

Economic Outlook

Technology Industries of Finland

2 | 2020

Global And Finnish Economic Outlook

Global and Finnish economy shaken by the coronavirus crisis

p. 3

Technology Industries in Finland

Finnish technology industries will be hard hit by the coronavirus crisis

p. 5

Contents

Global and Finnish Economic Outlook	3
Technology Industries in Finland	4
Electronics and Electrotechnical Industry in Finland	6
Mechanical Engineering in Finland	7
Metals Industry in Finland	8
Consulting Engineering in Finland	9
Information Technology in Finland	10
Personnel Development in Finland and Abroad	11

ECONOMIC OUTLOOK 2 | 2020

Information based on the situation on 28 April 2020

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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.

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Global and Finnish economy shaken by the coronavirus crisis

While there was a lot of uncertainty over the global economic outlook already in early 2020, it pales in comparison to the coronavirus pandemic and the deep financial crisis ravaging the world now.

As a result, all predictions about global economic growth have been scrapped. Visibility is particularly low at the moment. Economic growth depends substantially on how soon the restrictions brought on by the coronavirus can be lifted and how quickly a medicine or vaccine becomes available against it.

The US economy has been significantly affected by the coronavirus crisis and the rise in unemployment has been unprecedented. The US economy has a major impact on the development of the world economy.

In China, the crisis may have passed its worst. Restrictions have been lifted and factories are resuming operations. Recovery in China has been quite quick, but perhaps not quite as quick as had been hoped. Despite the significant differences between societies, the rate of recovery in China should give some indication of the pace of recovery in Europe and the United States once the most acute phase of the crisis has passed.

Possible shape of the recovery curve is illustrated with letters, such as the V-shaped curve for fast recovery, U-shaped curve for a slightly slower rate of recovery and L-shaped curve for a more prolonged recession. Essentially, uncertainty is huge and almost none of the scenarios can be ruled out at this stage.

The International Monetary Fund IMF is expecting the world economy to contract by as much as 3 per cent in 2020. The situation is serious: this is the worst crisis since the Great Depression of the 1930s. The IMF expects the eurozone economy to shrink by as much as 7.5 per cent. Despite the sharp drop, the IMF expects the global economy to see a strong recovery already in 2021.

Increasingly worrying is also the growing uncertainty on the financial markets. Many banks in Southern Europe as well as in Germany and France are not in a good financial position.

Tensions are also increasing in the eurozone over the possible joint crisis debt and bonds. Should distrust spread widely on the financial markets, it would have a severe negative impact on growth over the coming years.

Purchase Managers' Indices for the eurozone have plummeted to historically low levels. Indices in the service sector were the first to drop in March, while the situation in manufacturing held up for the time being. In April, service sector continued to fall, and manufacturing industry saw its figures plummet. Purchase Managers' Indices around the world tell a similar story: the economy will face a deep crisis.

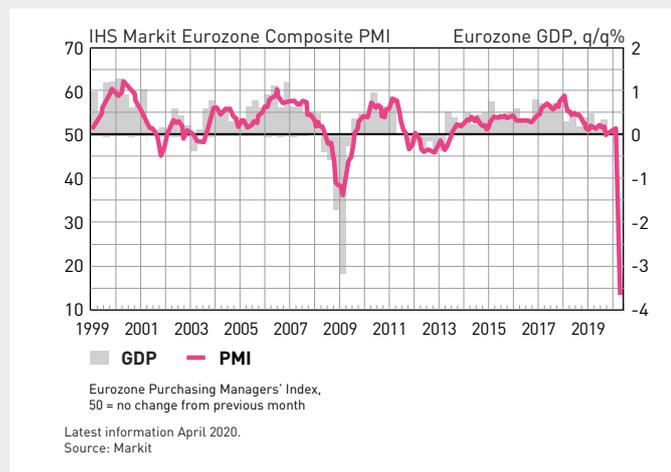
Overall, the global economy is facing unprecedented turmoil. The only thing we can be certain of is that the damage to both human health and health of economy will be enormous. As to how long the situation persists, no one knows.

Finland's outlook worsened abruptly

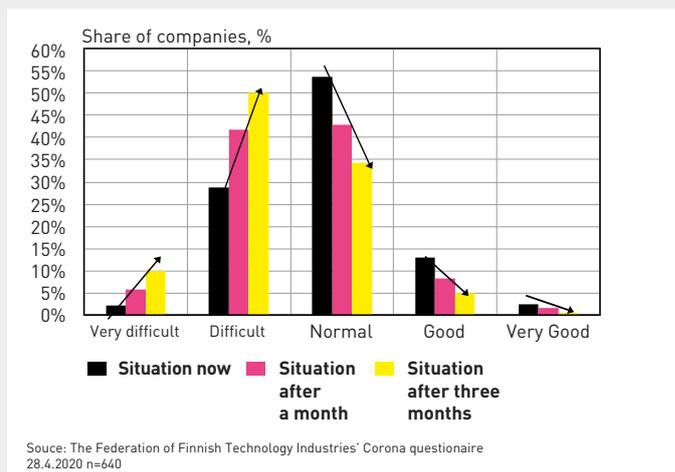
As a result of the coronavirus crisis, Finland's economic growth outlook has also been revised down significantly. Before the crisis, the economy was expected to grow by approximately 1 per cent in 2020.

