



cecimo

European Association of the Machine Tool Industries
and related Manufacturing Technologies

Q4 2022

ECONOMIC AND STATISTICAL TOOLBOX



- CECIMO8 final quarter orders growth strongly driven by domestic market
- CECIMO MT production reaches more than 25 billion euros in 2022
- PMI levels among CECIMO countries still below favorable zone
- European and global growth prospects for 2023 revised slightly upwards

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INTRODUCTION

The CECIMO Economic and Statistical Toolbox for the last period of 2022 provides the latest data update for the European MT sector. The report covers the fourth quarter of 2022 and the full year, but where possible, the most recent data has been included. While the latest business climate indicators show a less favorable situation in the fourth quarter of 2022, the beginning of 2023 shows a slight improvement. Positive developments, such as a reduced risk of gas shortages in Europe and a possible advance in domestic and foreign demand, **have improved the scenarios for global and European growth in 2023.**

While there are positive developments in terms of easing inflationary pressures, monetary tightening in Europe and globally is expected to continue to negatively impact business financing and investment levels in 2023. Among other positive developments, the easing of supply-side pressures is expected to provide European manufacturers with more stable supply over the course of the year.

The **EU Industrial Production Index (IPI)** shows a slight downward trend in the last period of 2022. However, looking at the annual averages for the whole of 2022, the EU industrial production index was 1% above the level of 2021.

As for the performance of the European machine tool industry, total new orders in the last quarter of 2022 improved compared to the previous quarter and remained above the same period of last year. However, the increase in MT orders was strongly driven by increased demand in the domestic market. As shown later in the report, **CECIMO8 domestic orders** in Q4 2022 were 7% higher than in the same period last year, while **CECIMO8 foreign orders** were 1% lower on the same basis. As a result, the **CECIMO8 total orders** index increased by 13% on a quarterly basis and the index level remained 1% above the same period a year earlier.

Based on the latest data update (March 2023), we have slightly revised our expectations for 2022 and **CECIMO's MT production** is now expected to increase by around 11% in 2022, reaching a level of more than 25 billion euros. In terms of trade, according to our latest data, **CECIMO's total MT exports** are expected to increase by around 11% in 2022, our revised estimates for **total MT imports** are now expected to increase by around 26%. Please bear in mind that our update of the forecast for MT consumption will be available in the next edition of this report.

With regards to the level of investment, **Gross Fixed Capital Formation** in the EU increased by 4.5% in the fourth quarter of 2022 on a quarterly basis and, at 756.7 billion euro, was slightly higher than in the same period of the previous year (+1%). **Capacity utilisation** in the EU remained well above the long-term average, while the level of **spare production capacity** in the industrial goods sector fell back into negative territory.

Eurozone banks reported a further net tightening of credit standards for loans or credit lines to enterprises in the final quarter of 2022. In line with this, banks' overall terms on new loans also tightened, while **demand for loans declined significantly** compared to previous reporting period.

According to the **CECIMO Business Climate Barometer** for the fourth quarter of 2022, our machine tool manufacturers expressed a positive business climate in the last quarter of 2022. While expectations for the production in the next quarter remains positive, expectations for general business situation, demand and exports remain negative.

The **Global Purchasing Managers' Index (PMI)** recorded further declines in the last period of 2022. However, following ten months of decline, the Global PMI finally improved in the first two months of 2023, driven by improving business sentiment around the world. While the Global PMI reached the no-change mark in February, the Eurozone PMI remains in the unfavourable zone.

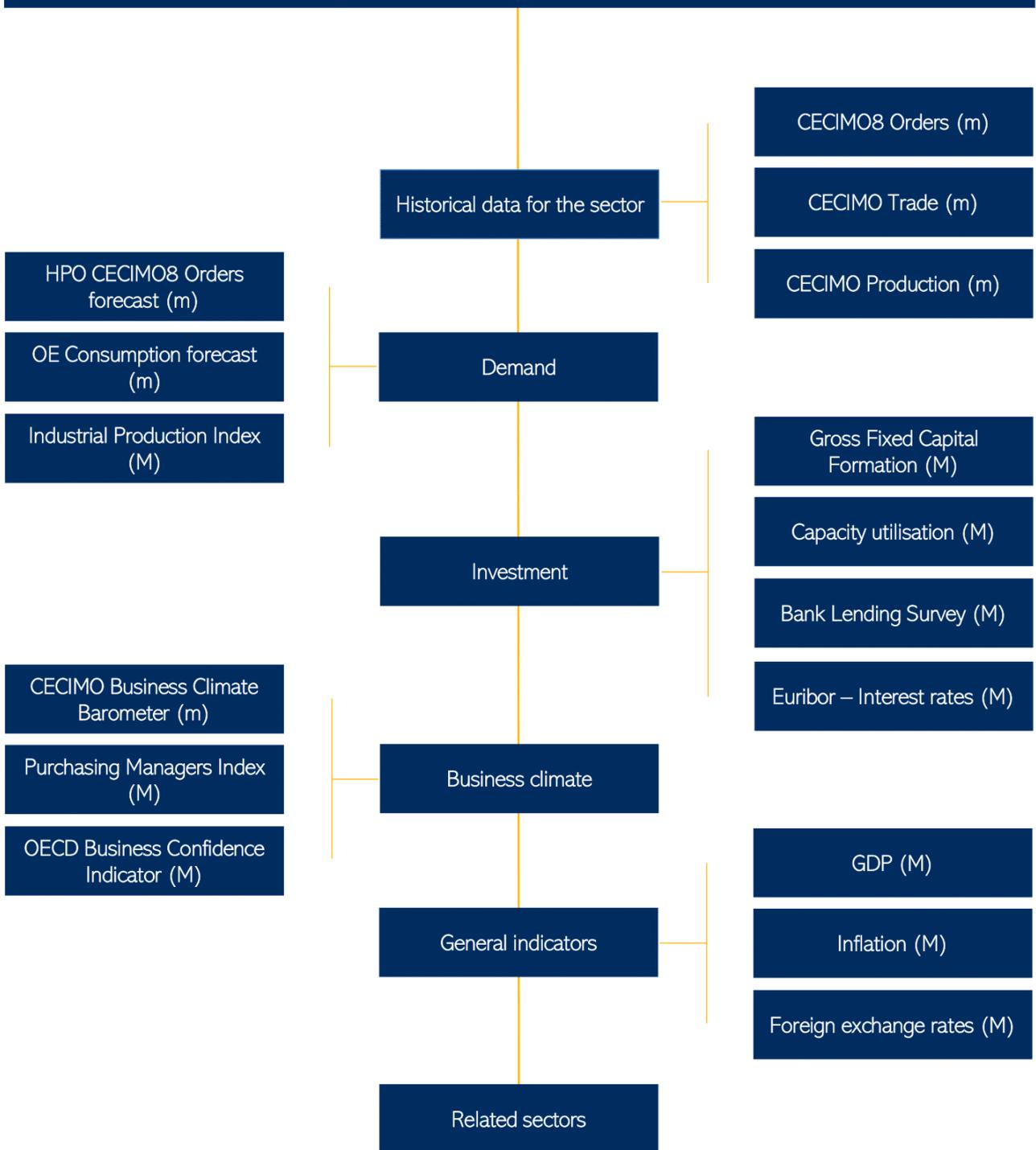
Following a downward trend in recent quarters, the **European Business Climate Indicator** fell below 100 points for the first time since the fourth quarter of 2020. While the European BCI fell by 0.5% from 100.4 to 99.9 points in the fourth quarter, the business confidence indicator for the euro area (19 countries) remained slightly higher at 101 points.

The latest data shows that **EU GDP** grew by 1.8% in the last quarter of 2022 compared to the same period of the previous year. On an annual basis, EU GDP growth would be around 3.5% in 2022. As will be shown later in the report, in its latest forecast (Winter 2023), the Commission has revised upwards its forecast for EU GDP growth in 2023 and downwards its inflation scenarios.

Important sectors related to the machine tool outlook are covered in the last part of the report. Both the **automotive and aerospace** sectors show new indicators of recovery in the final period of 2022. The latest **metal** price figures show that metal prices have remained stable in the last period of 2022, but there is a noticeable increase in some regions in recent months. On the **energy** side, the easing of energy prices should have a positive impact on consumer spending, as well as on reducing input costs and improving business sentiment.



Toolbox Mind Map



1. HISTORICAL DATA FOR THE SECTOR

1.1 CECIMO 8 ORDERS (M)

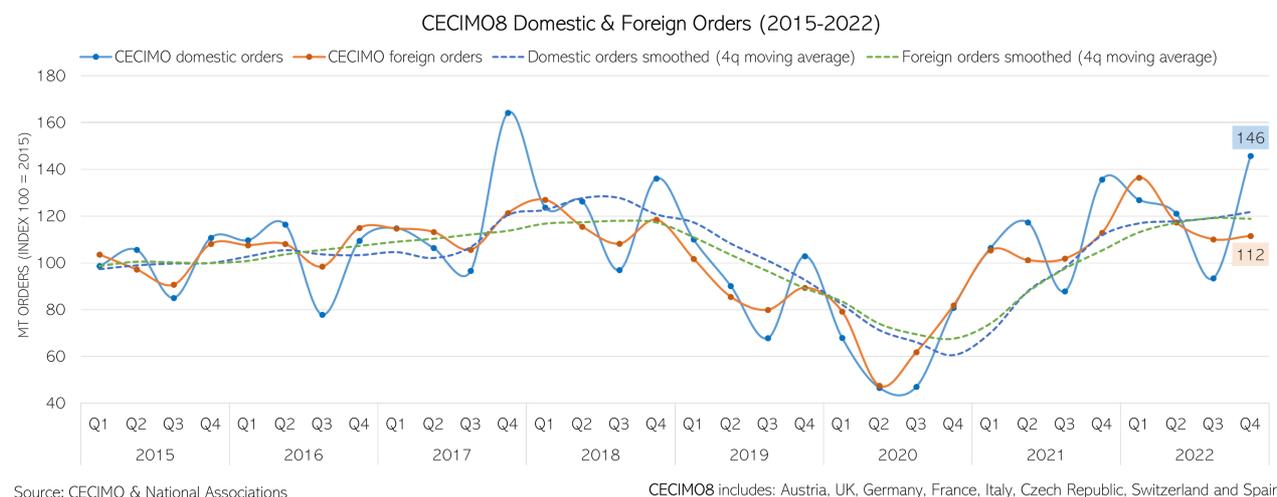
After a slowdown in the third quarter of 2022, the final quarter brings, as expected, new orders growth in most of the CECIMO8 countries. However, it should be noted that the increase in MT orders was strongly driven by increased demand in the domestic market.

The level of CECIMO8 domestic orders was slightly higher compared to the same period last year (+7%). However, looking at a quarterly basis, there was a significant increase compared to the previous quarter (+56%). Moreover, looking at the historical level, we can see that domestic orders reached their highest level since the fourth quarter of 2017. Among the CECIMO8 countries, only Switzerland reported a decrease in domestic orders compared to the previous quarter. Nevertheless, the Swiss domestic orders also remained above the historical average.

CECIMO8 foreign levels improved by 1% compared to last quarter but were 1% lower than a year earlier. While most CECIMO8 countries recorded negative growth, the situation in Germany was more stable and Italian domestic orders showed strong growth. Looking at the CECIMO8 annual averages, while domestic orders grew by around 9% in 2022, foreign orders improved by 13% compared to the 2021 average.

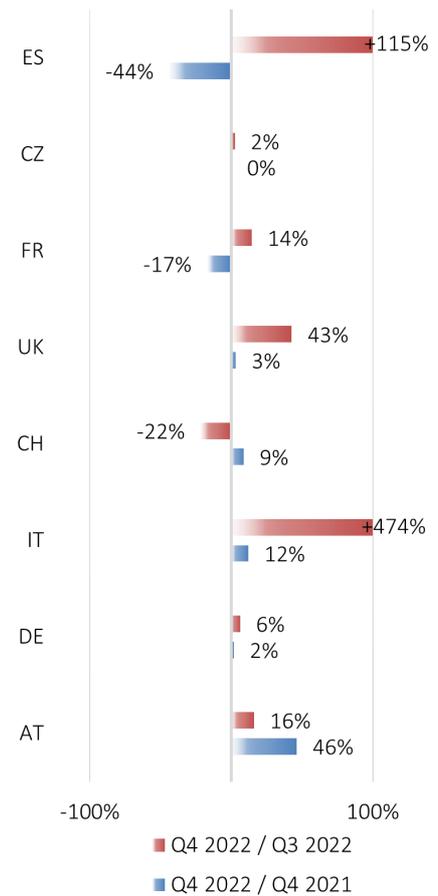
Reflecting the changes in the domestic and foreign market, CECIMO8 total new orders improved by 13% on a quarterly basis in the fourth quarter of 2022. The index level also remained 1% higher than in the same period of the previous year. While the improvement was expected in the last period of 2022, the first quarter of 2023 is expected to result in lower year-on-year order levels. As a reminder, CECIMO8 total new orders reached a record high in the third quarter of 2022, so it is difficult to expect that this level will be reached in 2023, given the high level of economic uncertainty.

Although new orders in 2023 are expected to remain below the 2022 average (see the HPO order forecast on the following pages), it is important to note that strong orders in 2022 signal strong consumption in domestic and foreign markets and will drive MT production in 2023.



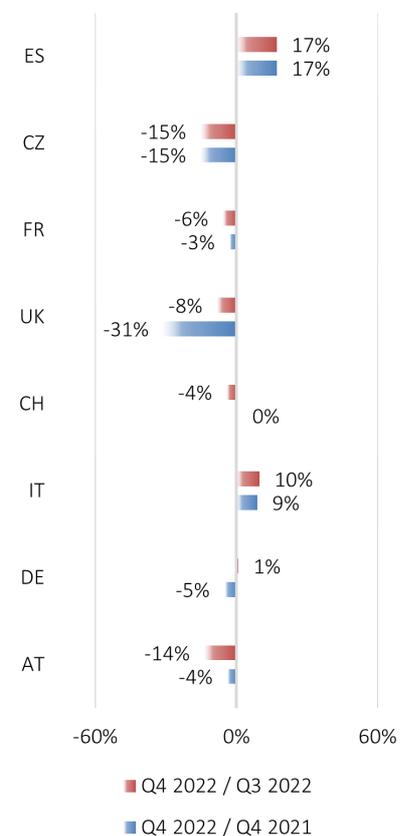
Domestic Orders

- Among the CECIMO countries, Spain and France recorded a lower level of new orders than in the same period of the previous year. However, it is important to note that both countries recorded higher levels than in the previous quarter (Spain +115%, France +14%).
- The strongest quarterly improvement, which had the biggest impact on CECIMO's domestic order growth, was in Italy, where orders more than quadrupled quarter-on-quarter. In addition to Spain and Italy, it is important to note the significant growth in domestic orders in the UK on a quarterly basis (+43%).
- The significant improvement compared to the same period in 2021 was recorded in Austria (+46%), Italy (+12%) and Switzerland (+9%).
- Domestic orders in the Czech Republic remained at the same level compared to the same quarter last year, recording slight growth on quarterly basis (+2%).
- While all other CECIMO countries recorded growth on a quarterly basis, domestic orders in Switzerland were 22% lower than in the third quarter of 2022. However, as mentioned above, this level of domestic orders remained quite high and above the level of the same period in 2021.

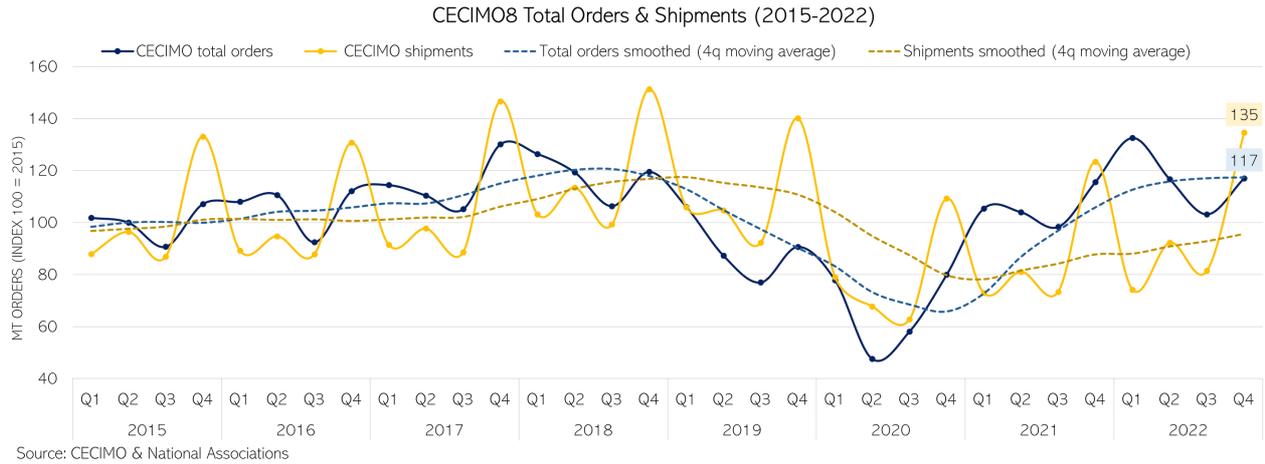


Foreign Orders

- Opposite to the situation in the domestic market, most countries recorded a decrease in the new foreign orders on a quarterly basis. Nevertheless, it should be noted that moderate quarterly growth was still recorded in Spain (+17%), Italy (+10%) and Germany (+1%).
- The sharpest fall in the new foreign orders compared with a year earlier was recorded in the United Kingdom (-31%).
- While the Czech Republic also recorded a sharp fall in new orders (-15%), the year-on-year decrease was more moderate in Germany (-5%), Austria (-4%) and France (-3%).
- The level of foreign orders in Switzerland was the same as in the previous quarter, but 4% lower than in the same period of the previous year.



