Economic Outlook

Technology Industries of Finland

2 | 2023

Global And Finnish Economic Outlook
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Information based on the situation on 4 May 2023
Further information: Petteri Rautaporras, Director, Chief Economist, phone +358 50 304 2220
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.

Technology Industries of Finland | Eteläranta 10, P.O.Box 10, FI-00131 Helsinki | tel. +358 9 19231 | www.techind.fi

Cover photo: Liisa Takala

The winter went better than anticipated – zero growth expected

Economic development during the 2022/2023 winter proved better than expected, but on the other hand, largely as anticipated. Growth has stalled as expected, and we have not yet seen a significant downturn. Risks to the economy remain high, and it is best to be prepared for negative geopolitical surprises.

According to the outlook published by the International Monetary Fund IMF at the end of April, the global economy is projected to grow 2.8 per cent in 2023. This is 0.6 percentage points lower than the growth rate in 2022, which according to preliminary data came to 3.4 per cent. In 2024, growth is expected to be 3.0 per cent. Advanced economies are expected to see an especially pronounced growth slowdown with growth falling to 1.3 percent in 2023.

Global headline inflation in the baseline is set to fall from 8.7 percent in 2022 to 7.0 percent in 2023 on the back of lower commodity prices. Underlying (core) inflation is likely to decline more slowly as a result of brisk wage growth. According to IMF, inflation's return to the 2 per cent target range is unlikely before 2025.

Despite the considerable uncertainty and stalled growth, labour markets in both Europe and the United States have stayed very strong. Despite the uncertainty and volatility of the financial markets, it seems reasonably likely that interest rates will continue to rise in 2023. Core inflation remains high in Europe and the United States, which is a result of brisk wage growth on the over-heating labour markets. It seems unlikely that inflation will decline towards the target without a deterioration in the labour market, which may require even higher interest rates.

Eurozone manufacturing output stalling

The eurozone manufacturing PMI readings fell below the 50 mark in the January-April period, suggesting a contraction in output. Not only that, but there seems to be a downward trend since January. The PMIs also suggest that both new orders and order books are shrinking in the eurozone.

It seems that this will be a challenging year for manufacturing in Europe. Based on current data, we cannot expect to see any growth, but on the other hand, output should not contract significantly either. The most likely scenario seems to be a year of zero growth, or a slight contraction of output.

Overall, sentiments seem to have brightened in early 2023. As the outlook in manufacturing is bleak, this is due to the improved outlook for the service sector. The services PMI points to clear growth, and driven by the service sector, the eurozone economy can be expected to grow slightly in the first half of the year.

Based on preliminary data, the eurozone economy grew in the first quarter of 2023, but only by 0.1 per cent from the previous quarter. No growth was recorded in the last quarter of 2022. In practice, this means that the eurozone GDP has experienced zero growth in the past six months.

The sentiments are significantly different in manufacturing and services, and the difference between the two PMIs has not been this great since 2009. While there is no clear explanation, it is possible that as the acute energy crisis has eased, consumer sentiment has improved, leading to increased consumption of services. It is also difficult to predict whether the expansion of the service sector will eventually boost manufacturing, too, or whether the challenging situation in manufacturing will weigh on the growth of services.

In the United States, both manufacturing and services PMIs indicate growth in early 2023. The gap between services and manufacturing has widened in both Europe and the United States. While services are growing strongly, manufacturing is barely expanding.

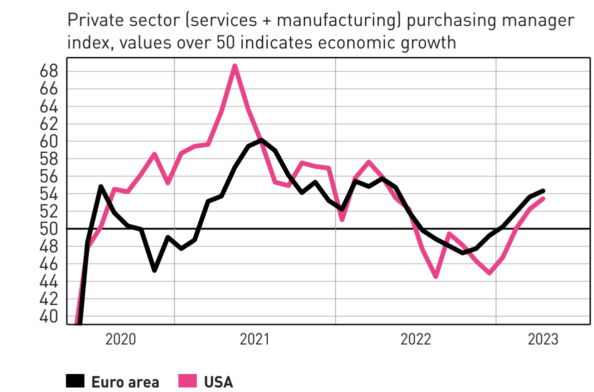
The best estimate for manufacturing output in the United States is very similar to that in Europe. While the outlook is slightly better in the United States, growth is expected to be very flat also there.

In terms of actual output development, growth stalled already towards the end of 2022 in both regions. As stated, we cannot expect to see growth in 2023, and activity is expected to remain flat.

While it seems that the worst-case scenario of the energy crisis did not materialize in the 2022/2023 winter and economic development exceeded expectations, the situation remains unchanged in terms of uncertainty and risks. In addition to geopolitical risks, economic outlook is clouded by the worrying problems in the banking sector.

