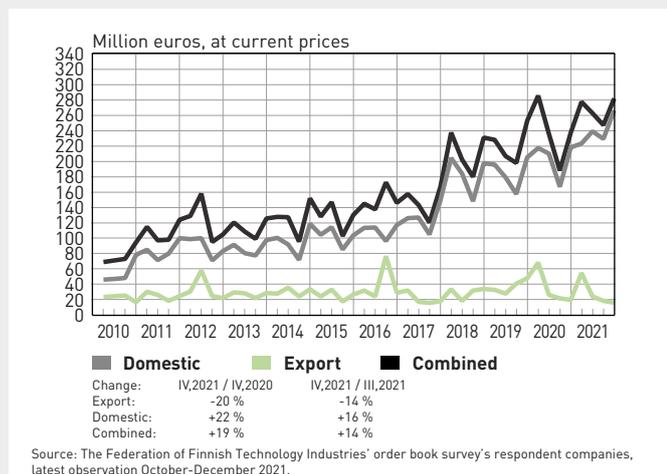
The consulting engineering companies that took part in the Federation of Finnish Technology Industries' survey of order books reported that the monetary value of new orders between October and December was 14 per cent higher than in the preceding quarter and 19 per cent higher than in the corresponding period in 2020.

At the end of December, the value of order books was 6 per cent higher than at the end of September and 25 per cent higher than in December 2020.

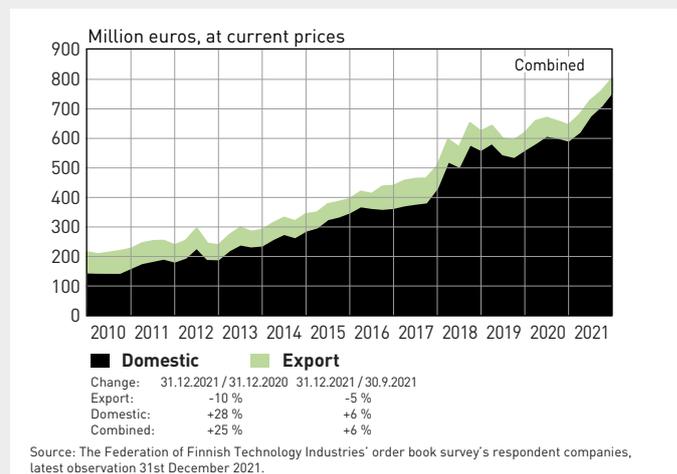
Judging from order trends towards the end of 2021, the turnover of consulting engineering companies in early 2022 is expected to be higher than in the corresponding period last year.

The number of personnel employed by consulting engineering companies in Finland was 1.5 per cent higher than the 2020 average. The industry employed 54,300 people, approximately 800 more than in 2020.

Value of new orders in the consulting engineering in Finland



Value of order books in the consulting engineering in Finland





## Information Technology in Finland

### Record-high order intake

According to preliminary data, the turnover of information technology companies (IT services and software) in Finland grew by 7 per cent in 2021 from 2020. In 2021, their turnover in Finland amounted to approximately EUR 16/5 billion.

Order intake for the October-December period was significantly higher than in the previous quarter. The value of order books also increased considerably. Typically for the sector, order volumes can fluctuate strongly from one quarter to another.

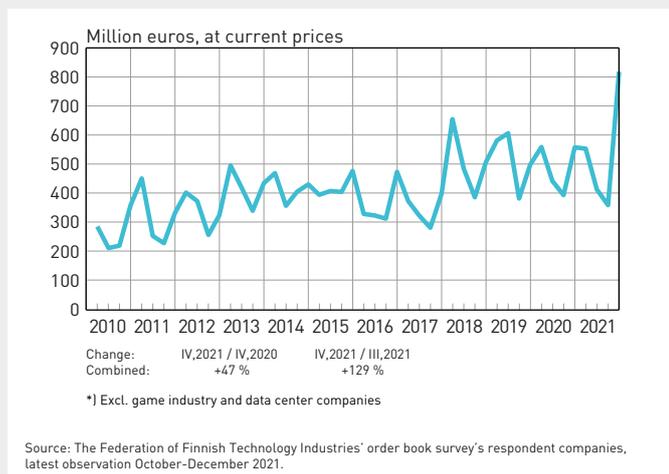
The information technology companies that took part in the Federation of Finnish Technology Industries' survey of order books reported that the monetary value of new orders between October and December was as much as 129 per cent higher than in the preceding quarter and 47 per cent higher than in the corresponding period in 2020. Game industry and data centre companies are not included in the survey.

At the end of December, the value of order books was 26 per cent higher than at the end of September and 22 per cent higher than in December 2020.

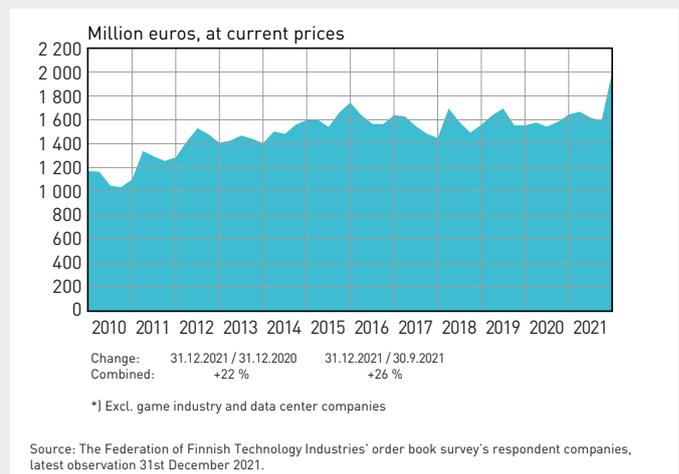
Judging from order trends towards the end of 2021, the turnover of information technology companies in early 2022 is expected to be higher than in the corresponding period last year.

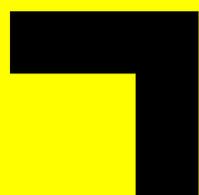
The number of personnel employed by information technology companies in Finland was almost 1 per cent lower than the 2020 average. The industry employed some 73,800 people, approximately 600 less than in 2020.

Value of new orders in the information technology\* in Finland



Value of Order Books in the Information Technology\* in Finland





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