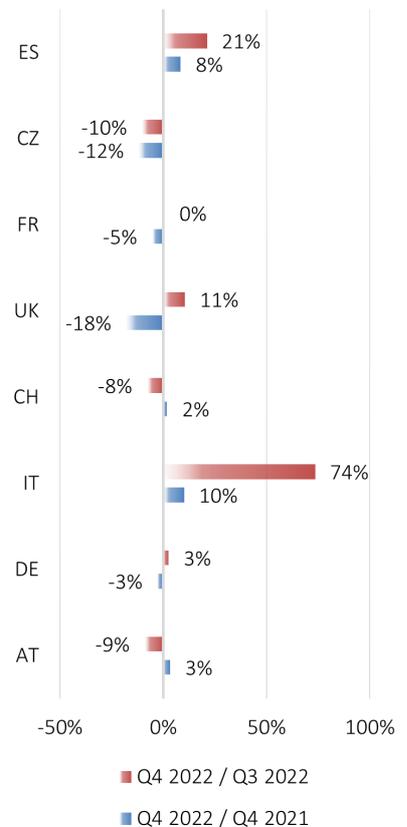
Total Orders



As shown in the graph above and based on the positive development especially in the domestic market, the CECIMO8 total orders index improved in Q4 2022 and reached the highest level since Q1 2022. Also, when analysing CECIMO8 total orders on an annual basis, it is important to highlight that 2022 order levels were 11% above the 2021 average.

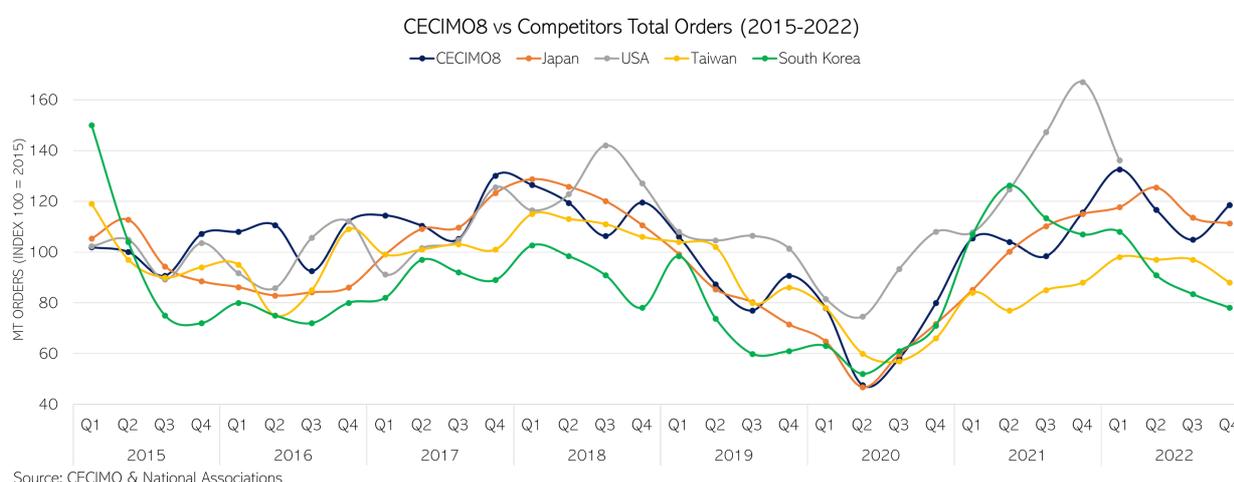
As expected for the last quarter, CECIMO8 shipments recorded a significant improvement and the highest index level since Q4 2019. It is worth noting that the smoothed shipments curve is still well below the smoothed total orders curve, indicating a significant gap and order backlog among CECIMO MT producers.

- The strongest growth in total orders compared to the previous quarter was recorded in Italy (+74%). As mentioned before, this development was mainly driven by good conditions in the domestic market.
- As a result of strong foreign demand, total MT orders in Spain remained 8% above the same period last year. In addition, the improvement in the domestic and foreign market compared to the previous quarter led to a 21% improvement in Spanish total MT orders on a quarterly basis.
- While German total MT orders improved by 3% on a quarterly basis, this level was down by 3% compared to the same period last year. A similar trend, but with greater differences, was recorded in the United Kingdom (18% compared to the same period last year).
- Switzerland and Austria recorded a decrease on a quarterly basis, but the level of orders remained above the same period last year. While in Switzerland the level of total orders was 2% higher than in the same period last year, in Austria it was 3% higher.
- The Czech Republic total orders recorded a decrease of 10% on a quarterly basis and a level that was 12% below the same period last year. These developments are mainly due to the lower level of foreign demand.



CECIMO Competitors

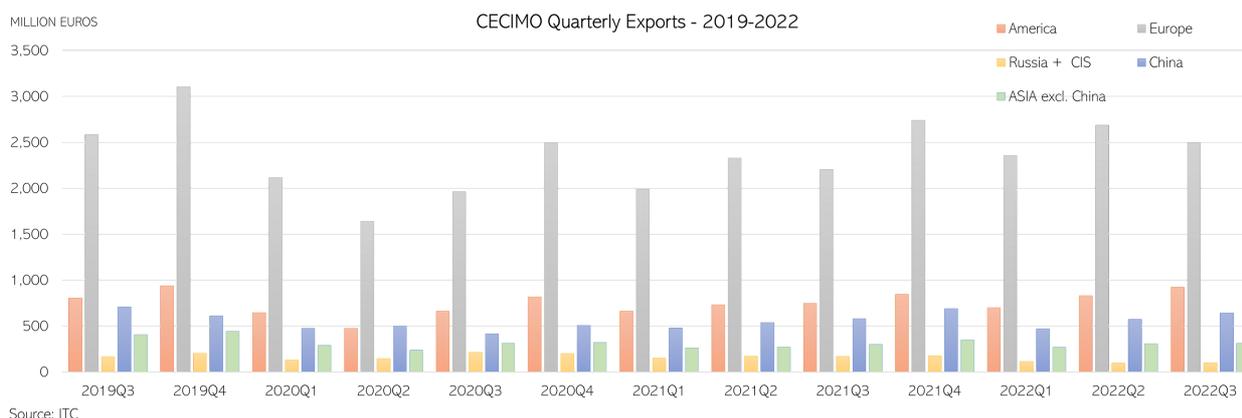
- Japan's MT producers recorded another quarterly decline in total orders, mainly due to lower domestic and foreign demand in the metal cutting sector. As a result, the total orders index fell by 2% on the quarterly basis and this level was 3% below the level of total orders for the same period a year earlier.
- While Taiwan's new domestic and foreign orders decreased on a quarterly basis, they remained roughly the same compared with the same period a year earlier. As a result, the total orders level index decreased by 9% on quarterly basis, stabilising at the same level as in the last period of 2021 (y/y).
- Total orders from South Korea continued to decline by 6% compared to the previous quarter, and this level of total orders was 27% lower compared to the same period last year. Importantly, the deterioration was more pronounced in domestic markets than in foreign markets, where growth (5%) was recorded on a quarter-on-quarter basis.
- Please note that US figures were not available at the time of writing.



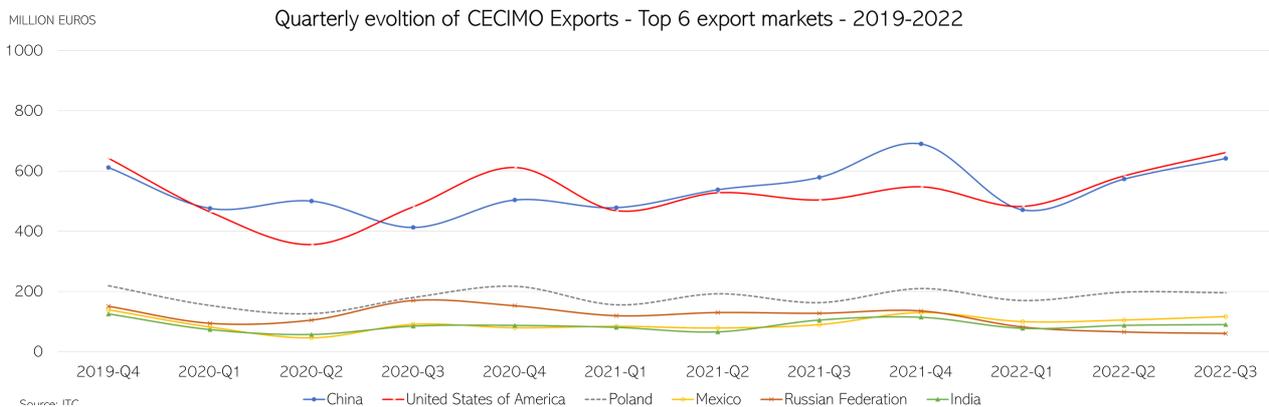
1.2 CECIMO TRADE (M)

Note: The following analysis refers to Q3 2022 trade figures. ITC Q4 2022 figures were not available at the time this report was written. The trade balance in the final section refers to the CECIMO total trade figures and the latest estimates for 2022.

Q3 2022 Exports

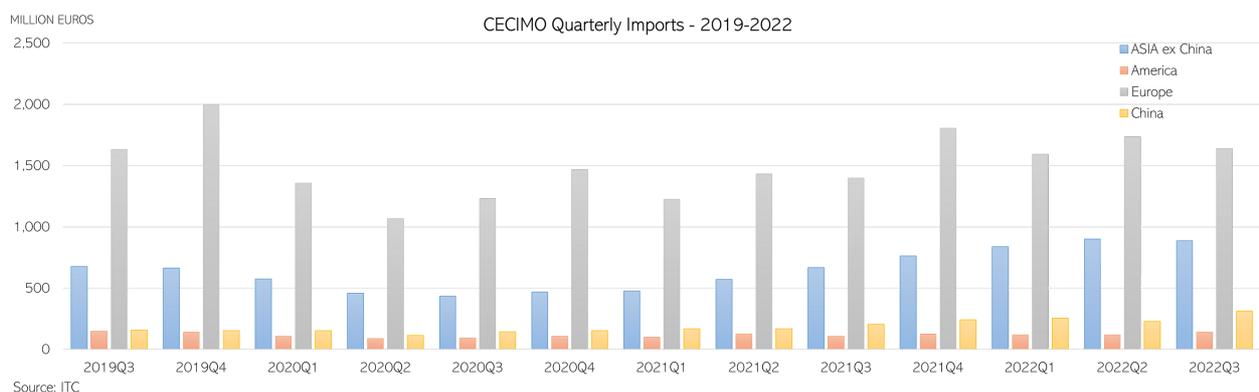


- CECIMO's total MT exports recorded a slight decrease (-1%) in the Q3 2022 compared with the previous quarter (Q2). However, it is important to highlight that the level of exports remained 12% higher than in the same period of the previous year.
- In line with lower level of performance on domestic market, exports recorded decrease on quarterly basis on domestic market - Europe (-7%).
- The strongest export growth was recorded for exports to the United States, where exports rose by 11% on a quarterly basis, and this level was almost 24% higher than in the same quarter of 2021.
- Looking at Asia region, the level of MT exports to China increased significantly on a quarterly basis (+12%), while exports to the rest of Asia remained roughly the same (+2%).
- On a quarterly basis, there were significant decreases in MT exports to Africa (-9%) and the CIS region (-8%). Looking at the data on an annual basis, exports to the CIS region were around 41% lower than in the same period of the previous year.

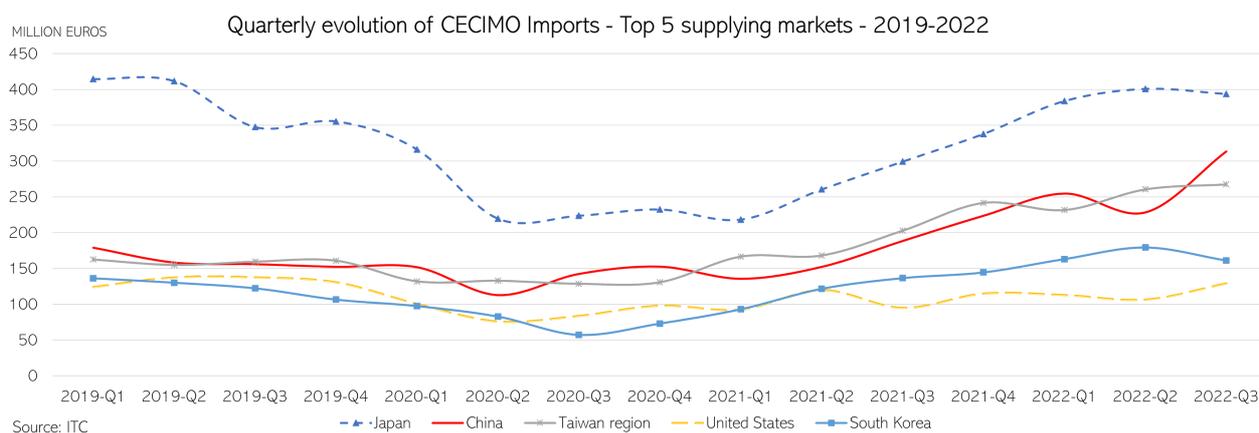


- As the chart above shows, the United States remained the main MT export destination for the CECIMO countries in the third quarter, closely followed by China.

Q3 2022 Imports

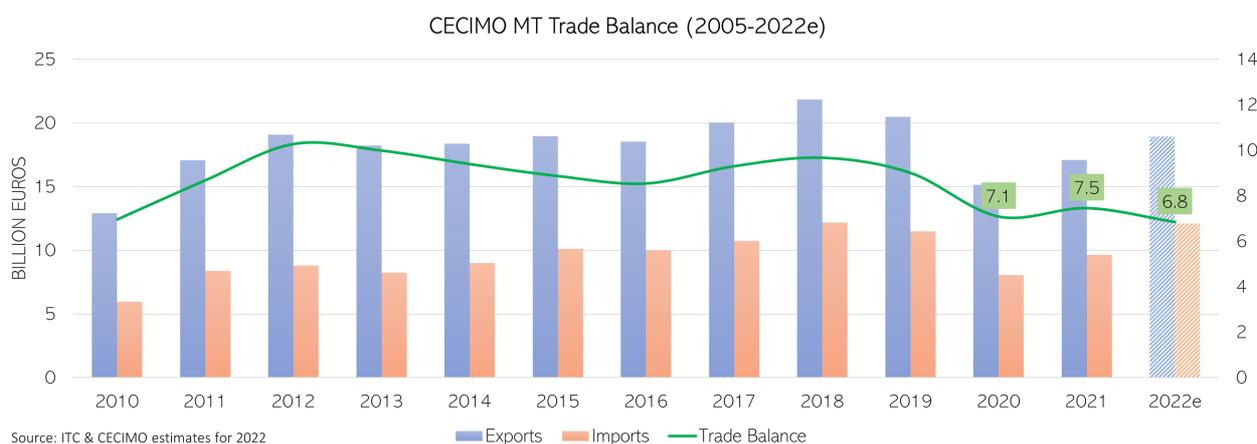


- The third quarter of 2022 showed no change in the level of total CECIMO MT imports compared with the previous quarter. However, the level of imports remained around 25% above the level recorded in the third quarter of 2021 (same period - year before).
- While MT imports from the domestic region fell by around 7% on a quarterly basis, the largest increase in MT imports came from the United States (+19%).
- As in the previous quarter, the largest quarter-on-quarter decline occurred in the volume of MT imports from the CIS region.
- The level of MT imports from China increased significantly on a quarterly basis (+37%), while imports from the rest of Asia fell slightly (-2%).



- As shown in the graph above, there is a visible small decrease in MT imports from Japan, which is undoubtedly still the main source market. However, as the graph shows, there was a sharp increase in MT imports from China, which was the second most important source of MT for the CECIMO countries in the third quarter of 2022.

CECIMO Trade Balance



- The graph above shows CECIMO's new trade balance estimates for 2022 (last updated in March 2023).
- As the chart shows, CECIMO expects total exports to increase by around 11% in 2022.
- We have significantly revised expectations for MT imports. With a strong forecast for MT consumption in Europe in 2022, total CECIMO MT imports are expected to grow at a slightly higher rate (+26%).

1.3 PRODUCTION (M)

Based on the results of the International MT Data Exchange in March 2023, we have not made any significant changes to the 2022 global MT production estimates. Based on that, global MT production is expected to increase by around 12% in 2022 and reach the record level of around EUR 81 billion.

We have slightly increased our CECIMO production estimate for 2022, but production growth is still expected to be slightly below global growth expectations, at around 11%. As a result, CECIMO's MT production is expected to reach a level of around 25 billion euros, representing around 31% of global MT production in 2022.

CECIMO MT Output Volumes & Yearly Growth Rate (2008-2022e)



Thanks to the significant orders backlogs and the very high level of capacity utilisation in recent months, it is expected that MT production will remain at a very stable level in 2023. In line with that, it is also worth noting that, despite the economic uncertainty, based on inputs from national associations in March, the main CECIMO producing countries have growth indications for 2023.

It is also important to highlight that an analysis of global economic trends shows that most forecasters have improved their expectations for global growth in 2023. Positive signals for European economies are linked to the reduced risk of gas shortages, fall in energy prices and easing of supply-side pressures.

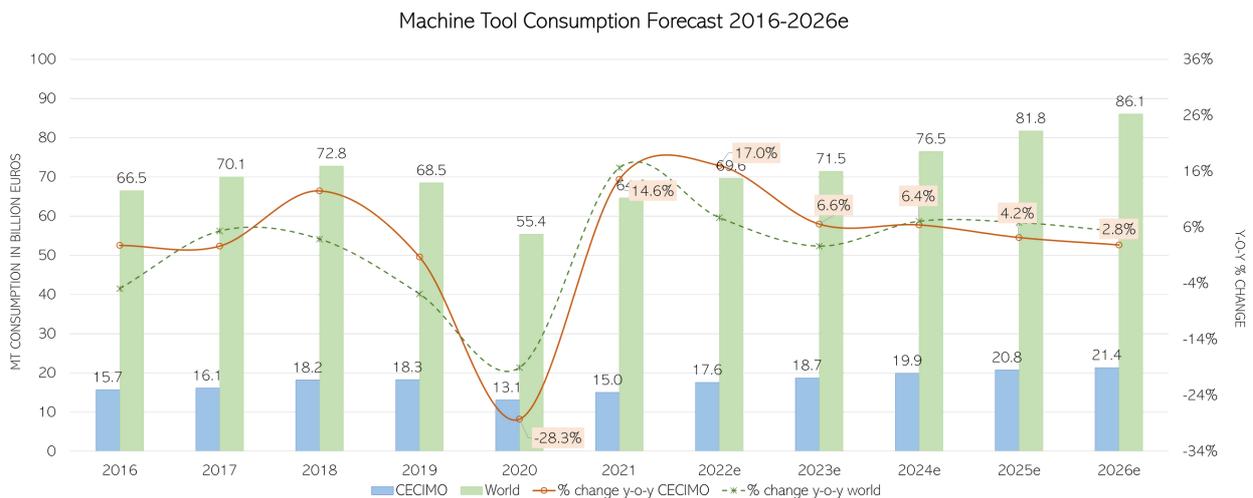


2. DEMAND

2.1 CECIMO CONSUMPTION (M)

Note: Consumption = Production + Imports - Exports

Based on the latest Oxford Economics Global Machine Tool Outlook report (October 2022), CECIMO Machine Tools consumption at the CECIMO level was expected to increase by approximately 17% in 2022. As the chart below shows, growth is expected to be more moderate in 2023 (6.6%).