Because of significant uncertainty, most forecasters have published more than one possible scenario for future economic development. According to Bank of Finland's worst-case forecast, Finland's GDP will contract by 13 per cent in 2020. ETLA Economic Research estimates the economy to shrink by approximately 10 per cent. Ministry of Finance's worst-case forecast estimates that the economy will contract by 12 per cent. There is great variation between the figures in different scenarios, but all forecasters expect to see a substantial contraction in the Finnish economy in 2020.

Eurozone Purchasing Managers' Index Dropped to a Record low level



According to Companies the situation will continue to deteriorate over the next three months



Finnish technology industries will be hard hit by the coronavirus crisis

What makes the coronavirus crisis different from previous financial crises is that service sectors were the first to feel the effects of the crisis. They typically suffer less than other sectors during a global financial crisis.

However, Finnish technology industries will also be hard hit by the coronavirus crisis. Depending on the company, there will be delay of a few months before they feel the full impact of the crisis thanks to the orders received in late 2019 and early 2020. The longer the crisis lasts, the stronger the weaker demand will hit the industry.

The coronavirus crisis poses many challenges to technology industry companies. Firstly, it makes it very difficult to procure supplies or raw materials. Secondly, companies cannot deliver finished products to customers or install them at customer premises. Many already placed orders have also been postponed. Reassuringly, at least for the time being, it seems that orders in companies' order books have not been cancelled on a wide scale.

Companies expect the situation to become worse as the year progresses. As many as 65 per cent of member companies in the industry sector expect their situation to be bad or very bad three months from now. The corresponding figure for the member companies in the service sector is 45 per cent.

Upwards of 70 per cent of member companies in the industry sector expect their turnover for the third quarter of 2020 to be weaker than twelve months earlier. As many as 25 per cent of companies expect their turnover to drop more than 20 per cent

year-on-year. Figures for the service sector are some 10 percentage points smaller than for the industry sector.

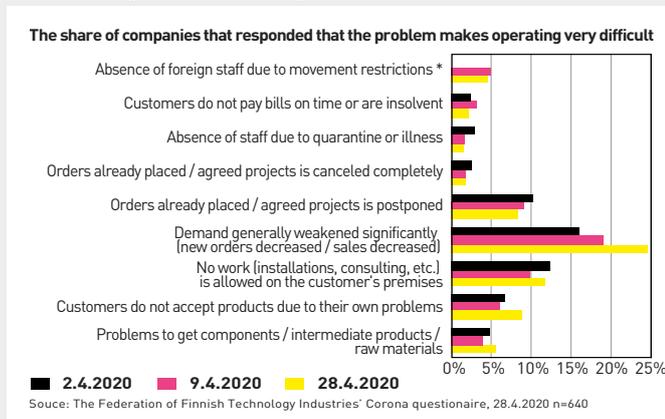
Considering the low visibility and huge uncertainty, these figures are obviously given only as a guide. All areas of technology industry will be affected negatively by the coronavirus crisis. However, according to the survey, it seems that member companies in the industry sector will be hit harder than those in the service sector (consulting engineering and information technology).

The weakened outlook is highlighted in the April survey on the number of requests for tender. The balance figure that measures the level of tender requests dropped to its lowest level (-42) since the weakest quarter of the financial crisis. As many as 25 per cent of companies expect weak demand to cause significant difficulties to their operations.

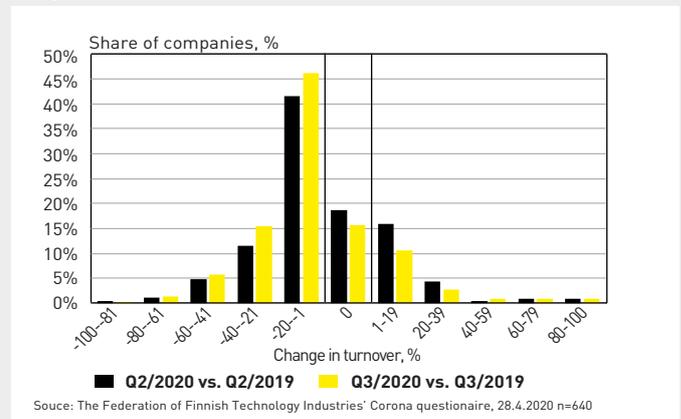
According to the personnel survey by the Federation of Finnish Technology Industries, the number of personnel affected by lay-off procedures at the end of March totalled some 25,000. The companies currently estimate that almost one third of technology industry personnel will be affected by lay-offs at some stage. On a positive note, only a relatively small group of companies expects to have to terminate employment contracts.