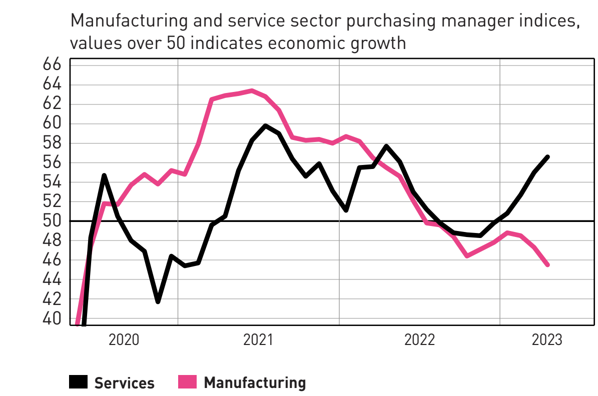
The financial sector is likely to face further problems in 2023. At least for now, it seems that they are not becoming systemic problems, which means that a more serious banking crisis should be avoided. However, continued uncertainty will lead to tightening of credit conditions, which is likely to hamper economic activity in 2023.

The outlook picked up somewhat in the eurozone and the US during the early part of the year



Latest information: April 2023
Source: Markit, Macrobond

Eurozone purchasing manager indices are telling an inconsistent message about early year developments



Source: Markit, Macrobond

Geopolitical risks related to China are increasingly worrying. The situation in terms of China's relations with Russia, the United States, Europe and Taiwan is very tense. Should any major negative developments take place in any of these regions, the impact on the global economy would be significant. It seems likely that we cannot escape a crisis of some sort with China in the coming years. Businesses should prepare for this to the best of their abilities.

Finland in technical recession in the second half of 2022

Finland's economy slipped into a technical recession in the second half of 2022. A technical recession refers to two consecutive quarters of negative GDP growth.

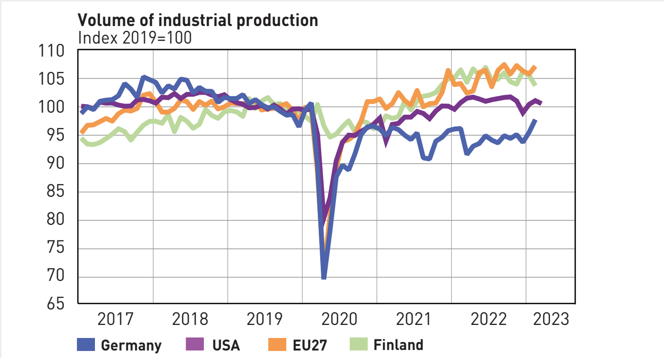
The quarterly changes have been very moderate, however, and close to zero growth. We can expect to see very similar figures for the first quarter of 2023.

Consumer confidence has slowly recovered from the record-low level recorded before the end of last year. There is less uncertainty about energy prices, and consumers' expectations of their own economy have returned close to the long-term average. Improved consumer sentiment gives rise to hope that we can expect to see signals of improvement in the housing market as well as the consumer goods market and the retail sector in general. On the other hand, high interest rates are likely to make consumers postpone any major purchases for a long time yet.

According to the recent Business Tendency Barometer published by the Confederation of Finnish Industries, the situation in manufacturing continued to deteriorate in early 2023. While the expectations continued to improve, the outlook nevertheless remained pessimistic.

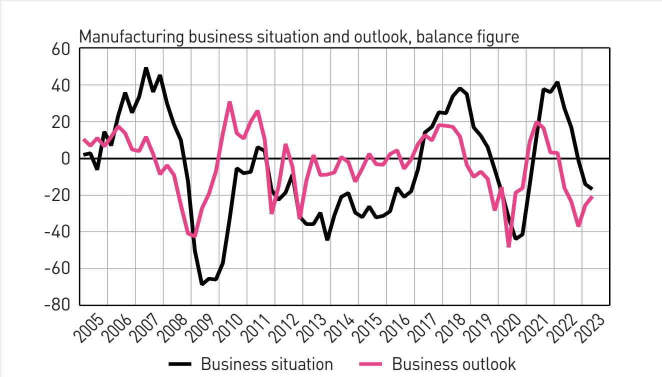
Manufacturing output growth has stalled also in Finland. Production volumes in manufacturing as a whole (including forestry and chemical industry) are shrinking. In the manufacturing sectors of technology industry, output volumes have fallen in the metals industry, while mechanical engineering is reporting zero growth, and the electronics and electrotechnical industry output is growing slightly.