Source: CECIMO & Oxford Economics

2021-2025 estimates are based on OE consumption estimates for Germany, Italy, Switzerland, Austria, Spain, Czech Republic, France, UK and Turkey (October 2022)

Note: Oxford Economics Spring 2023 forecast will be available in the upcoming Q1 2023 Economic and Statistical Toolbox.

2.2 HPO CECIMO8 ORDERS FORECAST (M)

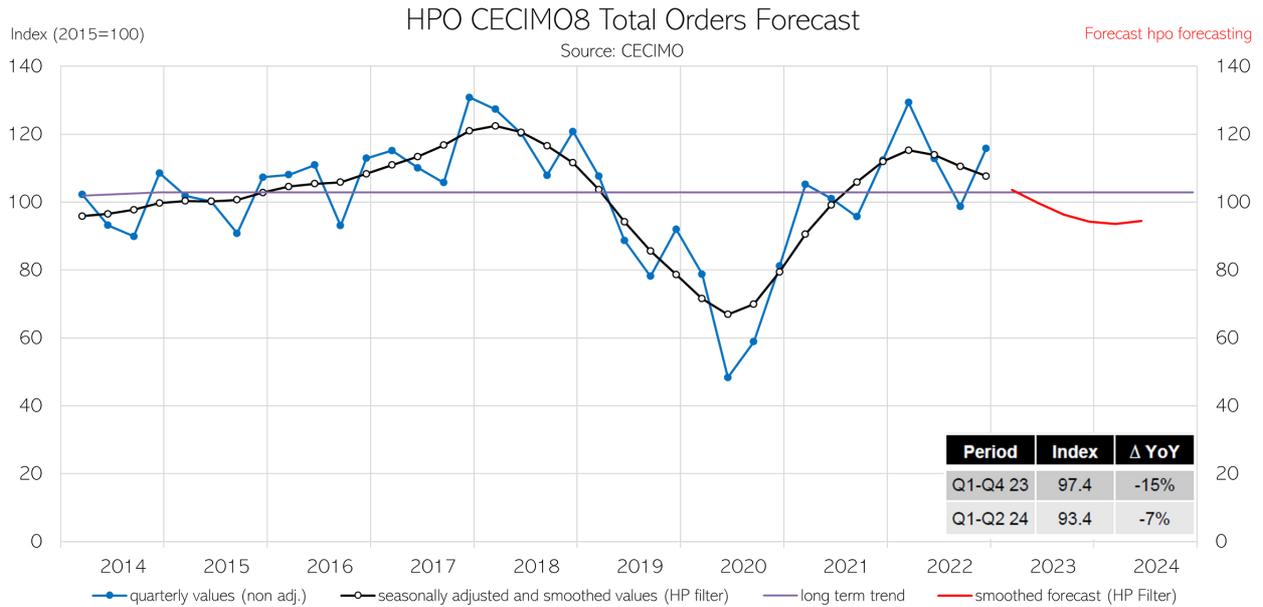
HPO's latest economic commentary provides an overview of the latest developments in the global economy and points to a slight improvement in business confidence. In light of the examples of upward GDP growth revisions, HPO commentary highlights three points raised during the recent World Economic Forum in Davos:

- A surprisingly robust real economy with unemployment rates remaining very low.
- Falling inflation rates in the US and Europe.
- China's surprise end to strict Corona measures at the end of 2022.

While the European Business Confidence Index (BCI) stabilised in the fourth quarter and has returned to the expansion zone, the decline in new orders in the mechanical engineering sector persisted (order intake by German mechanical engineering companies in the fourth quarter fell by 6% year-on-year in nominal terms and by as much as 14% when adjusted for inflation).

According to HPO, the change in China's Covid-19 policy at the end of 2022 is expected to lead to stronger Chinese and global GDP growth in 2023. Based on this, HPO points out that the International Monetary Fund raised its GDP forecast for China in 2023 to 5.2% at the end of January and estimates that China will account for around 20% of global economic growth this year.

CECIMO8 Orders Forecast

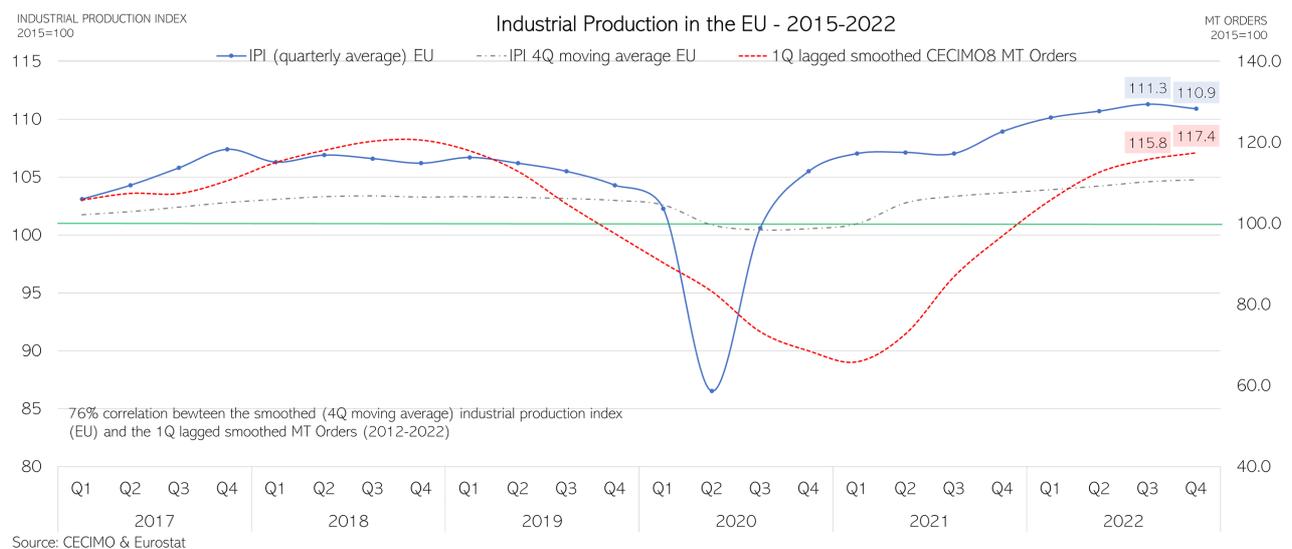


In line with the improvement in the European business confidence index, the most recent HPO CECIMO8 order expectations show an improvement in CECIMO8 orders in the last quarter of 2022, although HPO points out that this is largely due to seasonality.

While smoothed new orders declined less than expected in the last period of 2022, a downward trend is expected in the coming quarters. However, thanks to the improvement in global indicators, the downward trend is now expected to be less steep, but the bottom is expected to be reached in early 2024 before a new upturn.

As shown in the small table (the annual change in unadjusted CECIMO8 orders), annual growth in new orders is expected to be around -15% this year compared with 2022, a slightly better level than the previous forecast (-17%).

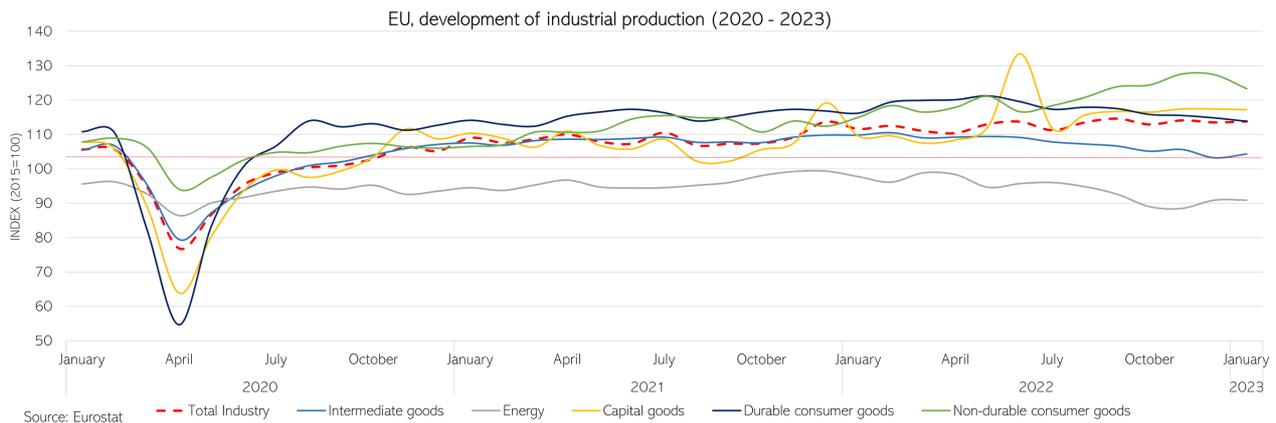
2.3 INDUSTRIAL PRODUCTION INDEX (M)



While the EU Industrial Production Index (IPI) shows a slight downward trend in the last period of 2022, it is worth noting that the level of the index remains above its historical trend. Analyzing this indicator is important because of its significant correlation with the level of CECIMO8 MT orders (4q moving average), as shown in the chart above.

While the average level of the euro area IPI remained almost unchanged in the fourth quarter compared with the previous quarter, the EU IPI fell slightly (by 0.4%) to 110.9 points in the fourth quarter.

Looking at the annual averages for the whole of 2022, the EU industrial production index recorded an increase of 3% compared to 2021, reaching a record high on an annual basis. Similar developments can be seen at the level of the euro area, where the annual increase in the IPI was around 2%.

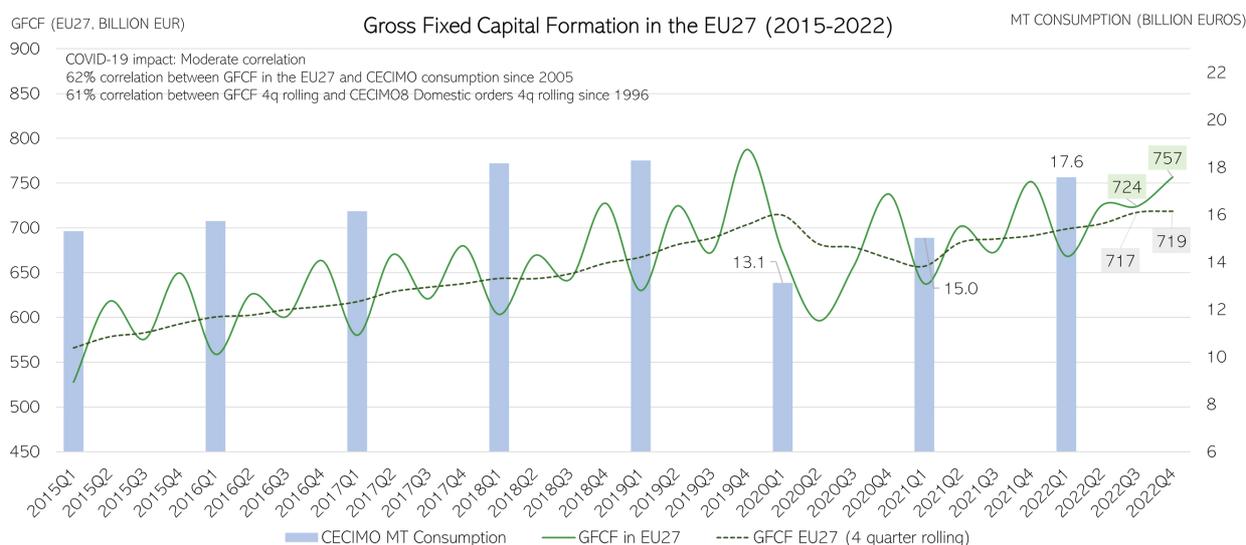


From a sectoral point of view, as in the previous quarter, the strongest recovery in the fourth quarter of 2022 was recorded in the non-durable consumer goods sector (+4.5%) on a quarterly basis. Durable consumer goods recorded a slight decline (-1.9%), while intermediate goods showed a downward trend (-2.4%). Unlike the previous quarter, the energy sector recorded a decline of about 5.3% in the last period of 2022.

3. INVESTMENT

3.1 GROSS FIXED CAPITAL FORMATION (M)

Gross fixed capital formation (GFCF), also called "investment", is defined as the acquisition of produced assets, including the production of such assets by producers for their own use, minus disposals. The relevant assets relate to assets that are intended for use in the production of other goods and services for a period of more than a year (OECD).



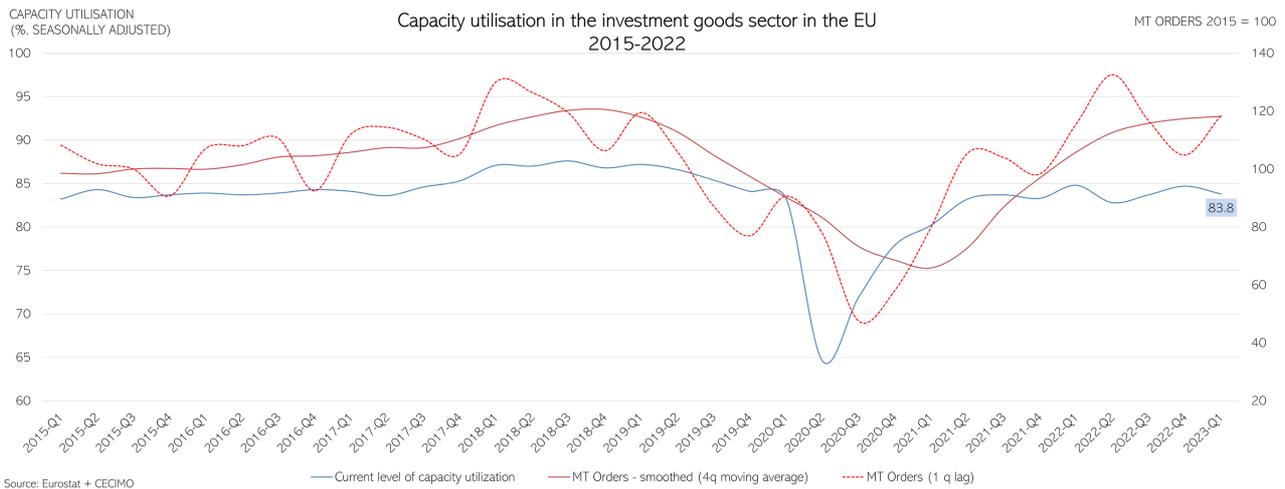
Considering the latest EU27 figures, Gross Fixed Capital Formation increased by 4.5% in Q4 2022 compared to the previous quarter value. While this level of investment was higher than the same period in 2021, it still fell short of the record high seen in the final period of 2019. In absolute terms, investments amounted to 756.7 billion euro in the fourth quarter of 2022, a slightly higher value (+0.7%) if we consider the 751.6 billion euro registered in the same period of the previous year.

Although the investment path is expected to remain stable, it is important to consider the negative impact of tightening monetary policy on corporate financing. However, an easing of energy price inflation and supply-side issues, combined with high order books at European manufacturers, are expected to drive investment in 2023. Of course, it is important to highlight new opportunities and investments related to the green & digital transition, and EU policies aimed at improving the resilience of EU supply chains (Chips Act, Raw Materials Act) are expected to boost investment in the EU in the coming years.

3.2 CAPACITY UTILISATION AND PRODUCTION CAPACITY (M)

Methodological Note: The dates in this section refers to when the results were published; so, the Q1-2023 figures were published in Q1-2023 but reflect the position at the end of the previous quarter when the data collection took place (Q4 2022). We will refer to the date of publication in this section but please bear in mind this adjustment.

The latest capacity utilisation data for the EU's capital goods sector show a slight decrease in the first quarter of 2023, with a fall of 1.1% on a quarterly basis. As a result, this indicator stands at 83.8 points and is still above the EU's long-term average between 2011 and 2019 (83.5).



At national level, as the table below shows, the highest levels of capacity utilisation were recorded in Switzerland, Austria and Germany. While capacity utilisation improved in the Czech Republic and Austria, it remained largely unchanged in the United Kingdom and Switzerland. Germany, Italy, France and Spain recorded slight decreases.