Overall, the survey results send a serious message that while the technology industry turnover is falling in the first half of the year, it may not bottom out until towards the end of the year.

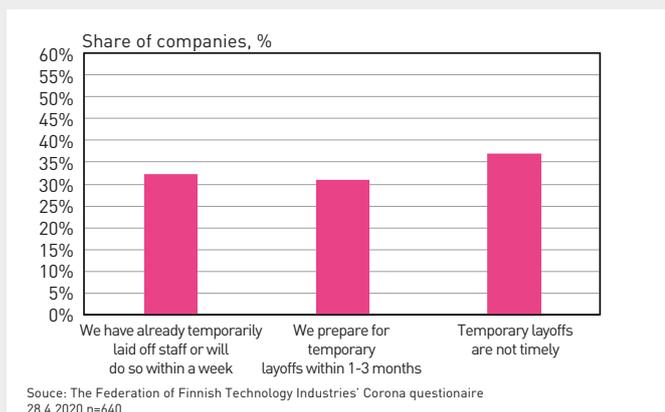
Corona crisis causes multiple difficulties to the companies, deteriorating demand is a big concern



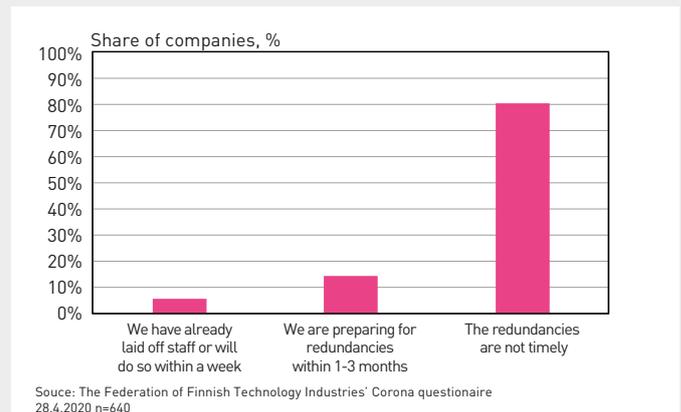
The biggest drop in turnover is expected not until the end of the year



A large number of temporary layoffs are still ahead



Less than a fifth of companies estimate that they have to lay off their staff



Results of the order book and personnel survey Q1/2020

NB! The order book and personnel information in this section is for the first quarter of 2020. It should be noted that, at that time, the coronavirus crisis had not yet had an essential impact on the technology industry in Finland.

The turnover of technology industry companies in Finland grew by 7 per cent in 2019 from 2018. Turnover was up in all main sectors in 2019 except metals industry. In 2019, their turnover in Finland amounted to EUR 82 billion.

The effects of global economic uncertainty and weakening demand remained apparent in Finnish technology industries' order books for the first quarter. The companies that took part in the Federation of Finnish Technology Industries' survey of order books reported that the monetary value of new orders between January and March was 24 per cent lower than in the preceding quarter and 12 per cent lower than in the corresponding period of 2019.

The significant drop from the preceding quarter is mostly attributable to very large individual orders placed at the end of 2019. However, comparison with the situation twelve months earlier shows that the volume of orders in the Finnish technology was already dropping.

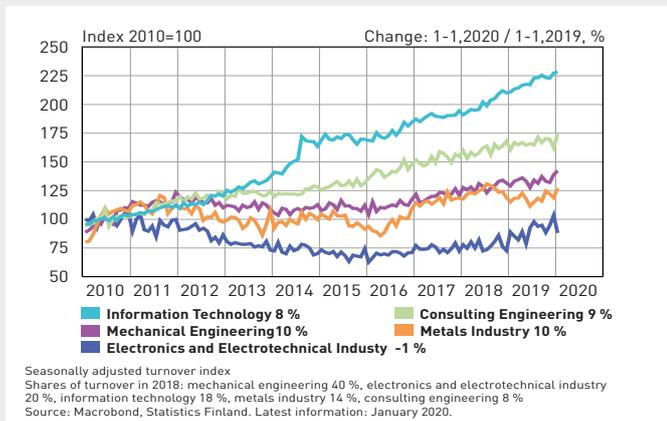
At the end of March, the value of order books was 5 per cent lower than at the end of December and 2 per cent lower than in

March 2019. It is important to note that shipyards' share of the total value of books remains exceptionally large.