Industrial production growth stalled worldwide



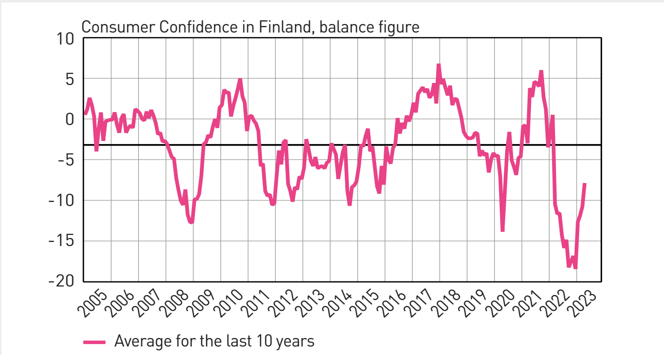
Latest information: February 2023
Source: Eurostat, Macrobond

The business cycle in the manufacturing continued to deteriorate—Pessimism about future diminished slightly



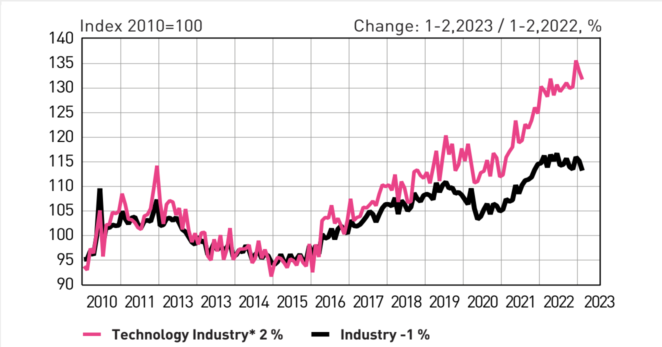
Source: EK Business Tendency Survey

Consumer confidence continued to recover



Latest information: April 2023
Source: Macrobond, Statistics Finland

Volume of Industrial Production in Finland



*) Excl. Information Technology and Consulting Engineering
Seasonally adjusted volume index
Latest information: February 2023
Source: Macrobond, Statistics Finland

Order intake fell slightly, but remains at a good level

The turnover of technology industry companies in Finland grew by approximately 17 per cent in 2022 from 2021. Turnover grew in all main sectors. Output growth and the significantly higher level of prices contributed to turnover growth in 2022. Turnover in Finland in 2022 exceeded EUR 100 billion for the first time, totalling EUR 106 billion.

The monetary value of new orders in the January-March period was 13 per cent lower than in the previous quarter, but 12 per cent higher year-on-year. High producer prices have contributed to the increase in the value of order intake.

The balance figure for tender requests in April was -13. The figure has now seen seven consecutive quarters of decline. The data collected in April indicates that demand has continued to weaken. However, the rate of decline remains moderate.

At the end of March, the value of order books was 3 per cent lower than at the end of December, but 7 per cent higher than in March 2022.

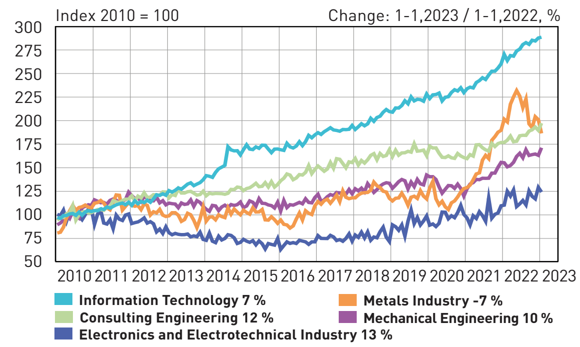
Judging from order trends in early 2023, the turnover of technology industry companies is expected to grow at a slower pace or stop growing during the year.

The number of personnel employed by technology industry companies in Finland at the end of March was 0.9 per cent higher than at the end of December. At the end of March, the industry had approximately 340,000 employees. According to the personnel survey by Technology Industries of Finland, the number of employees affected by lay-off procedures at the end of March was only approximately 8,000.

Recruitment of new employees remained at a good level in the January-March period. In total, recruitments came to 13,400. Some companies were increasing their personnel, others were hiring new employees due to retirements and employee turnover.

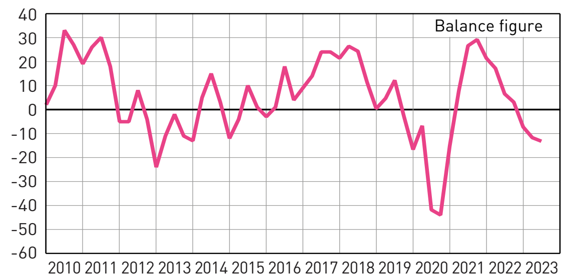
The increase in the number of personnel despite the fall in the monetary value of new orders and the high level of uncertainty seems to signal that companies have faith in the future and, on the other hand, reflects the serious skills shortage on the labour market. Companies have needed to expand their teams even though demand has already weakened, and order volumes have dropped.