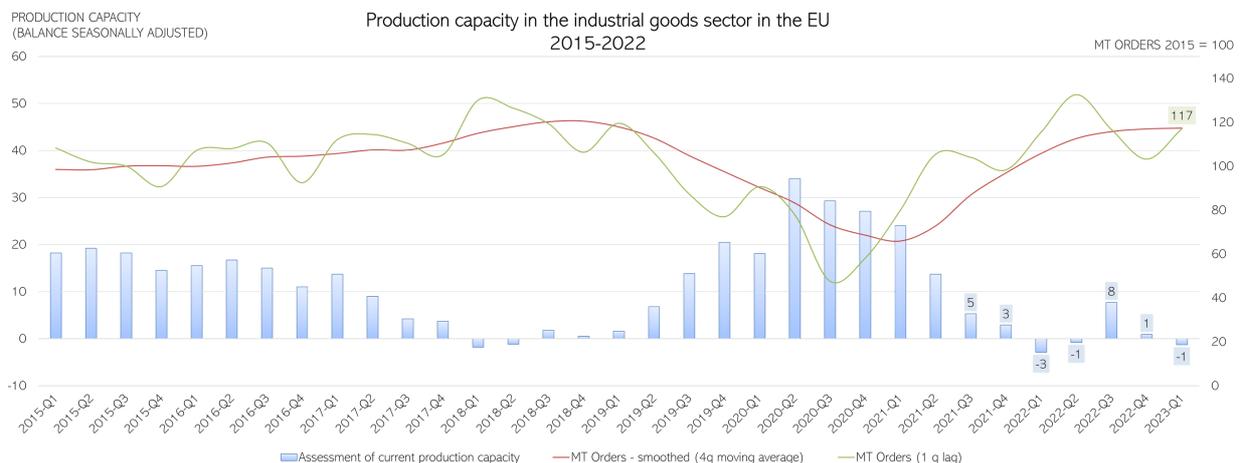
Capacity Utilisation (% of total capacity)

	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
Austria	83.2	86.2	90.7	87.7	87.3	87.3	88.3	86.3	88.9
Czech Republic	87.4	87.2	92	63.2	81.1	78.3	81.0	75.4	80.6
France	77.5	78.1	80.7	80.3	81.7	80.4	80.0	80.9	79.9
Germany	82.1	87.5	85.2	85.3	89.6	83.7	86.0	87.9	87.4
Italy	77.3	79	81.1	79.9	80.3	81.3	80.1	79.7	79.4
Spain	82.3	80.9	82.6	82.0	80.7	85.6	85.3	86.1	84.4
Switzerland	78.3	81.7	85.6	87.2	89.8	91.9	90.3	89.5	89.6
United Kingdom	75.0	79.0	82.0	81.0	83.0	82.0	83.0	80.0	80.0

Source: Eurostat, MTA, SWISSMEM

Note: To track production capacity, business managers are asked to assess their current levels of production as sufficient or not, considering the changes in the order book and demand of capital goods.

In the first quarter of 2023, the level of spare capacity in the EU's industrial goods sector, as shown in the chart below, reached below zero levels again. This level of spare capacity is in line with current trends in CECIMO8 total orders in the last period of 2022, and many of our MT manufacturers confirmed in the latest Business Climate Barometer survey that they are working above their capacity. Of course, it is important to note that many manufacturers, including MT manufacturers, are still dealing with order backlogs. It is also worth noting that negative spare capacity is also a positive signal for machine tool demand, as it could lead to new investments in many sectors in the EU.



As in the previous quarter, the level of spare capacity in Germany, Spain and France fell significantly, contributing to the decline in this indicator at the EU level. While these countries face production challenges with spare capacity levels below zero, spare capacity levels increased in the Czech Republic, Austria and Italy.

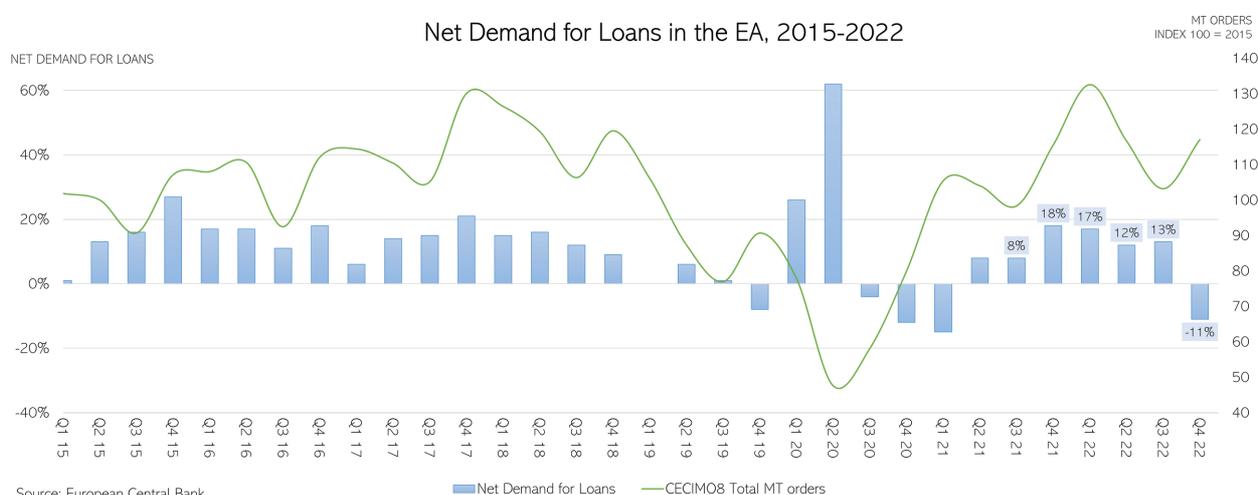
Production Capacity (balance in %)

	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022	Q1 2023
Austria	22	13.2	-3.6	-3.3	-5.6	-2.2	-8.5	6.3	9.9
Czech Republic	13.1	9.1	9.3	12	9.1	49.2	9.1	10.3	44.1
France	33	32.7	22.2	17.5	-4.1	-0.7	9.5	-14.9	-21.4
Germany	32.4	7.8	3.1	-8	-6.5	-5.3	14.3	4.6	-5.0
Italy	27	24.9	20.5	15.9	16.4	14.2	12.8	12.9	16.1
Spain	-0.8	13.1	-14.3	16.8	-19.1	-6.6	2.2	-10.2	-13.2

Source: Eurostat

3.3 BANK LENDING SURVEY (M)

Note: The results reported in the January 2023 Bank Lending Survey (BLS) relate to changes observed in the fourth quarter of 2022 and expectations for the first quarter of 2023.



Source: European Central Bank

- Credit standards** – euro area banks have further tightened their credit standards for loans or credit lines to enterprises in the fourth quarter of 2022 (26%, after 19% in the third quarter of 2022). As reported in the survey results, the net tightening of credit standards was broadly in line with banks' expectations from the previous quarter. The main drivers were banks' higher perceived risks related to the economic outlook, industry or firm-specific situation and banks' declining risk tolerance. It is also important to note that credit standards for loans to enterprises tightened in all four of the largest euro area countries (Germany, Spain, Italy and France). Looking ahead, euro area banks expect a similar net tightening of credit standards for loans to enterprises as in the current quarter (24%) in the first quarter of 2023.
- Banks' overall terms and conditions** for new loans to enterprises tightened substantially in the last quarter of 2022 (net percentage of 39%, after 19%). According to ECB, the tightening was mainly due to a widening of margins (defined as the spread over relevant market reference rates) on both average (net percentage of 21%) and riskier (net percentage of 20%) loans, which was much more pronounced than in the previous quarter. As with credit standards, the tightening occurred in all four of the largest euro area countries.
- After steady increase in last quarters, net demand for loans to decreased in the fourth quarter of 2022** (net percentage of banks of -11%, after 13% in the third quarter of 2022). This is the first net decline in demand since the beginning of 2021 (and more than expected in the previous survey). Demand for loans fell slightly more for SMEs than for large enterprises. While the demand for short-term loans remained almost unchanged (-1%), the demand for long-term loans fell significantly (-19%).

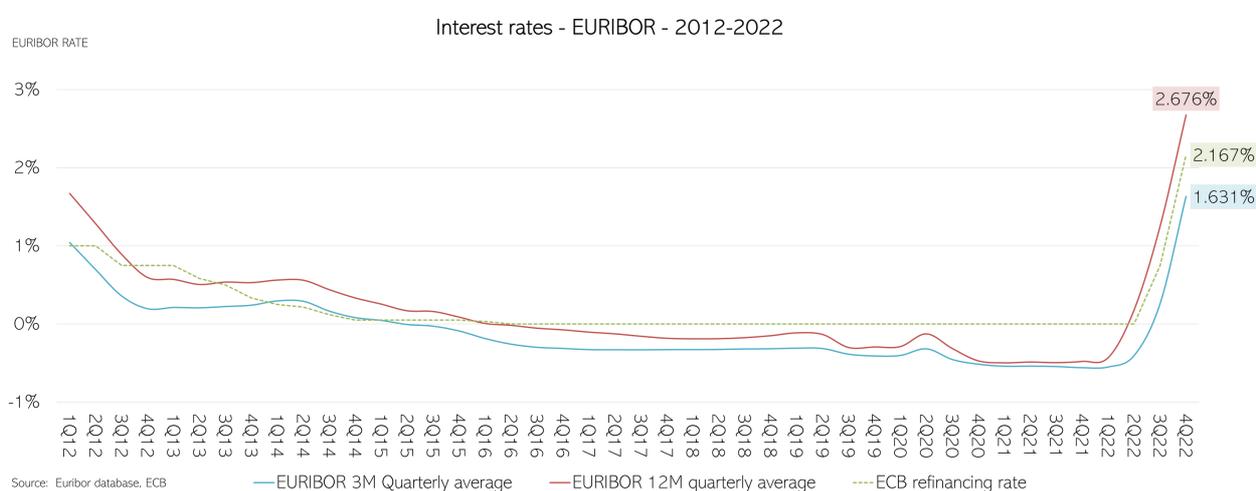
However, if we look at the largest euro area countries, banks reported a net decrease in demand for loans to firms in Germany, while loan demand increased in Spain and France and was unchanged in Italy.

- **Looking ahead to the next quarter (Q1 2023)**, euro area banks expect net demand for loans to enterprises to fall again, both for SMEs and for large enterprises (-15%), mainly as a result of the expected strong decline in demand for long-term loans. The decline in loan demand is expected to be more pronounced for large enterprises (-15%) than for SMEs (-8%).

3.4 EURIBOR (M)

In line with the measures taken by the ECB to address inflationary pressures, the ECB's refinancing rate rose to 2.00% in October and 2.50% in December. On average, this means that in the last quarter of 2022, the refinancing rate was around 2.17%. The EURIBOR 3-month average rate increased to 1.631%, while the 12-month average reached the level of 2.676%.

As already mentioned, it is important to point out that restrictive monetary policies lead to less favorable financing opportunities, which is also reflected in the decline in loans to companies (especially long-term loans), as mentioned in the previous chapter. Therefore, rising interest rates are expected to have a positive effect on inflation, but they are also expected to impact negatively on investment.



More recently (February 2023), the ECB decided to raise the refinancing rate to 3.00% and later to 3.50% (March), largely on the basis that inflation would remain too high for too long. Looking ahead, the ECB has not announced any further refinancing rate increase.

As mentioned in the previous report, the ECB stopped net asset purchases under the Asset Purchase Programme (APP) on 1 July 2022. From this date, only full reinvestments of redemptions between July 2022 and February 2023 have been made. In terms of new developments, based on decisions from December 2022, the APP portfolio is expected to decline from the beginning of March 2023, as the Eurosystem will no longer reinvest all the principal payments from maturing securities. This effectively means that only partial reinvestments of redemptions from the beginning of March 2023. The decline will amount to €15 billion per month on average until the end of June 2023 and its subsequent pace will be determined over time. It is also worth noting that on 2 February 2023, the Governing Council decided that during the period of partial reinvestment the Eurosystem's corporate bond purchases will be tilted more strongly towards issuers with a better climate performance.

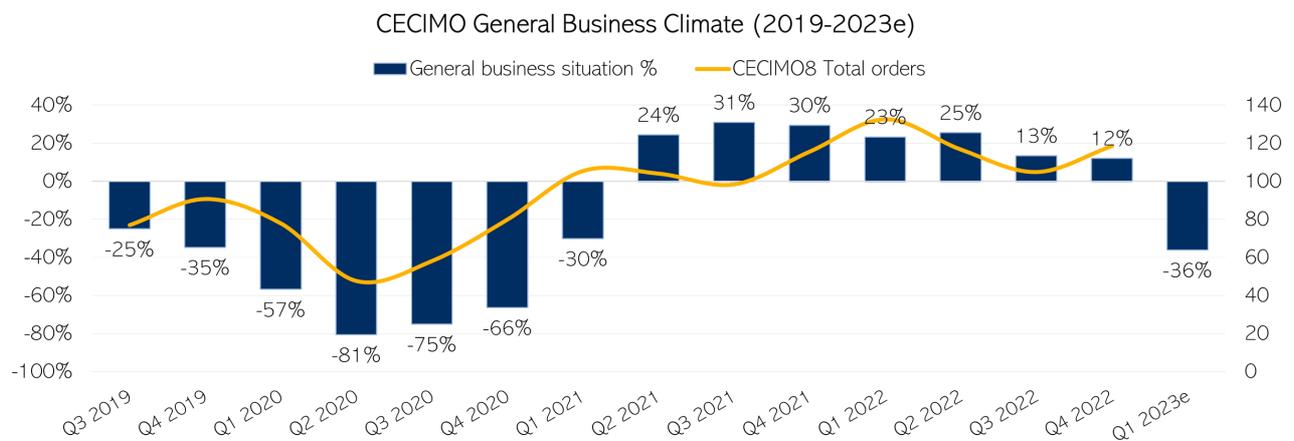
4. BUSINESS CLIMATE

4.1 CECIMO BUSINESS CLIMATE BAROMETER (M)

The Business Climate Barometer (BCB) is a quarterly survey that assesses CECIMO-based companies' current business sentiment and expectations for the next quarter.

Methodology: CECIMO & National association surveyed individual companies and assessed their current business climate and their expectations (next q) in relation to demand, domestic production, export sales and employment. The responses of the CECIMO BCB are analysed as the difference (net percentage) between the share of companies reporting an increase/decrease in their business activities. The results were weighted by the share of national production in 2015 among participating CECIMO countries.

Note: Q4 2022 results are based on the responses of the following CECIMO countries: Austria, Switzerland, Germany, the United Kingdom and Italy.



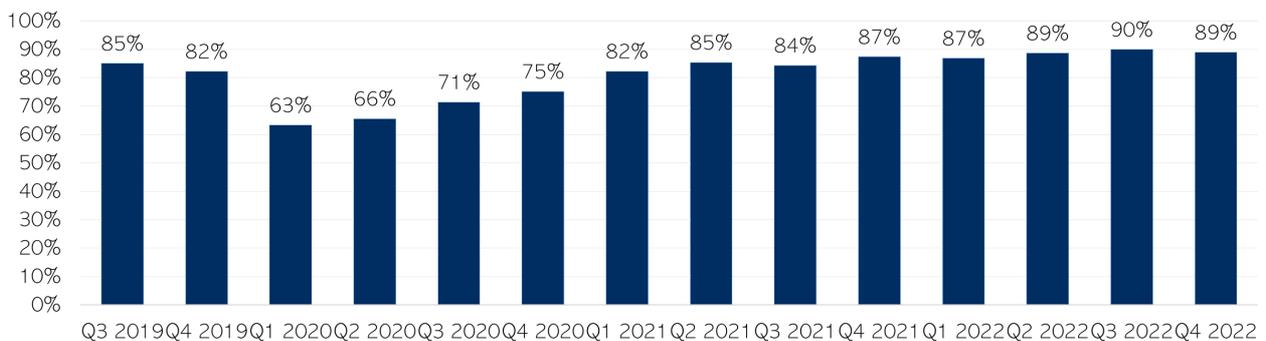
Source: CECIMO & National associations | e - expectations

% = weighted average of the national balances (increase-decrease), in %

According to the latest results of the CECIMO Business Climate Barometer, our machine tool manufacturers have expressed a positive business climate in the final quarter of 2022, with a net positive balance averaging 12%. This level is almost the same as in the third quarter, but significantly better than they expected in the previous reporting period. However, as the graph above shows, expectations for the business climate in the first quarter of 2023 are quite negative (-36%).

In the fourth quarter of 2022, the average operating rate of CECIMO MT producers remained strong at 89%, slightly lower than in the previous reference period. However, this level of the operating rate is higher than the average for 2019 and is in line with the high order backlogs.

CECIMO Average rate of operation (2019-2022)



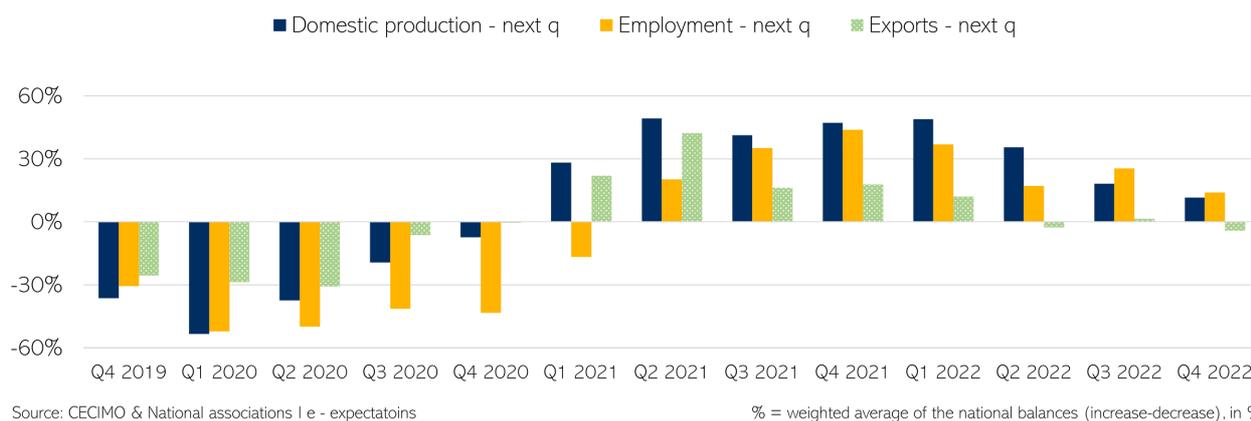
Source: CECIMO & National associations

While the expectations for the general business situation are quite negative, in line with the global economic challenges, the survey results show that the managers' expectations for domestic production are slightly lower, but still positive (+12% compared to +18% in the previous period).

With regard to other indicators, it is important to note that managers' employment expectations are slightly lower, but still positive, as shown in the graph below (+14%). In view of the lower external demand already mentioned in the section of foreign orders, expectations for exports turned negative (-4%).

Among the main factors limiting their production, managers were again most concerned about shortages of materials or raw materials, labour shortages and lack of production capacity.