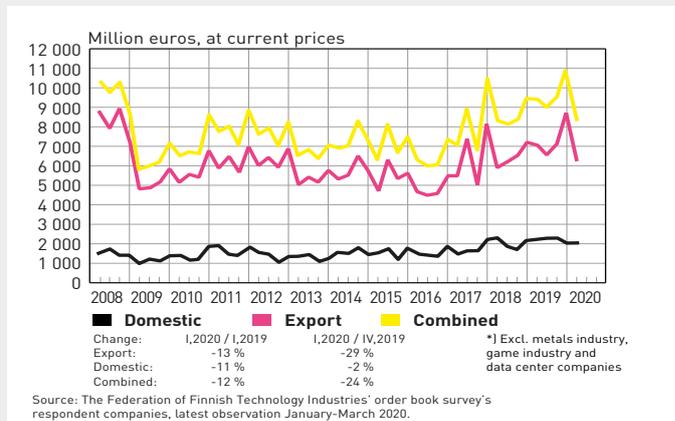
Judging from order trends at the end of 2019 and early 2020, the turnover of technology industry companies in early 2020 is expected to be higher than in the corresponding period last year. However, turnover development will weaken significantly from the second quarter onwards because of the coronavirus crisis.

The number of personnel employed by technology industry companies in Finland in the January-March period remained at a similar level to the 2019 average. At the end of March, the industry employed slightly less than 318,000 people. The coronavirus pandemic had not yet had much impact on the personnel figures at the end of March.

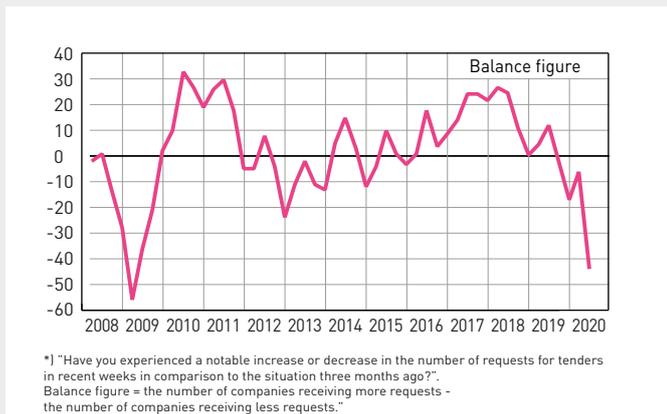
Turnover of the Technology Industry in Finland



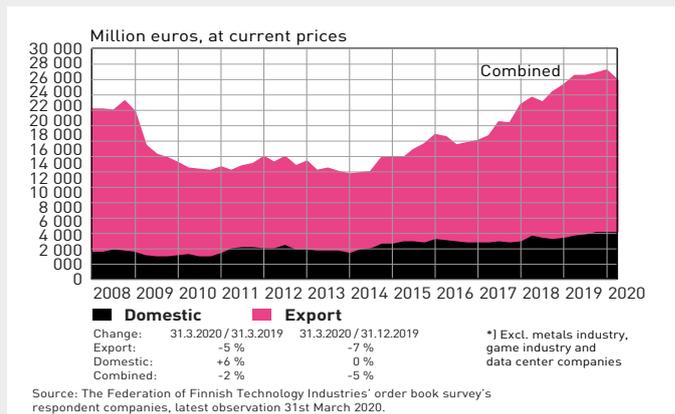
Value of New Orders in the Technology Industry* in Finland



Tender Requests* Received by the Technology Industry Companies in Finland



Value of Order Books in the Technology Industry* in Finland





Electronics and Electrotechnical Industry in Finland

Significant drop in the value of new orders

The turnover of companies in the electronics and electrotechnical industry (telecommunications equipment, electrical equipment and medical technology) in Finland grew by as much as 17 per cent in 2019 from 2018. In 2019, their turnover in Finland amounted to EUR 17.1 billion.

The value of both new orders and order books fell in the January-March period. Orders took a sharp downward turn after a continuous growth of some three years.

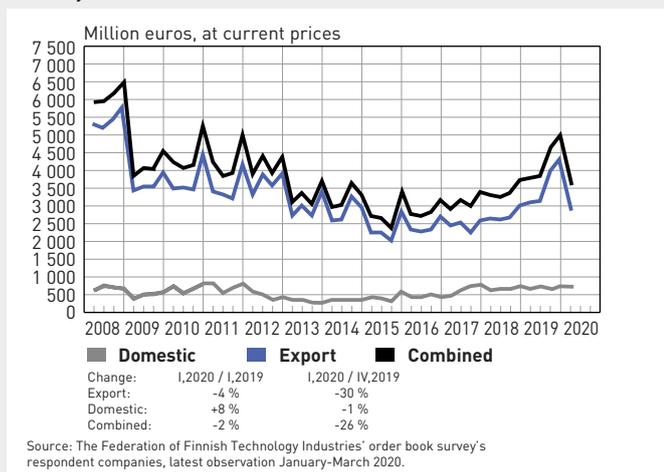
The electronics and electrotechnical companies that took part in the Federation of Finnish Technology Industries' survey of order books reported that the monetary value of new orders between January and March was as much as 26 per cent lower than in the preceding quarter and 2 per cent lower than in the corresponding period in 2019.

At the end of March, the value of order books was 20 per cent lower than at the end of December and at the same level as in March 2019.