Turnover of the Technology Industry in Finland



Seasonally adjusted turnover index
Shares of turnover in 2021: mechanical engineering 39 %, electronics and electrotechnical industry 21 %, information technology 19 %, metals industry 13 %, consulting engineering 8 %
Source: Macrobond, Statistics Finland. Latest information: January 2023

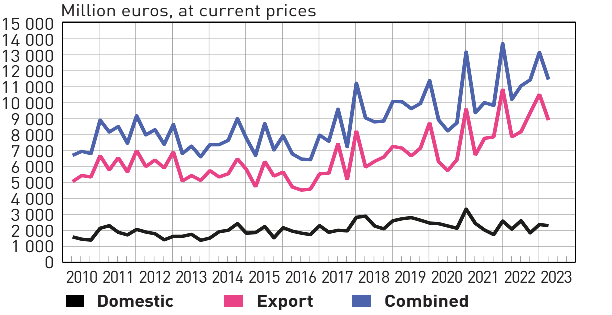
Tender requests* received by the technology industry companies in Finland



*) "Have you experienced a notable increase or decrease in the number of requests for tenders in recent weeks in comparison to the situation three months ago".
Balance figure = the share of companies receiving more requests - the share of companies receiving less requests. Negative balance figure indicates that demand has weakened when compared to a situation three months ago.

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies
The latest questionnaire in April 2023.

Value of new orders in the technology industry* in Finland

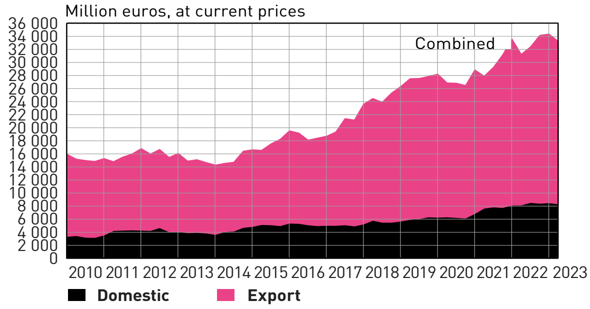


Change:	I,2023 / I,2022	I,2023 / IV,2022
Export:	+13 %	-15 %
Domestic:	+11 %	-3 %
Combined:	+12 %	-13 %

*) Excl. metals industry, game industry and data center companies

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation January-March 2023.

Value of order books in the technology industry* in Finland



Change:	31.3.2023 / 31.3.2022	31.3.2023 / 31.12.2022
Export:	+8 %	-4 %
Domestic:	+2 %	-2 %
Combined:	+7 %	-3 %

*) Excl. metals industry, game industry and data center companies

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation 31st March 2023.

Electronics and Electrotechnical Industry in Finland

Value of new orders fell from the previous quarter

The turnover of companies in the electronics and electrotechnical industry (telecommunications equipment, electrical equipment and medical technology) in Finland grew by approximately 18 per cent in 2022 from 2021. In 2022, their turnover in Finland amounted to more than EUR 21 billion.

The value of both new orders and order books decreased in the January-March period from the preceding quarter. Typically for the sector in recent years, order volumes can fluctuate strongly from one quarter to another.

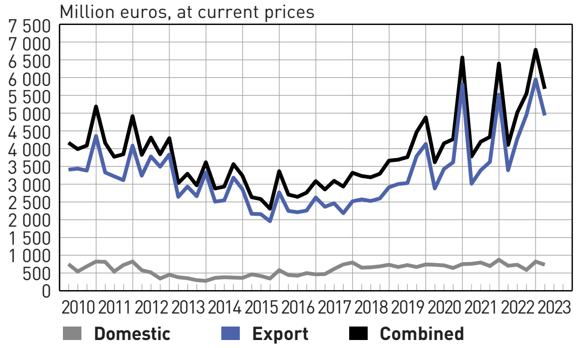
The electronics and electrotechnical companies that took part in Technology Industries of Finland's survey of order books reported that the monetary value of new orders between January and March was 13 per cent lower than in the preceding quarter, but 28 per cent higher than in the corresponding period in 2022.

At the end of March, the value of order books was 13 per cent lower than at the end of December, but 28 per cent higher than in March 2022.

Judging from order trends in early 2023, the turnover of electronics and electrotechnical industry companies is expected to continue to grow during the year.

The number of personnel employed by electronics and electrotechnical companies in Finland at the end of March was 0.9 per cent higher than at the end of December. The industry had approximately 41,100 employees in March.