Expectation in the next quarter: Domestic production, Employment, Exports



4.2 PURCHASING MANAGERS INDEX (M)

The IHS Markit PMI® is compiled by IHS Markit from responses to questionnaires sent to purchasing managers in a panel of around 300 manufacturers Global Manufacturing PMI.

Note: The most recent data (February) were collected in mid-February 2023.

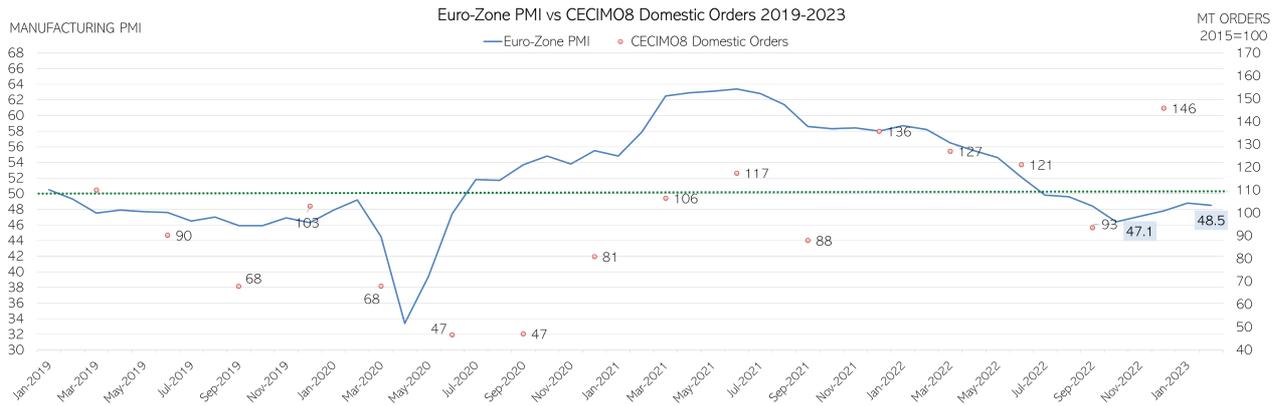


After ten months of decline, the J.P. Morgan Global Manufacturing Purchasing Managers' Index (PMI) finally improved in the first two months of 2023. The global PMI rose to 50.0 in February from 49.1 in January, driven by the positive impact of increased production and employment and slower rates of decline in new business and stocks of purchases.

According to the survey results, the upturn in production volumes was led by the Asia region (excluding Japan), with Thailand, India and the Philippines recording the fastest rates of growth. As noted in the latest press releases, the whole region benefited from the reopening process in China. On the other hand, performance in North America, Europe and South America remained significantly weaker than in Asia.

It is worth noting that average supplier lead times shortened for the first time since July 2019, suggesting an easing of supply chain constraints, and positive developments are also evident in input price inflation, which eased to a 28-month low in February.

Eurozone Manufacturing PMI

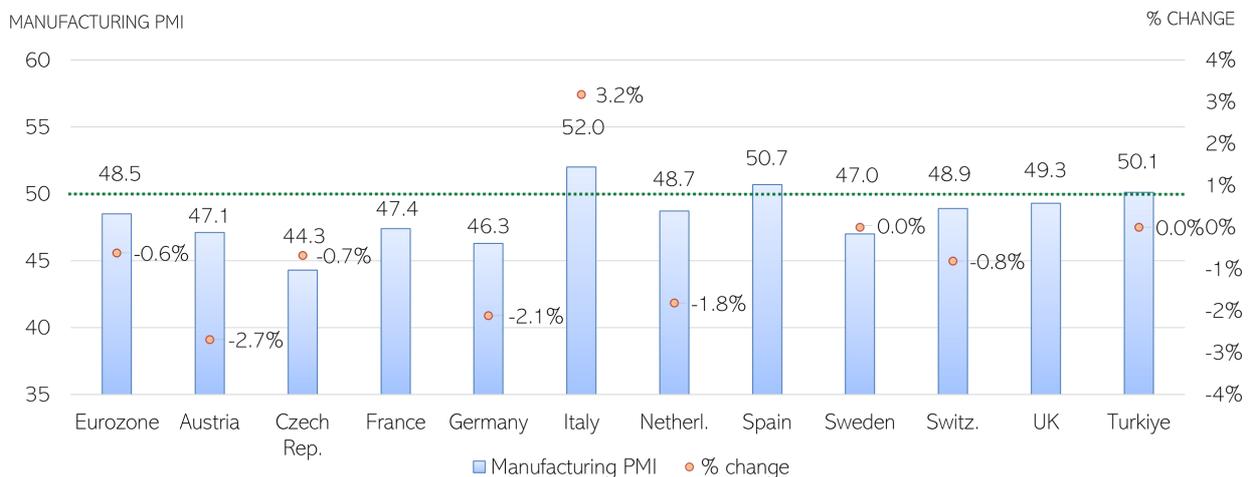


While the euro area manufacturing PMI has continued its upward trend since November, a slight deterioration was observed in February. After improving in January, the index remained almost unchanged in February (48.5) and remained in the unfavourable zone, mainly due to the decline in new orders (especially export orders).

However, it is important to stress that production volumes in the euro area's manufacturing sector broadly stabilised in February, ending an eight-month sequence of output contraction. Moreover, supply-side problems have continued to ease, and there are also positive developments in the form of lower energy prices. These developments are, of course, helping to reduce inflationary pressures and are having a positive impact on slower increase in input costs.

It is also important to highlight the positive developments in hiring, with employment rising moderately and at the fastest pace in four months and looking ahead, euro-area manufacturers were slightly more optimistic about the industry's prospects for the year ahead than in January.

PMI & monthly % change - Europe - February 2023



Austria

Looking at the last quarter of 2022, it can be seen that the Austrian PMI level decreased compared to the previous quarter and on an annual basis (significantly below the Q4 2021 level). In recent months, a slight improvement can be seen in January 2023, but due to a weak trend in new orders, lower purchasing activity and a decline in production, the PMI fell again in February, reaching 47.1 points. Positive developments can be seen in the easing of input price pressures, but firms' expectations about output levels for the coming period weakened in February.

Czech Republic

Similar to Austria, the Czech PMI fell slightly from 44.6 in January to 44.3 in February. This is followed by a rather negative development in 2022, but a slight upturn in December and January 2023. Among other things, Czech manufacturers cited declines in production and new orders (both domestic and export) as the main reasons for the worsening business climate. While expectations for the coming period are not as positive, it is important to note that manufacturers also expressed positive developments with regard to the easing of inflationary pressures.

Germany

After three months of improvement and a four-month high in January, the German PMI index and the manufacturing sector recorded a slight decline in February. While the level of the PMI index fell to 46.3 points in February, still in the unfavourable zone, German manufacturers reported positive signs of an easing of bottlenecks in the supply chains. However, while the easing of supply-side problems improved production levels, manufacturers reported lower levels of new orders, which weighed most heavily on the index. It is important to highlight these employment figures and the improvement in manufacturers' expectations for future production levels.

Spain

While the average level of the Spanish PMI fell in the fourth quarter compared with the previous quarter, a look at the last few months reveals an improvement in the Spanish manufacturing sector. Thanks to growth in manufacturing output, the Spanish PMI reached the favourable zone, registering 50.7 in February, up from 48.4 in January. This is the first time since June 2022 that the index has reached the favourable zone. However, it is important to note that the situation with new orders is still negative, but with orders falling at the lowest rate since June 2022. As production continued to grow, Spanish manufacturers remained optimistic regarding future output levels.

France

After a slight improvement in November and December and reaching the favourable zone in January 2023, the French manufacturing sector lost momentum in February. After registering 50.5 in January, the PMI fell to 47.4 in February, mainly as a result of sharp declines in new orders and output. In line with the positive signals expressed by managers regarding the easing of inflation, which may also be reflected in falling energy and steel prices, French manufacturers expressed a more optimistic scenario for future production compared to the previous month.

Italy

After the Italian PMI index reached the favourable zone in January 2023 for the first time since June 2022, February brings further improvement in the Italian manufacturing sector. Thanks to the market rise in output, new orders and improved employment numbers, the Italian PMI increased from 50.4 in January to 52.0 in February signalling a solid improvement in operating conditions. It is also important to note that manufacturers expressed optimism about easing cost pressures (with energy and general commodity prices reported to be lower than at the beginning of the year) and more positive production expectations.

Netherlands

After almost reaching the 50.0 mark, the Dutch PMI fell again in February 2023, remaining in the unfavourable zone for the sixth consecutive month. The decline to 48.7 in February from 49.6 in January was mainly due to a fall in new orders (domestic and foreign) and new purchases, while output levels and employment registered softer growth. However, it is important to note that manufacturers' views on cost pressures were more positive and firms were optimistic about increasing output levels over the next 12 months.

Sweden

After a slight improvement in January, the Swedish PMI remained unchanged at 47 index points in February 2023, marking the seventh consecutive month of contraction, mainly due to a sharp deterioration in delivery times. While managers also reported a decline in the level of employment in February, there was a positive development in the level of new orders, although this was still outside the favourable range. Similar to other countries, managers expressed a decline in commodity and input prices, thanks to lower global commodity prices and better supply chain operations.

Switzerland

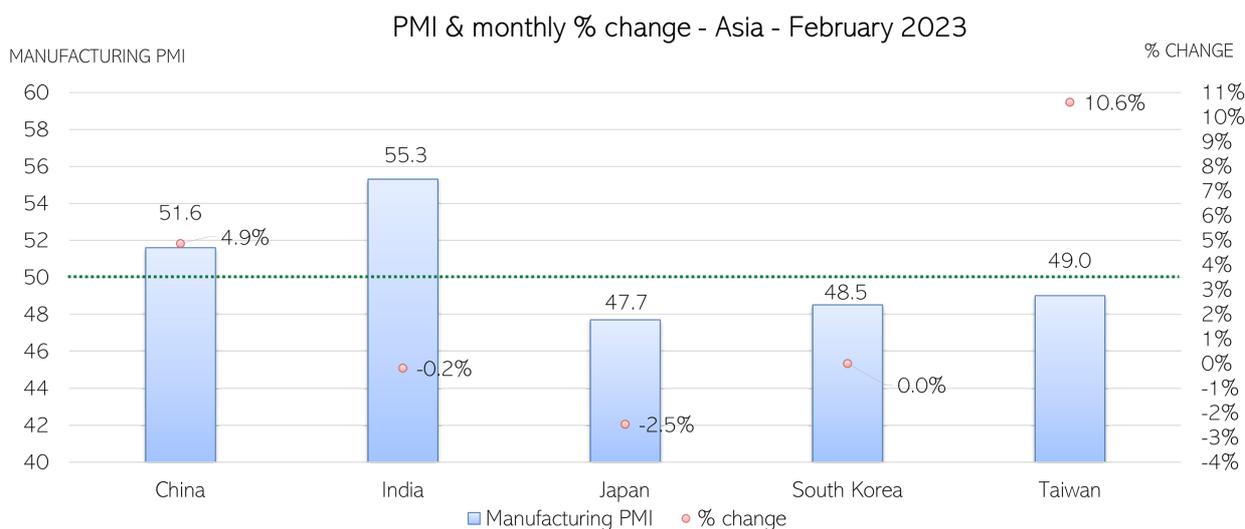
Based on the latest available data, the Swiss PMI manufacturing index came in at 48.9 in February, down from January's 49.3. February's result marked the weakest reading since June 2020. The decline was driven by weaker readings for purchasing activities and employment, while output and order books improved at a slower pace. However, it is important to highlight a positive development in terms of easing price increases and delivery times.

Türkiye

According to the latest IHS Markit press releases, the February earthquake had an impact on the manufacturing sector in Türkiye. Although production lines were particularly affected, the Türkiye PMI index remained slightly above the 50.0 no-change mark (50.1). While employment improved, firms reported that both total new orders and new export business weakened in February. It is also worth noting that supply-side problems, mainly caused by the earthquake, have affected production levels, with some firms reporting production stoppages.

United Kingdom

As a result of easing supply-side pressures, UK manufacturing output rose for the first time in eight months. As a result, the UK PMI registered 49.3 in February, up from 47.0 in January and the highest level since July 2022. While the level of new orders fell further in February, the decline was the slowest since early 2022. Regarding export orders, some firms expressed positive developments following the recent reopening of China, which should have a positive impact on overseas demand. Thanks to expectations of improved economic conditions and fewer supply chain problems, UK firms reported a more optimistic outlook for the period ahead.



China

Thanks to the reopening decisions in December, Chinese manufacturers reported a renewed and solid upturn in both output and new orders in February 2023 as customer demand picked up. As a result, the Chinese PMI rose from 49.2 in January to 51.6 in February, signalling an improvement in the Chinese manufacturing sector. Importantly, employment and purchasing activity also picked up, while pressure on supply chains eased and delivery times improved significantly. As a result of the positive business sentiment, expectations for output levels in the period ahead improved to the highest level since March 2021.

India

After a quarterly increase in the last quarter of 2022 and a very high level in December 2022, the Indian PMI declined slightly in the following two months, reaching a level of 55.3 in February. Despite the slight decline in the index, it is important to note that the Indian PMI remained above the no change mark (50.0), with production levels and new orders increasing on a stable path. As reported by firms, the domestic market was the main source of new business growth in February. While managers reported an increase in input prices, it is worth noting that business confidence continued to improve in February.

Japan

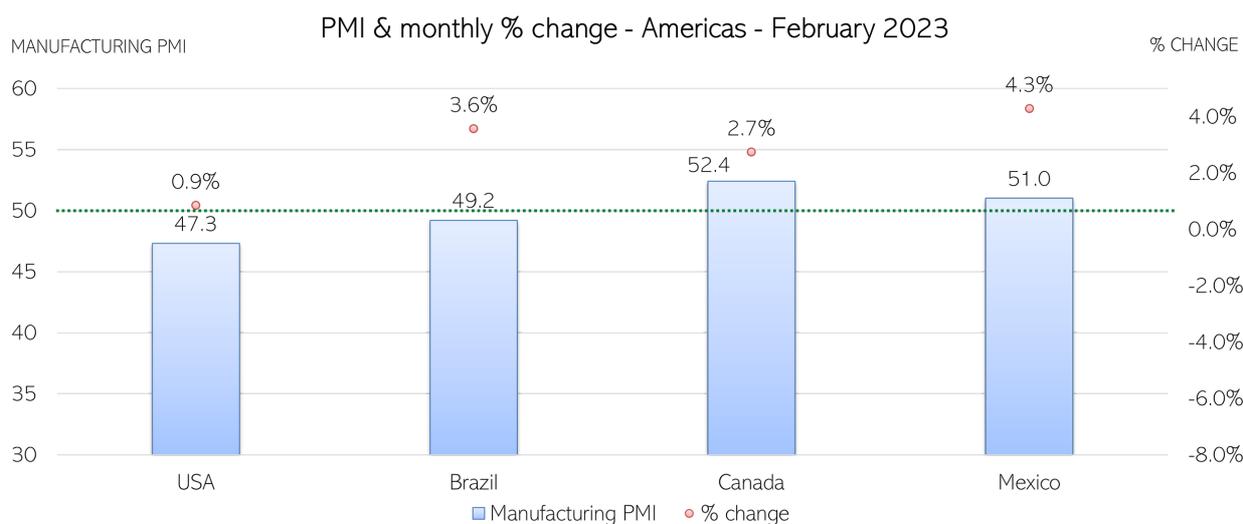
While the Japanese PMI index stabilised in December 2022 and January 2023, February brings a new decline, indicating a deterioration in the manufacturing climate in Japan. The PMI index fell from 48.9 in January to 47.7 in February, as output and new orders fell sharply. Firms reported that the decline in new domestic and export orders was mainly due to weak domestic and global economic conditions. Despite lower demand, managers remained optimistic about output growth over the next 12 months.

South Korea

South Korea's manufacturing PMI remains in the unfavourable zone, despite a slight increase in November 2022. At 48.5 in February, it remained unchanged from the January 2023 level, as both output and new orders continued to contract. On a more positive note, firms reported softer price increases in the middle of the first quarter of 2023 and business confidence strengthened in February, in line with hopes for domestic and global economic recovery.

Taiwan

Following very low PMI readings in the last quarter of 2022, the latest data pointed to a much milder deterioration in business conditions in Taiwan's manufacturing sector in February. At 49.0 in February, Taiwan's manufacturing PMI rose from 44.3 in January, almost reaching the no-change mark. While employment fell only slightly, it is positive that firms also reported an easing of supply-side pressures. Although firms remained fairly negative about output over the next 12 months, the level of negative sentiment in February was the lowest since July 2022.



United States

The deterioration in the US manufacturing sector continued in recent months, with the PMI falling from 47.8 in January to 47.3 in February. The deterioration was mainly driven by further falls in production and new orders, although the pace of decline was the slowest in three months. While input prices continued to rise in February, there were positive developments in relation to supplier lead times, which were significantly reduced, suggesting an easing of supply-side problems. It is also worth noting that, despite the fall in new orders, manufacturers reported an increase in employment and expectations for production over the next 12 months remained positive.

Canada

While the average level of the Canadian PMI remained in the unfavourable zone in the last quarter of 2022, the beginning of 2023 brings an improvement. The latest survey results show that Canadian manufacturers have reported an improvement in output and new orders. As a result, the Canadian manufacturing PMI rose from 51.0 in January to 52.4 in February, the highest level since last July. As in most countries, inflationary pressures eased in line with the improving supply-side situation.