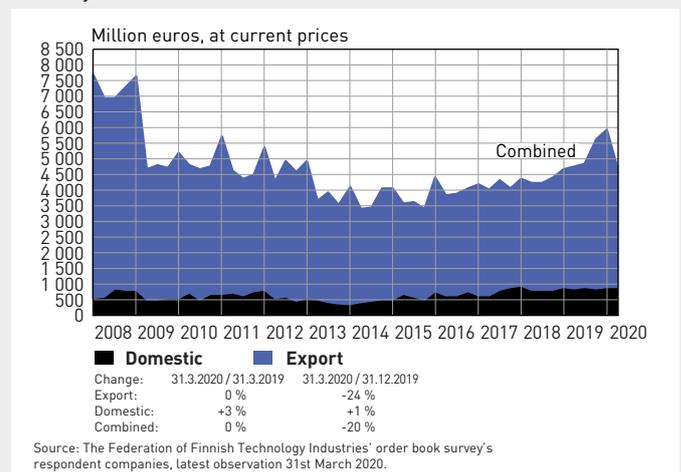
Thanks to the strong order volume of late 2019, the turnover of electronics and electrotechnical industry companies is expected to be slightly higher in early 2020 than in the corresponding period in 2019, but will weaken significantly from the second quarter onwards due to the coronavirus crisis.

The number of personnel employed by electronics and electrotechnical companies in Finland remained relatively unchanged from the 2019 average between January and March 2020. At the end of March, the industry employed some 38,500 people.

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

New orders for early 2020 at moderate level

The turnover of mechanical engineering companies (machinery, metal products and vehicles) in Finland increased by approximately 4 per cent in 2019 from 2018. In 2019, their turnover in Finland amounted to EUR 32.7 billion.

The value of new orders in mechanical engineering fell 26 per cent from the previous quarter in the January-March period. Year-on-year, the value of new orders decreased by 22 per cent. The sharp drop from the last quarter of 2019 is largely attributable to a very large ship order in the comparison period.

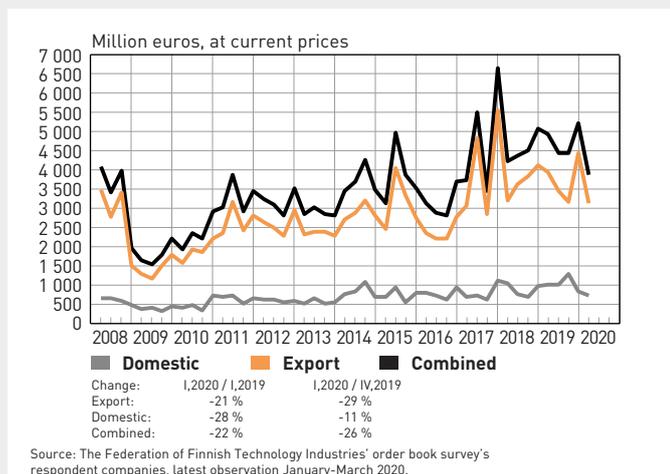
At the end of March, the value of order books remained at the same level as at the end of December and 3 per cent lower than in March 2019. Shipyards' share of the total value of order books is exceptionally large. Slightly less than 80 per cent of the strength-

ening of the order books since early 2014 is attributable to ship orders.

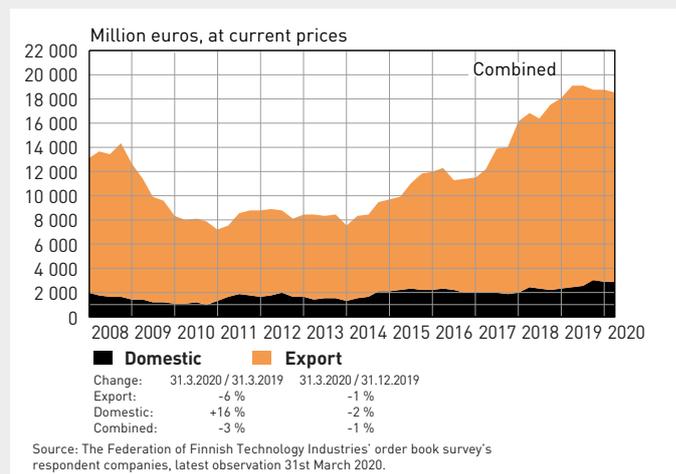
Judging from order trends in recent months, the turnover of mechanical engineering companies in early 2020 is expected to be at the same level as the corresponding period last year, but will weaken significantly from the second quarter onwards due to the coronavirus crisis.

The number of personnel employed by mechanical engineering companies in Finland decreased by less than 1 per cent between January and March from the 2019 average. At the end of March, the industry employed 133,600 people, approximately 1,000 less than the 2019 average.

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

Turnover and production volume dropped in 2019

The turnover of metals industry companies (steel products, non-ferrous metals, castings and metallic minerals) in Finland decreased by approximately 5 per cent in 2019 from 2018. In 2019, their turnover in Finland amounted to EUR 10.5 billion.

The total production of steel products, non-ferrous metals, castings and metallic minerals in Finland in 2019 decreased by some 7 per cent year-on-year.