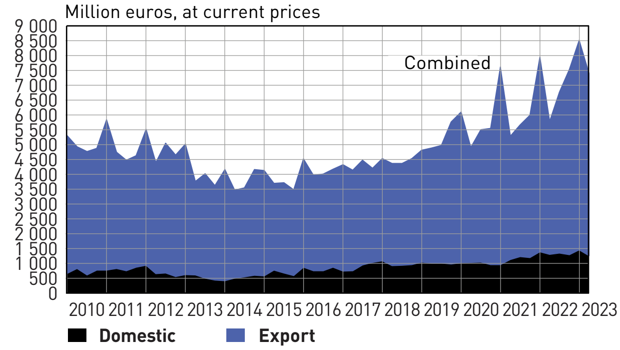
Value of new orders in the electronics and electrotechnical industry in Finland



Change:	I,2023 / I,2022	I,2023 / IV,2022
Export:	+45 %	-17 %
Domestic:	+4 %	-11 %
Combined:	+38 %	-16 %

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation January-March 2023.

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



Change:	31.3.2023 / 31.3.2022	31.3.2023 / 31.12.2022
Export:	+37 %	-13 %
Domestic:	-3 %	-14 %
Combined:	+28 %	-13 %

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation 31st March 2023.

Mechanical Engineering in Finland

Order intake fell slightly

The turnover of mechanical engineering companies (machinery, metal products and vehicles) in Finland increased by 15 per cent in 2022 from 2021. In 2022, their turnover in Finland amounted to EUR 39 billion.

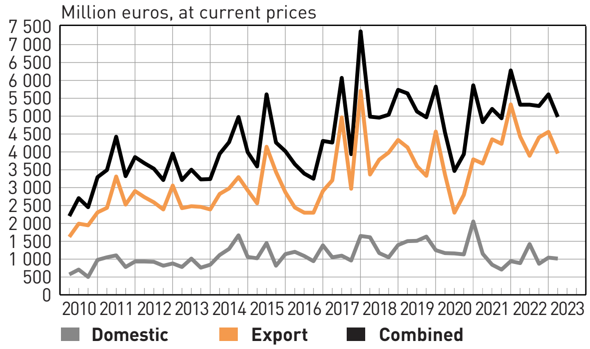
The value of new orders in mechanical engineering fell by 11 per cent in the January-March period from the preceding quarter. Year-on-year, the value of new orders decreased by 6 per cent. The rising producer prices continues to contribute to the increase in the monetary value of order intake.

At the end of March, the value of order books was 1 per cent higher than at the end of December and 2 per cent higher than in March 2022. It remains necessary to consider that the shipyards' share of the total value of order books is exceptionally large.

Judging from order trends in early 2023, the turnover growth of mechanical engineering companies is expected to slow down in the first half of the year, maybe even contracting towards the end of the year.

The number of personnel employed by mechanical engineering companies in Finland at the end of March was 1.4 per cent higher than at the end of December. The industry had approximately 139,300 employees in March.

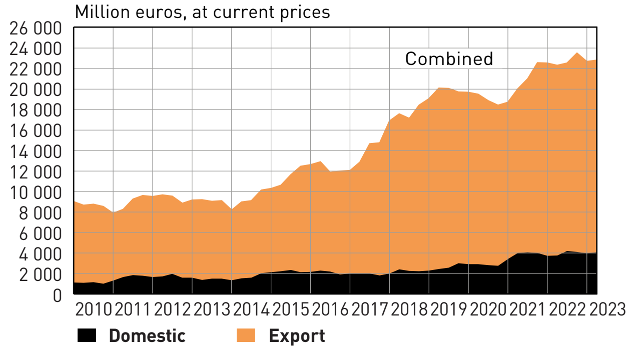
Value of new orders in the mechanical engineering in Finland



Change:	I,2023 / I,2022	I,2023 / IV,2022
Export:	-11 %	-13 %
Domestic:	+14 %	-3 %
Combined:	-6 %	-11 %

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation January-March 2023.

Value of order books in the mechanical engineering in Finland



Change:	31.3.2023 / 31.3.2022	31.3.2023 / 31.12.2022
Export:	+1 %	+0 %
Domestic:	+8 %	+3 %
Combined:	+2 %	+1 %

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation 31st March 2023.

Metals Industry in Finland

Sharp drop in turnover

The turnover of metals industry companies (steel products, non-ferrous metals, castings and metallic minerals) in Finland increased by 33 per cent in 2022 from 2021. In 2022, their turnover in Finland amounted to EUR 19 billion. The sharp rise in producer prices in early 2022 contributed significantly to the turnover growth, but the prices fell quickly during the second half of the year.