Mexico

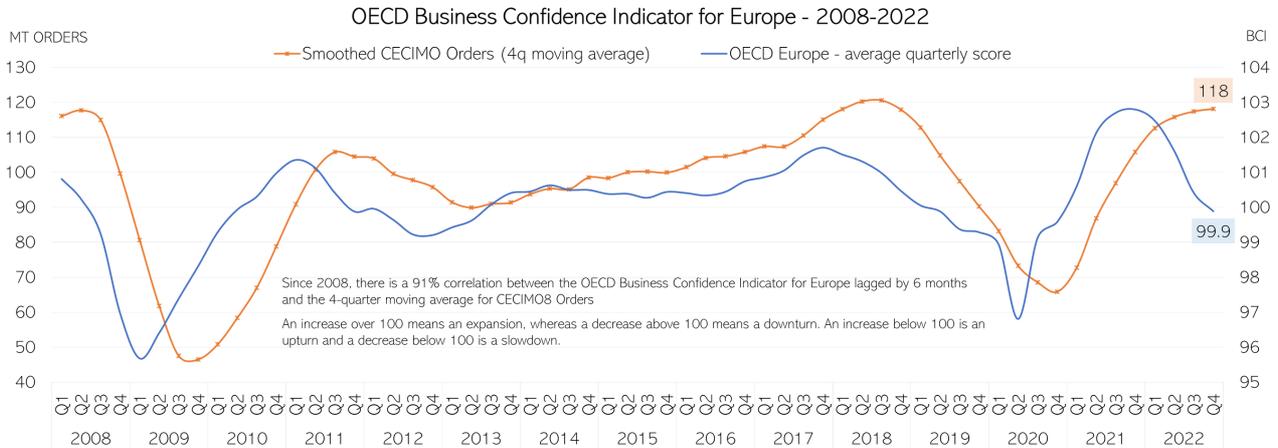
The Mexican PMI manufacturing index entered contraction territory in January 2023, following positive developments in the last quarter of 2022. However, the latest data for February show a renewed expansion in order books, while manufacturing output fell only marginally compared with January. As result, the Mexican PMI rose from 48.9 in January to 51.0 in February. However, it is important to note that labour shortage, inflation and the war in Ukraine dampened business confidence among Mexican manufacturers to a six-month low in February.

Brazil

Brazil's manufacturing sector has been stuck in contraction since October 2022, although the situation improved significantly in early 2023. The latest PMI data show an improvement in the index from 47.5 in January to 49.2 in February, mainly thanks to a smaller decline in new orders and improved business sentiment. Concerns expressed by Brazilian manufacturers in February were related to a significant decline in foreign demand and challenges in terms of price competitiveness in international markets. Looking ahead to the next 12 months, manufacturers were optimistic, expecting demand to improve and support output growth.

4.3 OECD BUSINESS CLIMATE INDICATOR (M)

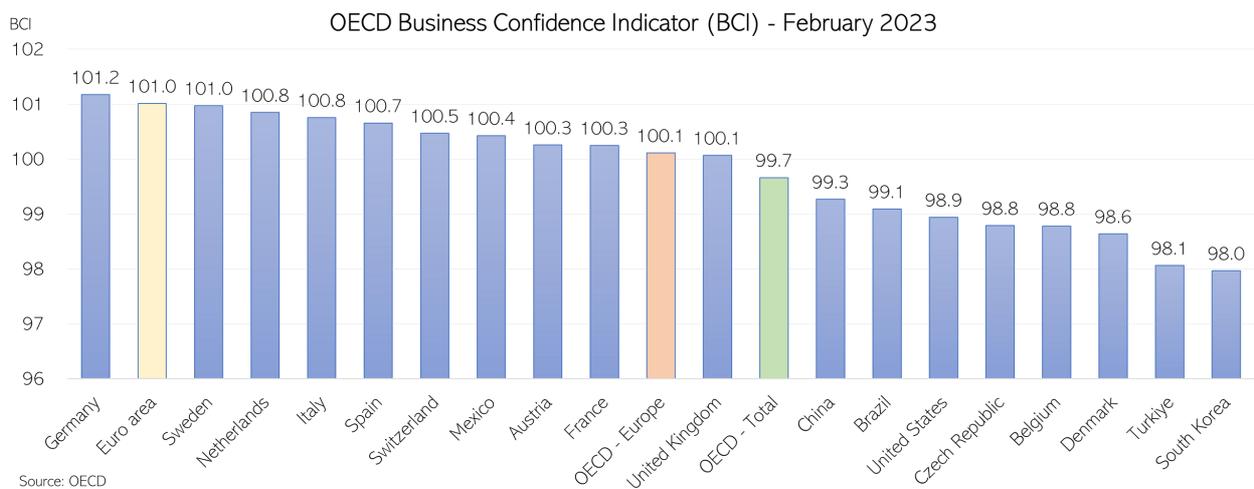
The Business Confidence Indicator (BCI) can be used to monitor output growth and predict turning points for economic activity. Numbers above 100 suggest an increased confidence in near future business performance, and numbers below 100 indicate pessimism towards future performance.



Following a downward trend in recent quarters, the European BCI fell below 100 points for the first time since the fourth quarter of 2020. While the European BCI fell by 0.5% from 100.4 to 99.9 points in the fourth quarter, the business confidence indicator for the euro area (19 countries) remained slightly higher at 101 points. The latest figures for January and February show a slight improvement, with the European BCI already above 100.

Despite still high geopolitical uncertainty, positive developments in European energy prices, China's reopening and the upward revision of most European and global growth forecasts for 2023, the BCI is expected to improve further in the coming months. As the latest figures show, the euro area index is expected to remain slightly higher than the European BCI.

The OECD Total BCI also continued to decline compared to the previous reporting period, reaching 99.6 in the fourth quarter of 2022. However, data for February 2023 (note that the previous graph refers to quarterly averages) also show a slight improvement in the index, with the OECD total aggregate reaching 99.7 points (still in unfavorable zone).



Country-specific BCI readings for February 2023 (latest available data) show:

- Among the European markets, only Germany (101.2) recorded a BCI level above the euro-zone average. Sweden (101.0), the Netherlands (100.8), Italy (100.8), Spain (100.7), Switzerland (100.5), Austria (100.3) and France (100.3) recorded BCI levels above the European and total OECD BCI, while the United Kingdom recorded a level equal to the European average.
- Among the other CECIMO countries, the Czech Republic, Belgium, Denmark and Turkey recorded BCI levels below the OECD average and below 100 points in February, indicating an unfavorable business climate for the coming period.
- Among the Asian markets (available data), the latest data show that South Korea and China remain in the unfavorable zone.
- In the Americas region, Mexico's BCI improved and reached the favorable zone (100.4), while Brazil and the United States' BCIs remained below 100.0 points.
- Among all countries, Germany and Sweden recorded the highest BCI scores in November, followed by the Netherlands, Italy and Spain. As can be seen from the graph, it is important to note that euro area countries still have, on average, higher BCI levels than the rest of the world.



5. GENERAL INDICATORS

5.1 GDP (M)



Tracking the trend of the percentage change in GDP, the following points show the most recent quarterly developments and forecasts for 2022, 2023 and 2024.

- EU GDP grew by 1.8% in the last quarter of 2022 compared with the same period of the previous year. Compared to the previous quarter (Q3 2022), European GDP growth stagnated, while the euro area showed a slight improvement (+0.1%). On an annual basis, EU GDP growth in 2022 would be around 3.5% compared to 2021. It is also worth noting that the European Commission has recently revised upwards its forecast for 2023, and the latest data show that EU GDP is expected to grow by around 0.8% in 2023 and 1.6% in 2024 (y/y).
- China's economy continued to recover in the fourth quarter. GDP growth in Q4 was around 2.9% (compared with the same quarter of 2021). For the full year, Chinese GDP growth in 2022 was estimated at around 3%. The latest OECD forecast (January 2023) shows revised upward estimates, mainly driven by China's reopening decisions in December, and the Chinese economy is now expected to grow by around 5.3% in 2023 and 4.9% in 2024.
- US GDP in the final quarter of 2022 was around 1% higher than in the final quarter of 2021, and 0.7% higher than in the previous quarter. This brings annual GDP growth for 2022 as a whole to around 2.2%. According to the OECD's quarterly GDP forecast, the US economy is expected to grow by 0.3% in 2023 and 1.6% in 2024.
- In the fourth quarter of 2022, the Japanese economy recorded GDP growth of 0.4% compared to the same quarter of 2021, unchanged from the previous quarter. The Japanese economy is expected to grow by 1.2% in 2023 and by 0.7% in 2024, based on the averages of the OECD's quarterly GDP forecasts.

European Commission's Forecast - Winter 2023:

The new European Commission forecast (February 2023) presents revised GDP forecasts in the light of reduced gas shortage risks, easing supply-side problems but still very high inflationary pressures. According to the report, real GDP in the EU will be around 3.5% in 2022, with further improvements expected in 2023 (+0.8%) and 2024 (+1.6%).

As highlighted in the report, the diversification of supply sources and the sharp fall in gas consumption have brought the price of gas in the EU below pre-war levels, which has also had a positive impact on inflation. While gas prices have stabilised, it is important to note that the EU's ban on seaborne crude oil imports from Russia and the oil price cap have not led to additional tightness in the international crude oil market, but it is important to highlight that pressure could come from refined products.

On the business side, high-capacity utilisation levels and high employment continues to keep the labour market performing very strongly, with the EU unemployment rate remaining at its all-time low of 6.1% in December.

Positive developments such as the easing of supply chain disruptions and the improvement in economic sentiment in recent months should prevent a contraction in the first quarter of 2023. However, it is important to note that while inflation is moderating, firms are expected to face high input costs in the first half of 2023. Moreover, monetary tightening is expected to be stronger than previously thought, which could affect more interest-sensitive sectors and weigh on business investment.

Looking at the global outlook, advanced economies are projected to slow significantly in 2023, while emerging markets growth has been revised up for China thanks to the COVID-19 policy change. Growth in emerging markets other than China is projected to slow somewhat in 2023 before picking up slightly in 2024. According to the forecast, other emerging markets remain under pressure from high energy and food prices and face slowing demand from advanced economies.

While downside risks to the EU outlook remain mainly related to developments in energy markets, it is also important to highlight some upside risks related to possible positive developments on the demand side. As indicated in the forecast, while domestic demand could be stronger than projected thanks to lower gas prices, easing supply-side problems and wage growth, external demand could also be stronger thanks to recent decisions such as the reopening of China, which could boost consumption.

5.2 INFLATION (M)

Q4-2022 average inflation data:

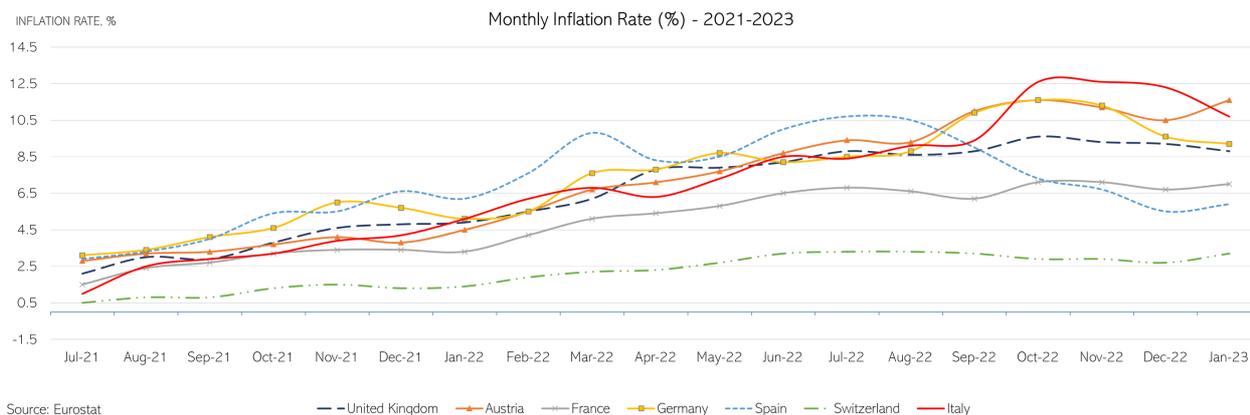
- EU27: 11.00%
- Eurozone: 9.97%
- United States: 7.10%
- United Kingdom: 9.37%
- Turkey: 78.03%
- Switzerland: 2.83%
- China: 1.83%

In the last quarter of 2022, euro area inflation continues to rise, averaging 9.97% y/y, up from 9.30% y/y in the previous quarter. EU27 inflation follows a similar path, averaging 11.00% y/y, up from 10.27% y/y in the third quarter of 2022. While there is a visible increase in inflation rates on a quarterly basis, it is important to highlight that the peak was reached in October 2022 and the following months bring a slowdown.

Looking at other countries, inflation in the US eased again, averaging 7.10% in Q4 2022, down from 8.33% in Q3 2022 (y/y). China's inflation rate also eased in the last period of 2022, averaging 1.83%, down from 2.67% in Q3 2022 (y/y).

Looking ahead, the EC forecasts that HICP inflation in the EU will fall from 9.2% in 2022 to 6.4% in 2023 and 2.8% in 2024.

In the euro area, it is projected to decelerate from 8.4% in 2022 to 5.6% in 2023 and 2.5% in 2024. According to the IMF's latest forecasts (January 2023), global inflation is expected to fall to 6.6% in 2023 and 4.3% in 2024 but will still remain above pre-pandemic levels.



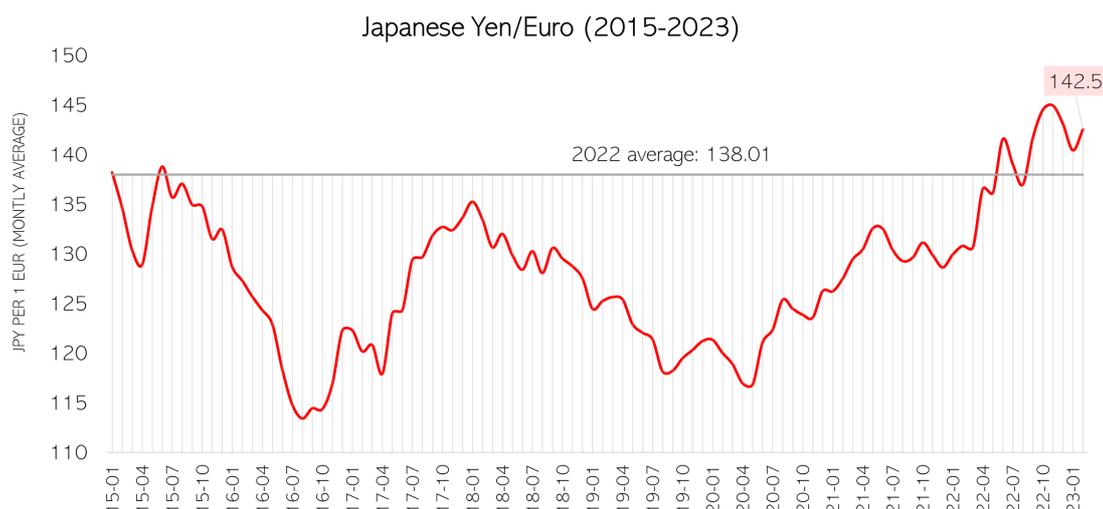
Looking at the main CECIMO producing countries, although average inflation increased in the last quarter of 2022 in most of the countries considered, it peaked in October 2022. The latest available figures (January 2023) show the following inflation rates: Germany 9.2%, Switzerland 3.2%, United Kingdom 8.8%, France 7%, Spain 5.9% and Italy 10.7% (y/y).

Inflation rates by Country (January 2022 - January 2023)

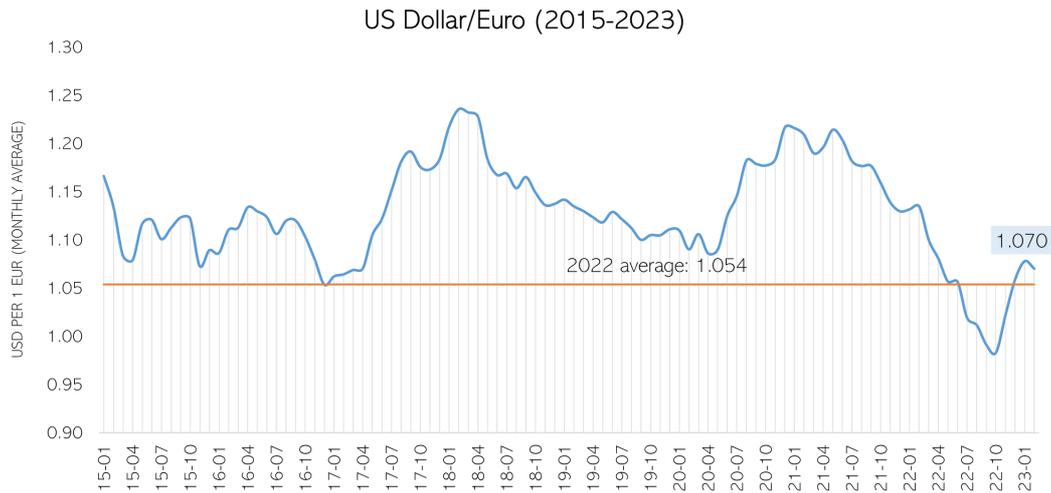
% change on a year earlier	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23
Austria	4.5	5.5	6.7	7.1	7.7	8.7	9.4	9.3	11.0	11.6	11.2	10.5	11.6
France	3.3	4.2	5.1	5.4	5.8	6.5	6.8	6.6	6.2	7.1	7.1	6.7	7.0
Germany	5.1	5.5	7.6	7.8	8.7	8.2	8.5	8.8	10.9	11.6	11.3	9.6	9.2
Italy	5.1	6.2	6.8	6.3	7.3	8.5	8.4	9.1	9.4	12.6	12.6	12.3	10.7
Spain	6.2	7.6	9.8	8.3	8.5	10.0	10.7	10.5	9.0	7.3	6.7	5.5	5.9
Switzerland	1.4	1.9	2.2	2.3	2.7	3.2	3.3	3.3	3.2	2.9	2.9	2.7	3.2
United Kingdom	4.9	5.5	6.2	7.8	7.9	8.2	8.8	8.6	8.8	9.6	9.3	9.2	8.8

Source: Eurostat & OECD

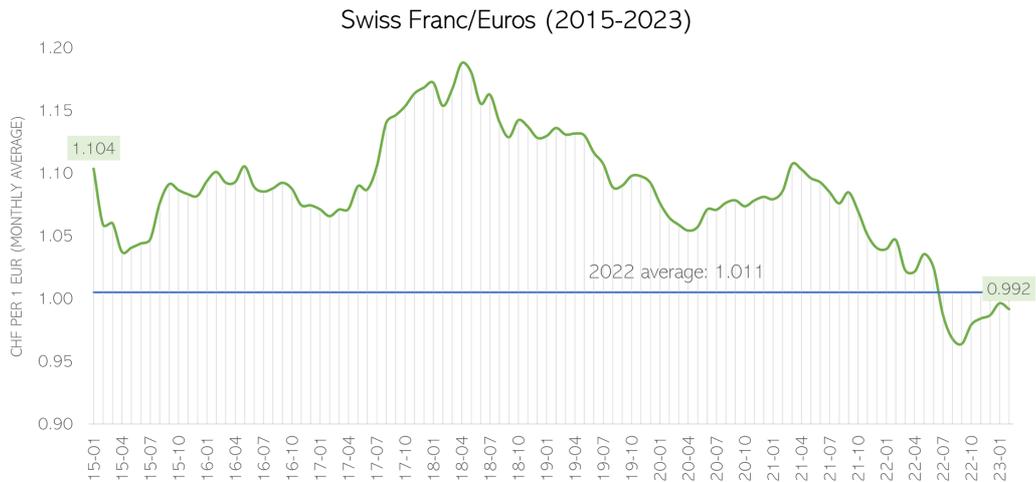
5.3 FOREIGN EXCHANGE RATES (M)



In the last quarter of 2022, the JPY exchange rate against the euro averaged 144.2, which indicates a higher exchange rate than in the previous quarter and a further weakening of the JPY against the EUR (by 3.6%). On a yearly basis, the JPY weakened by 6% against the EUR. As shown in the chart above, the exchange rate in February was 142.5 JPY per EUR, above the 2022 average.