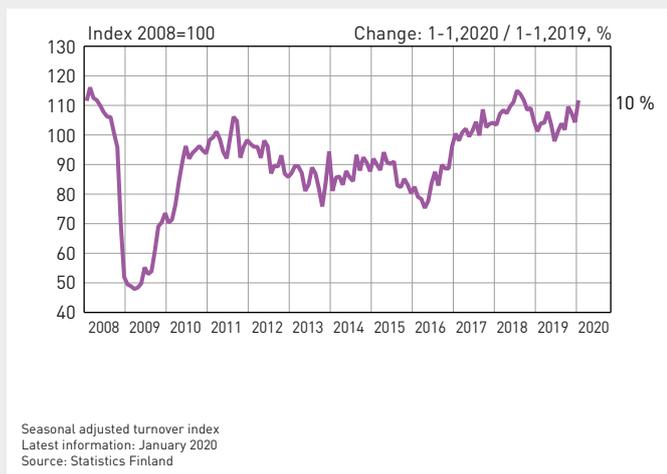
The number of personnel employed by metals industry companies in Finland decreased by approximately 0.5 per cent between January and March from the 2019 average. The industry employed 16,100 people, approximately 100 less than the 2019 average.

In comparison to the corresponding period in 2019, global steel production decreased by 1.4 per cent between January and March. Production decreased by 0.3 per cent in Asia and by 1 per

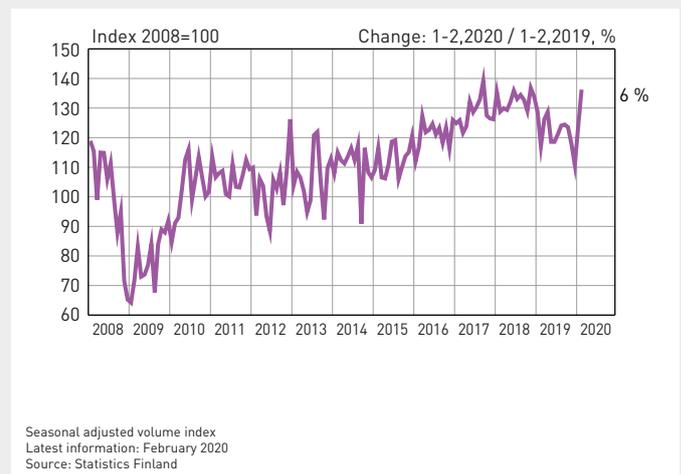
cent in the United States. Production in Europe decreased by as much as 10 per cent. The coronavirus crisis has contributed to the fall of global steel production in early 2020. The situation was already challenging because of the effects of the trade war and economic sanctions. In early 2020, production fell by 1 per cent in Russia while increasing by almost 10 per cent in Turkey. Production decreased by 5 per cent in Canada and more than 2 per cent in Japan.

China, India, Japan, the United States, Russia and South Korea were the largest producers in March. China accounted for 54 per cent of global steel production.

Turnover of the Metals Industry in Finland



Production Volume of the Metals Industry in Finland





Consulting Engineering in Finland

Good growth in new orders

The turnover of consulting engineering companies (industrial, social and construction expert services) in Finland grew by 4 per cent in 2019 from 2018. In 2019, their turnover in Finland amounted to EUR 6.7 billion.

The value of both new orders and order books in consulting engineering increased in the January-March period from the previous quarter.

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 January and March was 11 per cent higher than in the preceding quarter and 21 per cent higher than in the corresponding period in 2019.

At the end of March, the value of order books was 7 per cent

higher than at the end of December and 3 per cent higher than in March 2019.

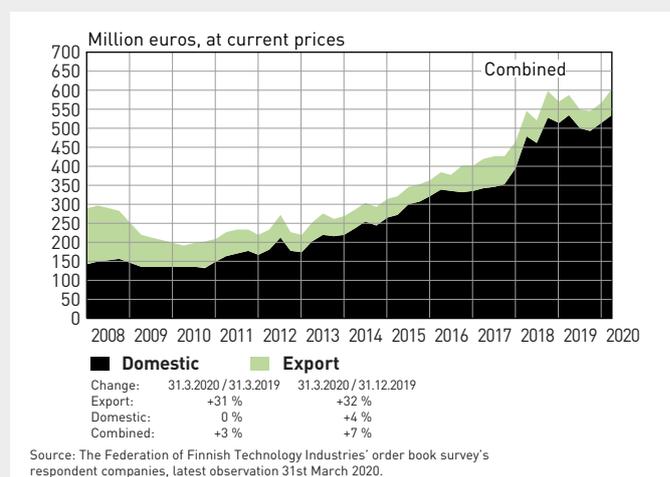
Judging from order trends in recent months, the turnover of consulting engineering companies in early 2020 is expected to be slightly higher than in the corresponding period last year, but will weaken significantly from the second quarter onwards due to the coronavirus crisis.