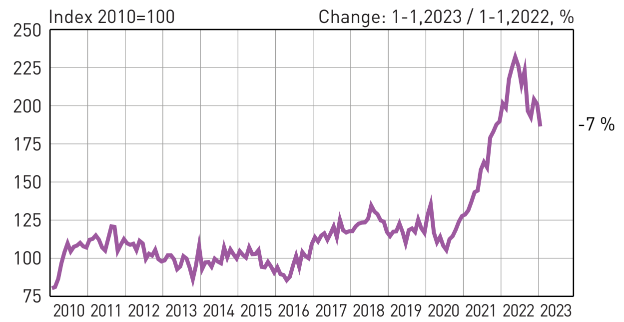
The total production of steel products, non-ferrous metals, castings and metallic minerals in Finland in the January-February period decreased 2 per cent year-on-year.

The number of personnel employed by metals industry companies in Finland at the end of March was 0.8 per cent higher than at the end of December. The industry had approximately 16,600 employees in March.

Year-on-year, global steel production decreased by 0.1 per cent between January and March. Production increased by 3.4 per cent in Asia and fell by 10.1 per cent in the EU and by 4.1 per cent in North America.

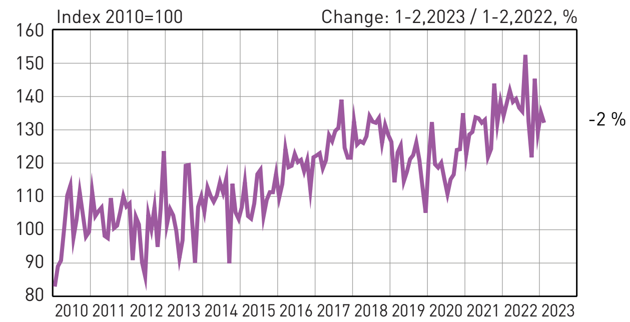
China, India, Japan, the United States and Russia were the largest producers in early 2023. China accounted for approximately 57 per cent of global steel production.

Turnover of the metals industry in Finland



Seasonal adjusted turnover index
Shares of turnover 2021: iron and steel products, non-ferrous metals and castings 90 %, mining of metal ores 10 %
Latest information: January 2023
Source: Statistics Finland

Production volume of the metals industry in Finland



Seasonal adjusted volume index
Shares of turnover 2021: iron and steel products, non-ferrous metals and castings 90 %, mining of metal ores 10 %
Latest information: February 2023
Source: Statistics Finland

Consulting Engineering in Finland

New orders at the same level as in the previous quarter

The turnover of consulting engineering companies (industrial, social and construction expert services) in Finland increased by 8 per cent in 2022 from 2021. In 2022, their turnover in Finland amounted to more than EUR 7 billion.

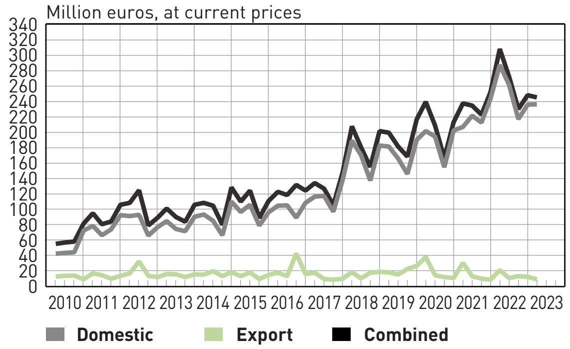
The consulting engineering companies that took part in Technology Industries of Finland's survey of order books reported that the monetary value of new orders between January and March was 1 per cent lower than in the preceding quarter and 20 per cent lower than in the corresponding period in 2022.

At the end of March, the value of order books was 1 per cent lower than at the end of December and more or less the same as in March 2022.

Judging from order trends in early 2023, the turnover growth of consulting engineering companies is expected to continue in the first half of the year, but slower construction activity may weigh on growth in the second half.

The number of personnel employed by consulting engineering companies in Finland at the end of March was 0.4 per cent higher than at the end of December. The industry had approximately 58,300 employees in March.

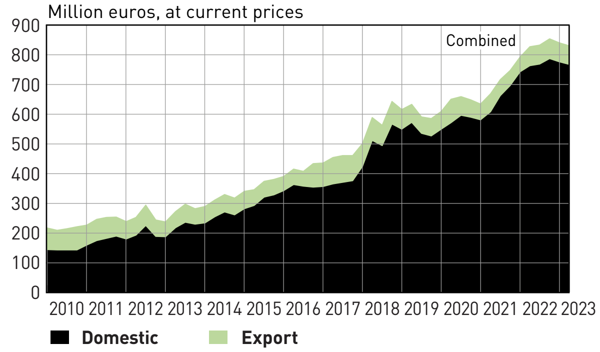
Value of new orders in the consulting engineering in Finland



Change:	I,2023 / I,2022	I,2023 / IV,2022
Export:	-57 %	-27 %
Domestic:	-18 %	+0 %
Combined:	-20 %	-1 %

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation January-March 2023.