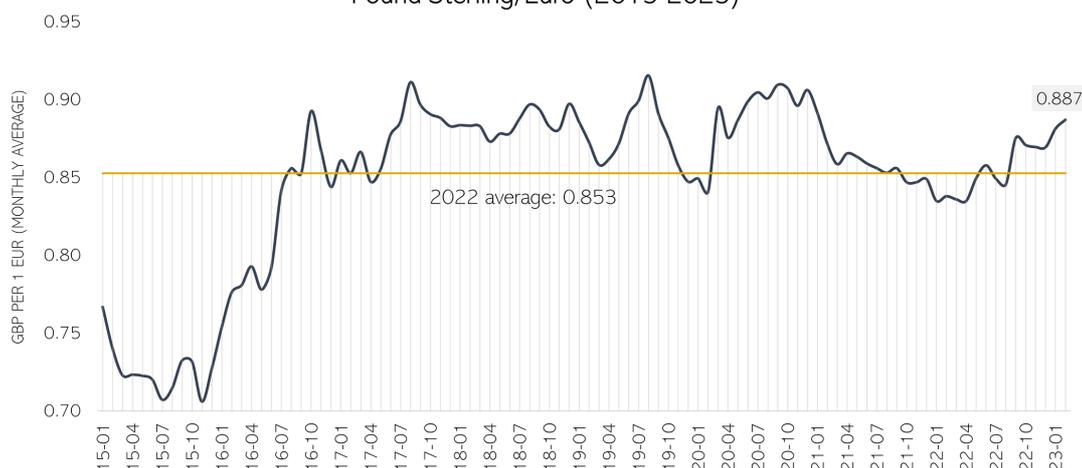


Comparing the average USD exchange rate of \$1.183 per euro in 2021 with the average level of \$1.054 per euro in 2022, it is clear that the EUR weakened by around 11% against the USD in 2022. Although the average for the last quarter of 2022 shows some strengthening of the EUR, it was not enough to compensate for the weakening in the previous quarters. The latest data for February show an exchange rate of 1.070 USD per 1 EUR, slightly above the 2022 average.



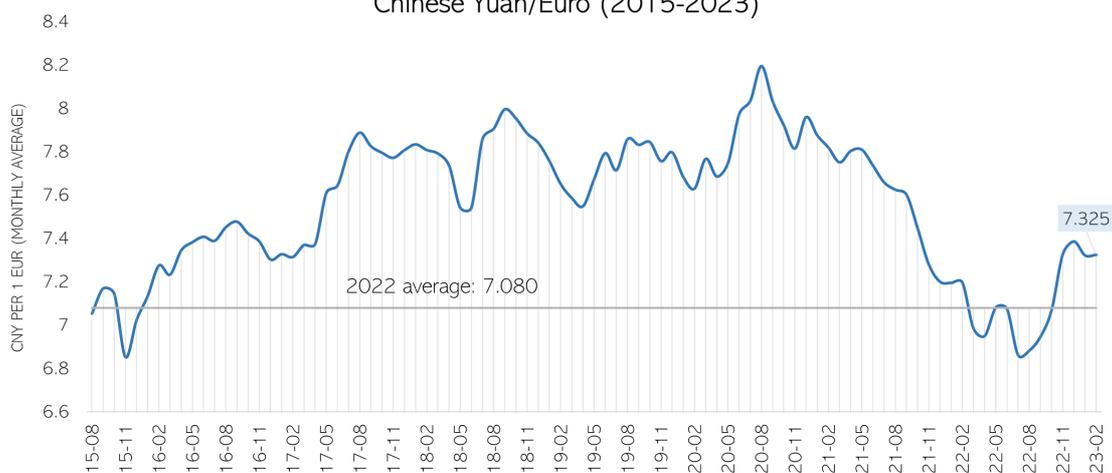
The average exchange rate of CHF per EUR in Q4 2022 was 0.984, while the average exchange rate in Q3 2022 was slightly lower - 0.973, indicating a slight weakening of the CHF against the EUR (1%). However, in terms of average annual rates, the CHF appreciated by around 7% against the EUR in 2022. Looking at the last few months, the CHF weakened slightly against the EUR in October, November, December and January, while the opposite trend was observed in February. As result, the exchange rate in February was below the average for 2022 and stood at CHF 0.992 per EUR 1.

Pound Sterling/Euro (2015-2023)



The average pound sterling exchange rate in the last quarter of 2022 was 0.870 per euro, contributing to the increase in the annual average of 0.853 GBP per 1 euro. This annual average shows a slight weakening of the euro against the GBP in the previous year, mainly due to developments in the last quarter. In January and February, the GBP weakened against the euro, and the exchange rate in February was GBP 0.887 per 1 euro (above the previous year average).

Chinese Yuan/Euro (2015-2023)



The average exchange rate of the Chinese yuan in the last quarter of 2022 was 7.261 CNY per 1 euro, signaling a significant weakening of the CNY compared to the average of the previous quarter (6.897). However, according to the data for the last two months, the euro weakened against the CNY in January 2023 and the exchange rate remained almost unchanged in February. As the chart above shows, the exchange rate in February was 7.325 CNY per euro.

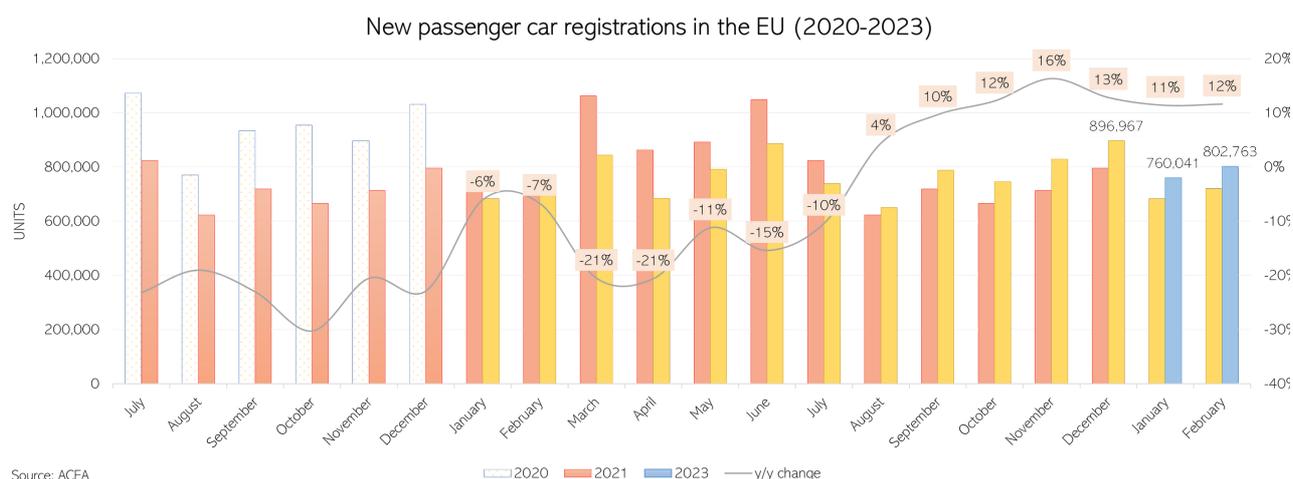
6. RELATED SECTORS

The Related Sectors section provides a brief overview of the automotive and aerospace sectors, major MT buying sectors. Moreover, the last section presents recent trends in commodity prices.

6.1 AUTOMOTIVE

According to the latest S&P Global Mobility reports (December 2022), global light vehicle production in 2022 was expected to end at 81.8 million units (6% improvement over 2021 levels), but looking at the sales figures, full year 2022 sales were expected to be 1.3% lower than 2021 levels.

While supply chain disruptions are still expected, not only in semiconductors but also in labor and logistics, light vehicle production is expected to increase for 4.0% and reach about 85.0 million units in 2023. In China, S&P Global Mobility forecasts modest production growth of 1.1% to 26.4 million units in 2023. Europe is expected to produce 16.6 million units in 2023, up from an estimated 15.6 million in 2022. In North America, the production is expected to reach just under 15.1 million units in 2023. In light of electrification of vehicles, S&P Global Mobility projects global demand for battery electric passenger vehicles is on track to hit almost 10 million units for 2023, accounting for an estimated 13.3% of global passenger vehicle demand.



According to ACEA (the European Automobile Manufacturers' Association), new passenger car registrations in the European Union continued their upward trend (+11.5%) in February 2023, with 802,763 units sold. However, as highlighted in their press release, it is important to note the low base of comparison due to the semiconductor shortage crisis at the beginning of 2022. Among the four major EU markets, Spain (+32.1%) and Italy (+18.2%) recorded the highest growth rates, followed by France (+9.1%). German registrations remained stable (+0.2%) over the two-month period.

Total and EV new Passenger Car registrations in the EU

	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Total new PC registrations	2,560,286	2,802,034	2,165,540	2,173,642	2,246,248	2,362,562	2,922,242	3,013,543
Total (Q/Q-4)	3%	56%	-22%	-25%	-12%	-16%	35%	39%
EV new PC registrations	354,574	446,028	409,882	532,721	423,252	439,914	443,899	694,254
EV % of Total	14%	16%	19%	25%	19%	19%	15%	23%
EV (Q/Q-4)	112%	244%	50%	12%	19%	-1%	8%	30%

EV = Electric Vehicles including BEV and PHEVs

Source: ACEA

According to the quarterly figures, the total number of new passenger car registrations in the EU was 39% higher in Q4 2022 compared to the same period last year. The share of new electric passenger car registrations in the last quarter of 2022 was significantly higher at 23%, compared to 15% in the previous quarter. The electric vehicle group also recorded a significant increase in new passenger car registrations, increasing by 30% in the last quarter of 2022 compared to the same period last year.

New passenger car registrations in China (2020-2023)



Source: China Association of Automobile Manufacturers

China's new car sales plunged 33% in January 2023, reversing a 2.4% gain in the previous month, as demand weakened. One of the reasons for the slowdown in demand was the government's decision not to extend a 50% reduction in the purchase tax on cars with internal combustion engines. It is also important to highlight the government's decision to end a government subsidy for the purchase of electric vehicles, which had been in place for more than a decade. While January's figures were below those of the same period last year, as shown in the chart above, the situation is slightly better in February, but it is important to note that the base - the same period last year - was at a very low level.

Total and EV new Passenger Car registrations in China

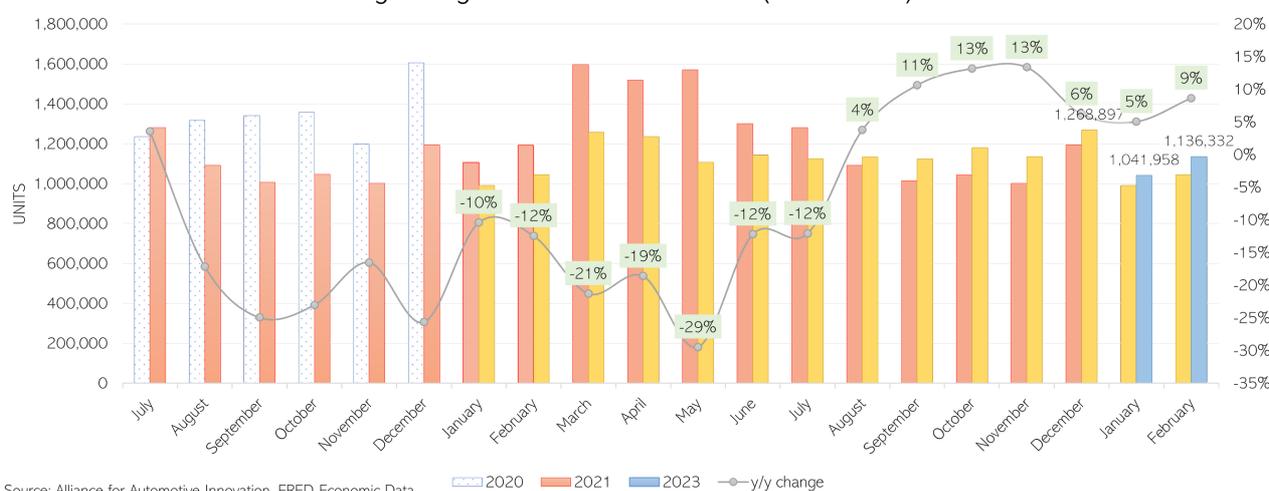
	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Total new PC registrations	5,075,000	4,919,000	4,854,000	6,621,000	5,537,000	4,810,000	6,631,000	6,571,000
Total (Q/Q-4)	77%	-1%	-12%	-2%	9%	-2%	37%	-1%
EV new PC registrations	490,000	638,000	904,000	1,291,000	1,224,000	1,342,000	1,967,000	2,314,000
EV % of Total	10%	13%	19%	19%	22%	28%	30%	35%
EV (Q/Q-4)	389%	179%	198%	131%	150%	110%	118%	79%

EV = Electric Vehicles including BEV and PHEVs

Source: China Association of Automobile Manufacturers

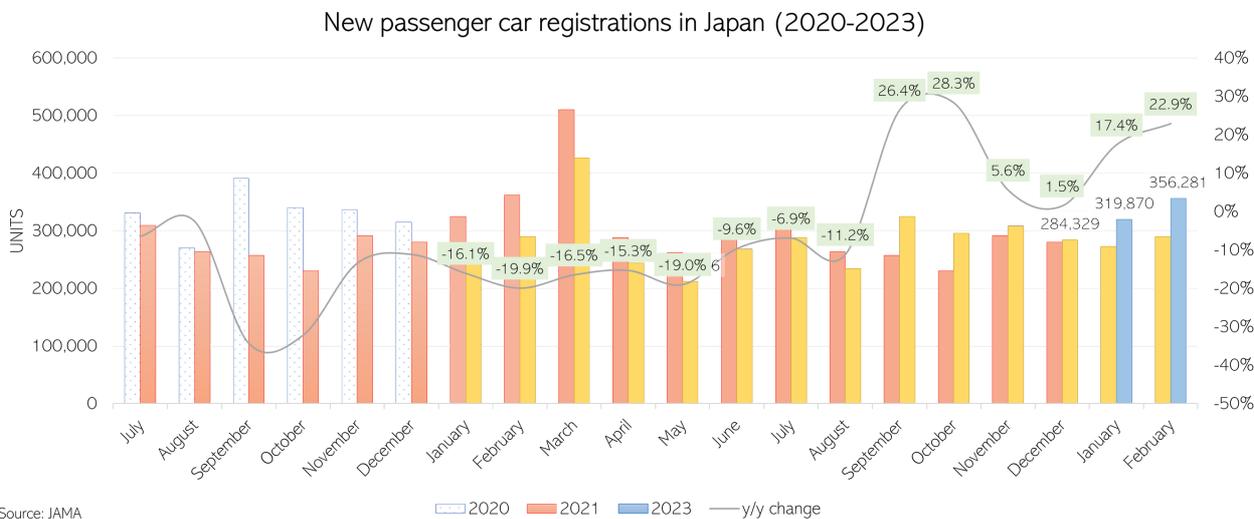
Looking at the quarterly figures, new passenger car sales in China remained almost at the same level as in the previous quarter. In addition, new passenger car sales in the fourth quarter of 2022 were only 1% lower than in the same period of the previous year. The share of new electric passenger car sales continued to increase, reaching 35% in the final quarter of 2022. As in the previous quarters, this group shows strong growth (79%) in Q4 2022 compared to total passenger car sales.

Light Weight Vehicle Sales in the US (2020-2023)



Source: Alliance for Automotive Innovation, FRED Economic Data

As was the case in the second half of 2022, the first data for 2023 brings improvements in light vehicle sales in the US compared to the same months of the previous year. As shown in the chart above, the level in February 2023 improved compared to the previous month, and the level of light vehicle sales was 9% higher than the level of light vehicle sales in February 2022. According to the Alliance for Automotive Innovation, the sales of electric vehicles (BEV, PHEV & fuel cell) accounted for 7.99% of total vehicle sales in February.