The number of personnel employed by consulting engineering companies in Finland grew by slightly more than 1 per cent between January and March from the 2019 average. The industry employed 55,300 people at the end of March, up approximately 700 from 2019.

Value of New Orders in the Consulting Engineering in Finland



Value of Order Books in the Consulting Engineering in Finland





Information Technology in Finland

New orders still on the rise

The turnover of information technology companies (IT services and software) in Finland grew by 9 per cent in 2019 from 2018. In 2019, their turnover in Finland amounted to EUR 14.7 billion.

New orders increased significantly from the previous quarter in the January-March period and order books remained at a good level. Typically for the sector, order volumes fluctuate strongly from one quarter to another.

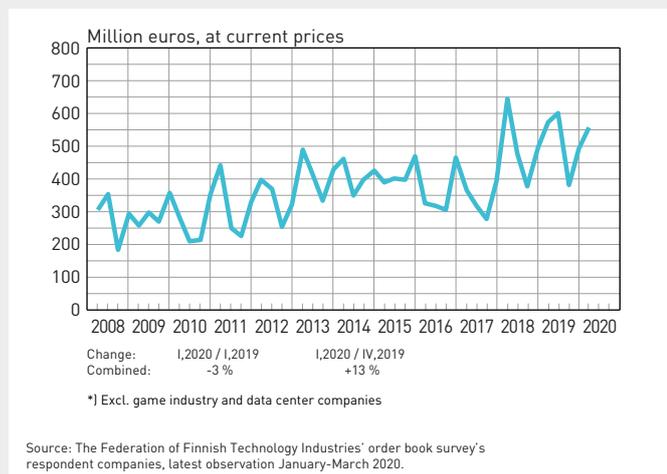
The information technology companies that took part in the Federation of Finnish Technology Industries' survey of order books reported that the monetary value of new orders between January and March was 13 per cent higher than in the preceding quarter, but 3 per cent lower than in the corresponding period in 2019. Game industry and data centre companies are not included in the survey.

At the end of March, the value of order books was more or less the same as at the end of September and slightly lower than at the end of March 2019.

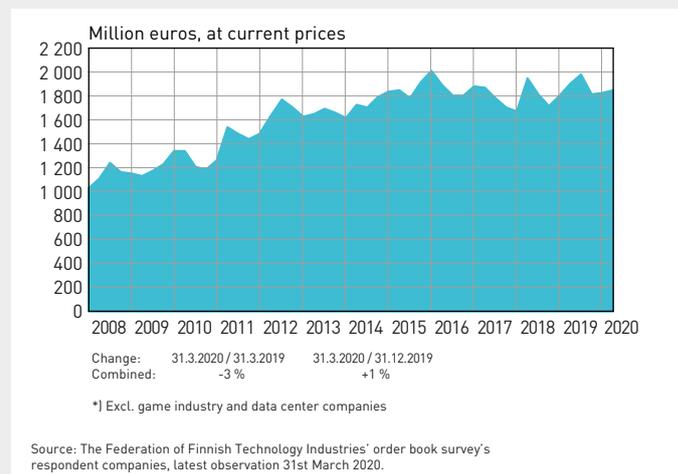
Judging from order trends in recent months, the turnover of information technology companies in early 2020 is expected to be higher than in the corresponding period last year, but will weaken significantly from the second quarter onwards due to the coronavirus crisis.

The number of personnel employed by information technology companies in Finland grew by slightly more than 1 per cent between January and March from the 2019 average. The industry employed 74,000 people at the end of March, up approximately 1,000 from 2019.

Value of New Orders in the Information Technology* in Finland



Value of Order Books in the Information Technology* in Finland





Staff numbers grow in Finland and abroad in 2019

Finnish technology industry companies employed a total of 615,000 people in 2019. Domestic operations accounted for 317,000 jobs, while 298,000 people worked abroad. Staff numbers in Finland increased by more than 3 per cent, or by less than 10,000 employees during 2019. Staff numbers in international subsidiaries increased by 4 per cent, or by approximately 10,000 in total.

According to the Federation of Finnish Technology Industries' quarterly survey, personnel numbers remained relatively unchanged between the end of 2019 and the first quarter of 2020. Compared to the end of last year, staff numbers increased in all main sectors except metals industry in the January-March period. At the end of March, technology industry companies employed approximately 318,000 people in Finland.

In 2019, staff numbers in international subsidiaries increased in the mechanical engineering (+6%), electronics and electro-technical industry (+4%) and information technology (+9%). Foreign staff numbers fell in metals industry (-4%) and consulting engineering (-59%). In regional comparison, technology industry personnel remained steady in advanced markets (-1%) and grew in emerging markets (+7%). In Western Europe, personnel numbers decreased by 1 per cent while in North America, they remained unchanged. Significant business restructuring affected personnel numbers abroad again in 2019.