Value of order books in the consulting engineering in Finland



Change:	31.3.2023 / 31.3.2022	31.3.2023 / 31.12.2022
Export:	-2 %	-0 %
Domestic:	+1 %	-1 %
Combined:	+0 %	-1 %

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation 31st March 2023.

Information Technology in Finland

New orders up from the previous quarter

According to preliminary data, the turnover of information technology companies (IT services and software) in Finland grew by 13 per cent in 2022 from 2021. In 2022, their turnover in Finland amounted to more than EUR 19 billion.

New orders increased in the January-March period from the previous quarter. Typically for the sector, order volumes can fluctuate strongly from one quarter to another.

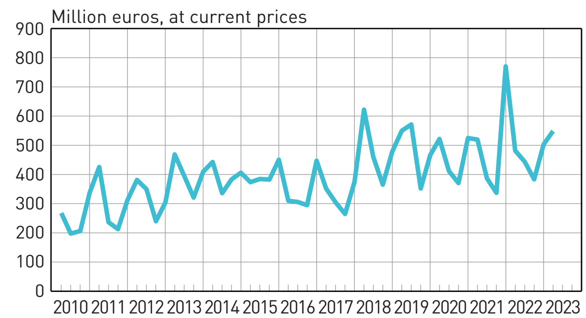
The information technology companies that took part in Technology Industries of Finland's survey of order books reported that the monetary value of new orders between January and March was 9 per cent higher than in the preceding quarter and 14 per cent higher than in the corresponding period in 2022. Game industry and data centre companies are not included in the survey.

At the end of March, the value of order books was 3 per cent lower than at the end of March and 5 per cent lower than in March 2022.

Judging from order trends in early 2023, the turnover of information technology companies is expected to continue to grow during the year.

The number of personnel employed by information technology companies in Finland at the end of March was up 0.6 per cent from the end of December. The industry had approximately 84,500 employees in March.

Value of new orders in the information technology* in Finland

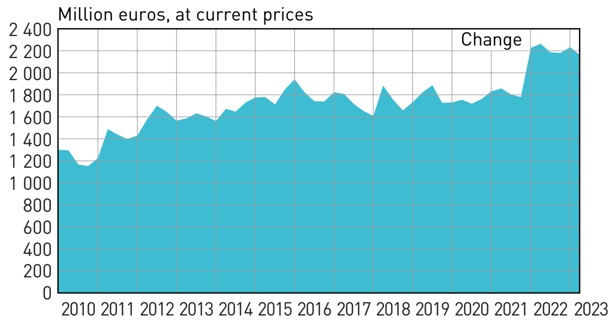


Change: I,2023 / I,2022 — I,2023 / IV,2022
Combined: +14 % — +9 %

*) Excl. game industry and data center companies

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation January-March 2023.

Value of Order Books in the Information Technology* in Finland



Change: 31.3.2023 / 31.3.2022 — 31.3.2023 / 31.12.2022
Combined: -5 % — -3 %

*) Excl. game industry and data center companies

Source: The Federation of Finnish Technology Industries' order book survey's respondent companies, latest observation 31st March 2023.

Personnel increased both in Finland and in international subsidiaries in 2022

Finnish technology industry companies employed a total of 612,000 people on average in 2022. Domestic operations accounted for 334,000 jobs, while 278,000 people worked abroad. Staff numbers in Finland increased by 4.1 per cent, or approximately 13,200 people. Staff numbers in international subsidiaries increased by 3 per cent, or by approximately 7,300 people.

According to the quarterly survey by Technology Industries of Finland, personnel numbers at the end of March were up 0.9 per cent from the end of December. At the end of March, technology industry companies employed approximately 340,000 people in Finland.

Staff numbers in international subsidiaries grew in all the main sectors: by 1 per cent in electronic and electrotechnical industry, by 3 per cent in mechanical engineering, by 8 per cent in metals industry, by 16 per cent in consulting engineering, and by 3 per cent in information technology.

In regional comparison, technology industry personnel increased by 4 per cent in advanced markets and by 2 per cent in emerging markets.

In Western Europe, personnel numbers were up by 2 per cent, in North America, by 9 per cent, and in Asia and Oceania, by 3 per cent. Significant business restructuring affected personnel numbers abroad again in 2022.