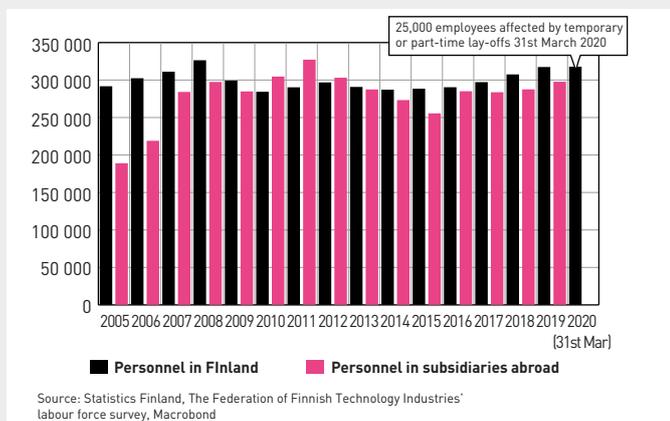
As much as 61 per cent of foreign staff employed by Finnish technology industry companies is located in low-cost economies in emerging regions: Asia, Central and Eastern Europe, Latin America, Africa and the Middle East. The largest concentrations of foreign subsidiaries in 2019, measured by number of staff, are as follows: China (45,800), India (29,700), United States (28,400), Germany (19,700), Poland (18,500), Mexico (14,400), Sweden (14,200), France (11,300), United Kingdom (8,200) and Russia (7,100).

In March–April 2020, the Federation of Finnish Technology Industries conducted a survey of the number of domestic and international staff employed by its member companies/foreign subsidiaries at the end of 2019, by country.

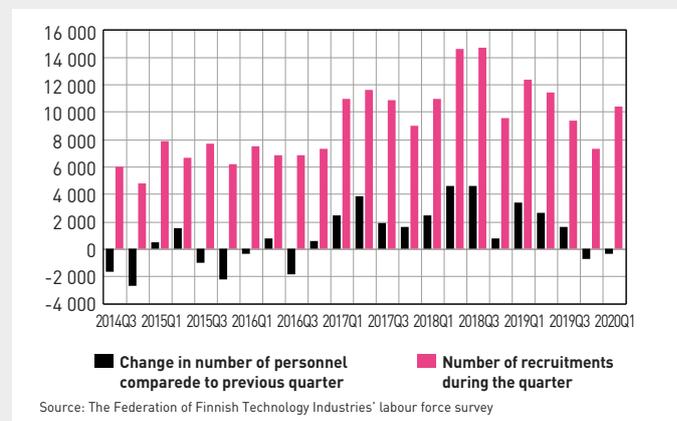
Foreign subsidiaries are companies in which the Finland-based parent company has a share of at least 50 per cent. The number of international staff can change by way of company acquisition/divestment, expansion/reduction of operations, or increase/decrease in the percentage of ownership.

The number of staff in Finland by the end of March 2020 was investigated as part of the quarterly survey. Information on suspensions, temporary employment and recruitment was gathered separately.

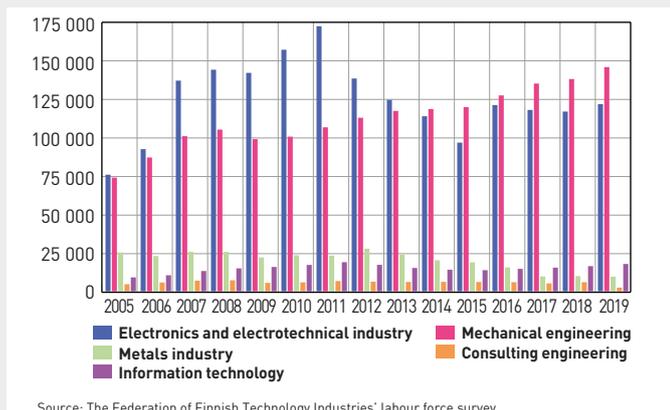
Technology Industry Personnel



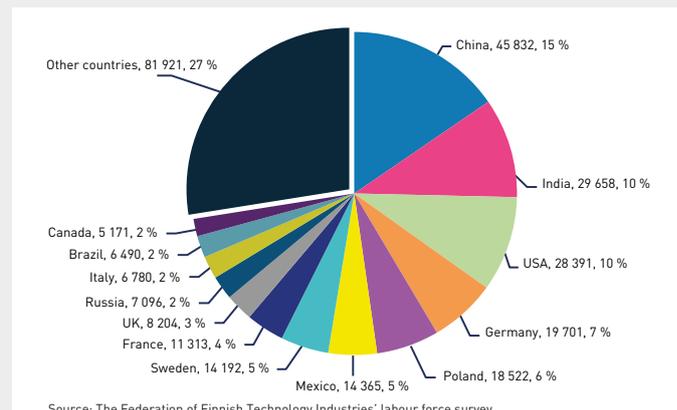
Number of Personnel in Finnish Technology Industry Continued to Decrease in Q1 2020



Technology Industry Personnel in Subsidiaries Abroad by Industry



Technology Industry Personnel in Subsidiaries Abroad by Country





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