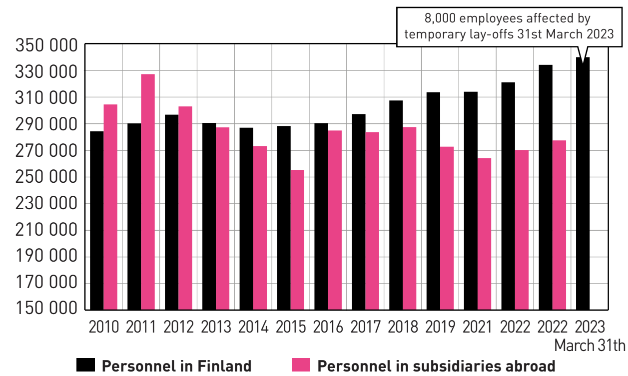
As much as 59 per cent of foreign staff employed by Finnish technology industry companies is located in low-cost economies in emerging regions: Asia, Central and Eastern Europe, Latin America, Africa and the Middle East. The ten largest concentrations of foreign subsidiaries in 2022, measured by number of staff, are as follows: China (47,700), India (33,200), United States (26,400), Poland (20,700), Germany (18,600), Mexico (16,000), Sweden (14,700), France (9,900), United Kingdom (8,000), and Norway (6,700)

In March–April 2023, Technology Industries of Finland conducted a survey of the number of domestic and international staff employed by its member companies/foreign subsidiaries at the end of 2022, 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.

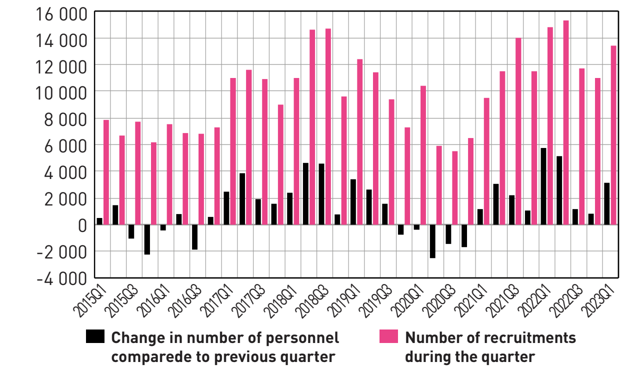
The number of staff in Finland by the end of March 2023 was investigated as part of the quarterly survey. Information on lay-offs and recruitments was gathered separately.

Headcount in the technology industry in Finland and foreign subsidiaries



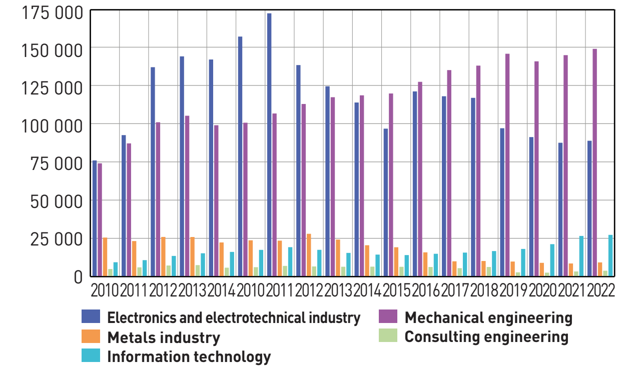
Source: Statistics Finland, The Federation of Finnish Technology Industries' labour force survey, Macrobond

Headcount growth continued despite uncertainty



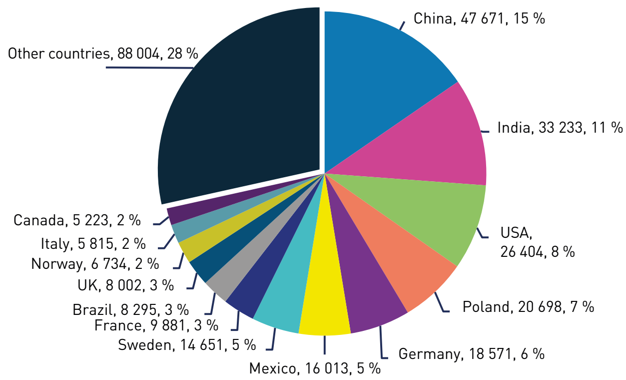
Source: The Federation of Finnish Technology Industries' labour force survey

Technology Industry Personnel in Subsidiaries Abroad by Industry



Source: The Federation of Finnish Technology Industries' labour force survey, Macrobond

Technology Industry Personnel in Subsidiaries Abroad by Country (Information from year 2022)



Source: The Federation of Finnish Technology Industries' labour force survey

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