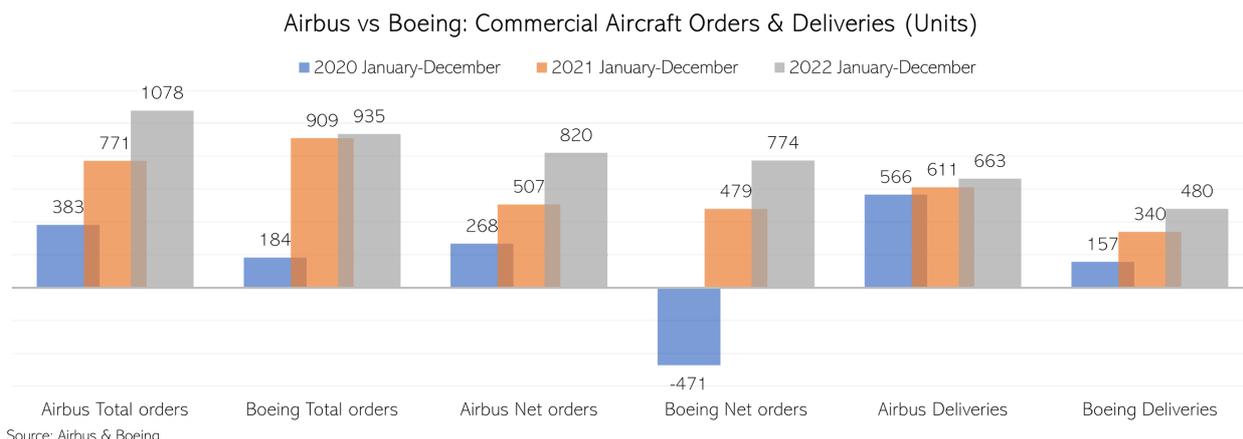


According to the Japan Automobile Manufacturers Association (JAMA), new car registrations/sales in Japan have improved significantly in recent months. The level in February 2023 was around 22.9% higher than in the same period last year, indicating an improvement in demand and an easing of supply-side problems. Although the level of new car registrations was higher than last year, it is important to note that it was still slightly below the level of February 2021.

6.2 AEROSPACE

According to Eurocontrol, with an average of 23,004 flights/day in February 2023, this level is 22.3% higher than in February 2022, which is a significant improvement, but still below the average of 2019. It is important to note that Ukrainian airspace has been closed since 24 February 2022 and all other countries have improved their traffic levels compared to 2022. However, when talking about improvements, it is important to note the low traffic levels in February 2022, when the Omicron spread across Europe. The latest Eurocontrol forecasts for the coming period show that network traffic in the baseline scenario is expected to reach around 95% of the 2019 level by July 2023.

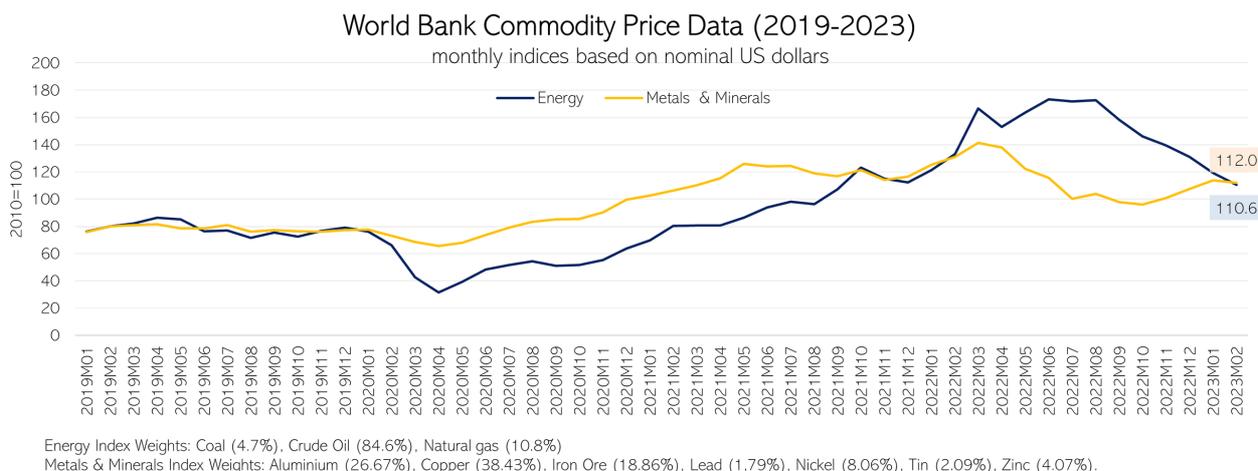
Following the recovery in 2022, 2023 is expected to be another year of recovery for the commercial aircraft manufacturing industry. Furthermore, according to Oxford Economics' October 2022 forecast, aerospace manufacturing in general is one of the top five industries expected to grow the fastest in 2023 (+4.3%).



As shown in the chart above, the full data for 2022 shows that Boeing recorded 935 total orders and 161 cancellations, resulting in 774 net orders (significantly higher than net orders in 2021). At the same time, Airbus recorded 820 net orders against 258 cancellations. Compared to the last year, the two largest manufacturers recorded an increase in net orders of more than 62%, indicating a strong recovery in demand for commercial aircraft. As the chart above shows, deliveries also showed a positive trend. While Airbus deliveries increased by around 9%, Boeing's deliveries improved by around 41% compared to 2021 levels.

6.3 ENERGY AND METALS

This chapter gives a brief overview of energy and metal prices from the World Bank and London Metal Exchange sources. While the World Bank's commodity price data presents monthly indices based on the nominal US dollars, the prices for certain metals are based on information available on the London Metal Exchange (LME) website at the time of writing this report.

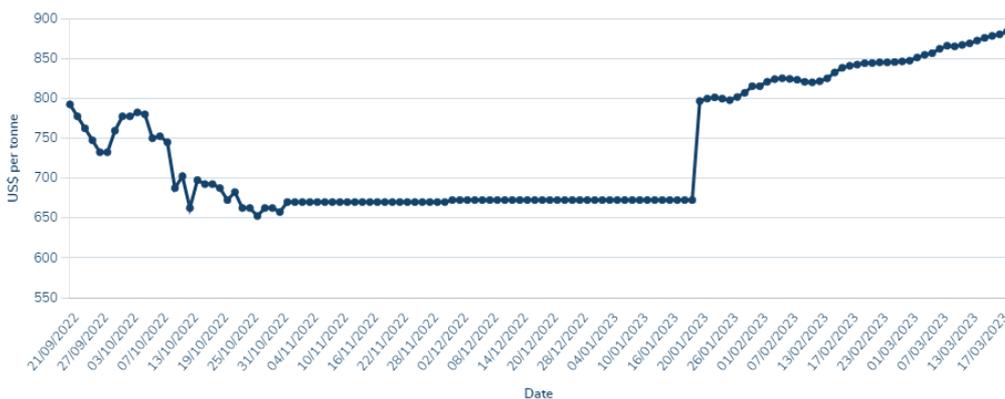


As shown in the chart above, energy prices continue to fall and were down 7.3% in February, led by coal (-34.8%) and natural gas in the US (-27.2%). However, on the metals and minerals side, prices in Q1 2023 are expected to remain above Q4 2022 levels in some regions. Some of the recent developments in the steel market are explained in the LME price overview. Notably, global metals and minerals prices were down 1.7% month-on-month, while precious metals prices were down by 3.1% in February.

The WB's latest estimates (October 2022) show that commodity prices are expected to ease over the next two years but remain well above their average over the past five years. Energy prices are expected to fall by 11% in 2023 and 12% in 2024, while metal prices are expected to fall by 15% in 2023 before stabilising in 2024. Please note that the WB is expected to revise its expectations in the forthcoming April 2023 Commodity Markets Outlook.

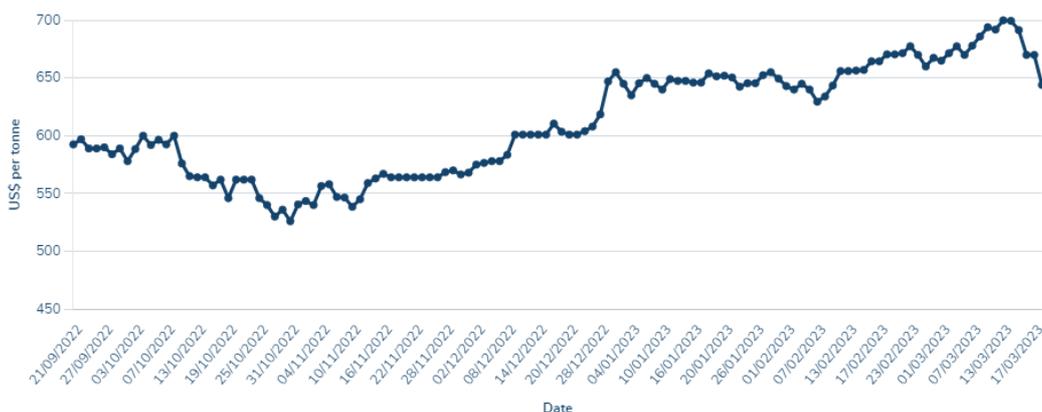
The text below provides an overview of the latest developments in metal prices on the LME.

LME Steel HRC EXW NW Europe (Argus) Closing prices graph (March 20 = 883.98 USD/t)



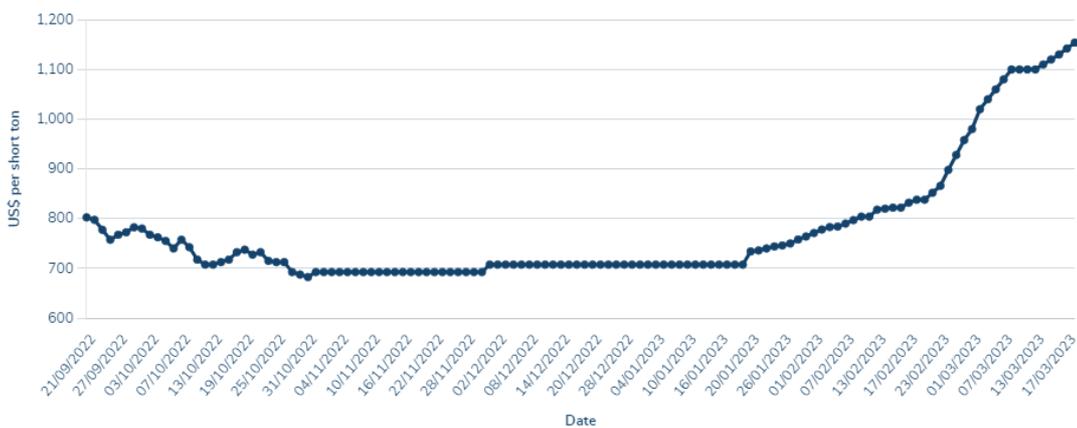
After stable prices in the period from October to mid-January, domestic prices for hot rolled coil in Northern Europe recently increased to USD 883.98 per tonne compared to our last reporting period, when the closing price on 14th December was USD 672.5 per tonne. While the price increase is visible, it is important to note that prices are below the levels seen in early 2022. As demand recovers, European mills are expected to increase production levels. However, with HRC from Asia having long lead times and relatively high prices, and exports from Turkey disrupted by the February earthquakes, steel prices are expected to rise further in the short term.

LME Steel HRC FOB China (Argus) Closing prices graph (March 20 = 644.0 USD/t)



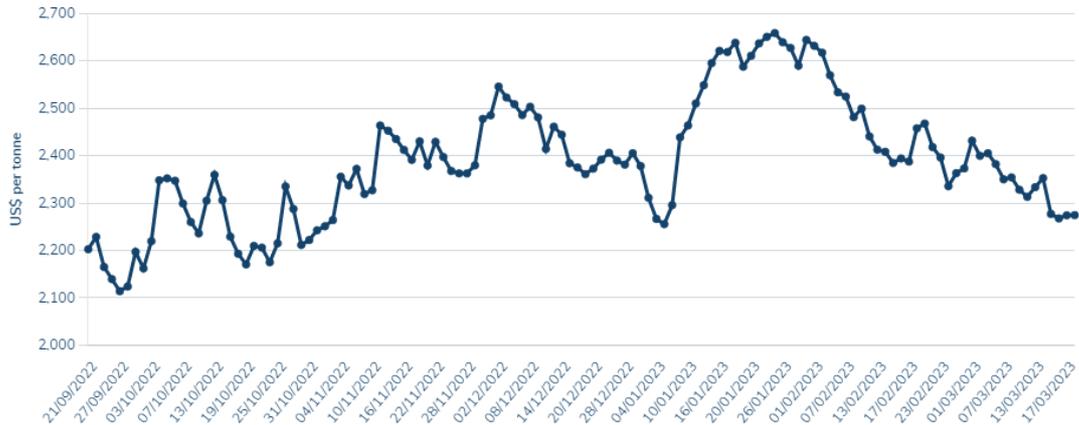
After a steady increase in the last quarter of 2022 and the first two months of 2023, hot rolled coil prices in China fell significantly in March. However, compared to the previous reporting period, when HRC FOB China closed at USD 601.0/tonne on 14 December, the price was slightly higher on 20 March, closing at USD 644.0/t. Compared to the rest of the world, low domestic demand in the first two months has kept prices more stable.

LME Steel HRC EXW N America (Platts) Closing Prices graph (March 20 = 1.154 USD/t)



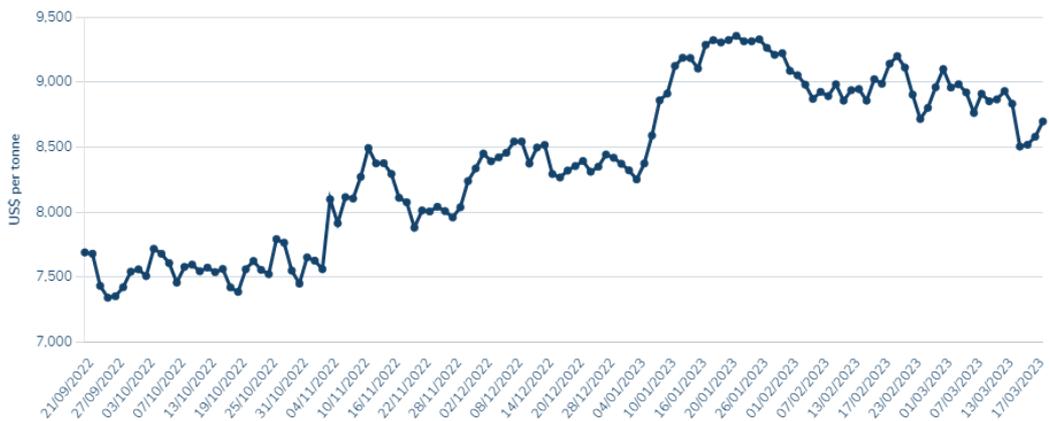
With regard to the US steel market, the available data suggest that steel prices have risen significantly, mainly as a result of strong demand. Domestic steel producers continue to raise prices, while supply remains tighter than expected due to low import levels. As a result, LME US steel closing prices have risen significantly compared with the previous reporting period, and the increase has been particularly pronounced since mid-February. While the closing price on 14 December was USD 707.5/t, the closing price on 20 March was USD 1.154/t.

LME Aluminium Closing Prices (March 20 = 2.274 USD/t)



The latest closing price for aluminium at the time of writing was USD 2,274/t - slightly lower than on 14 December 2022 (USD 2427/t). Looking at the chart and the most recent period, while there was a visible increase in January, there was a continuous decline in aluminium prices on the LME in February and March, and the level was significantly lower than the prices observed at the beginning of 2022.

LME Copper Closing Prices (March 20 = 8697.5 USD/t)



Looking at the last six months, LME copper closing prices peaked in January 2023 and the period thereafter brings more stable but significantly higher than historical copper prices. As can be seen from the chart above, the latest figure of USD 8697.5/t indicates a slightly higher closing price than the previous reference period (14th December = USD 8516.5/t). As mentioned in previous reports, the copper price is expected to remain high in the period ahead due to strong demand.

7. GLOSSARY

CECIMO8 orders

This section presents the “new orders received index” showing the development of the machine tool demand as an indication of future production. An order is defined as the value of the contract linking a producer and a third party in respect of the provision by the producer of goods and services. The CECIMO8 orders index combines the relevant indexes of Austria, the Czech Republic, France, Germany, Italy, Spain, Switzerland and the United Kingdom. The weights of the different indexes correspond to the countries shares in total production of the eight countries in 2010. The new orders received are split according to the origin of the order, based on the change of ownership. This identification is the basis for domestic and foreign new orders. The origin is determined by the residency of the third party that has made the order.

Industrial Production Index

The objective of the production index is to measure changes in the volume of output at close and regular intervals, normally monthly. It provides a measure of the volume trend in value added over a given reference period. The production index is a theoretical measure that must be approximated by practical measures. Value added at basic prices can be calculated from turnover (excluding VAT and other similar deductible taxes directly linked to turnover), plus capitalised production, plus other operating income plus or minus the changes in stocks, minus the purchases of goods and services, minus taxes on products which are linked to turnover but not deductible plus any subsidies on products received. Industrial production is compiled as a fixed base year Laspeyres type volume-index.

Base period: Year 2015 = 100.

Source: Eurostat.

Gross Fixed Capital Formation

The Gross Fixed Capital Formation (GFCF) consists of resident producers' acquisitions, less disposals, of fixed tangible or intangible assets. This covers in particular machinery and equipment, vehicles, dwellings and other buildings. The GFCF is a key determinant of both aggregate demand and supply.

Source: Eurostat and ECB.

Capacity Utilisation in the Investment Goods Sector

Population: Investment goods producers.

Data covered: Assessment of current production capacity, measured as a balance (seasonally adjusted); Current level of capacity utilization, measured in % (seasonally adjusted). More than 38.000 industrial firms are surveyed every month, while the biannual investment survey includes over 44.000 units.

Answers obtained from the surveys are aggregated in the form of “balances”. Balances are constructed as the difference between the percentages of respondents giving positive and negative replies. The Commission calculates EU and euro-area aggregates on the basis of the national results and seasonally adjusts the balance series.

http://ec.europa.eu/economy_finance/db_indicators/surveys/documents/userguide_en.pdf

Purchasing Managers' Index (PMI)

The Global Report on Manufacturing is compiled by IHS Markit and J.P. Morgan in association with ISM and IFPSM based on the results of surveys covering 9.000 purchasing executives in 30 countries. Together these countries account for an estimated 86% of global manufacturing output. Questions are asked about real events and are not opinion based.

Data are presented in the form of diffusion indices, where an index reading above 50,0 indicates an increase in the variable since the previous month, below 50,0 a decrease and equal to 50.0 means no change on prior month. All the indices are seasonally adjusted at the national sector level.

<http://www.markiteconomics.com/Survey/Page.mvc/AboutPMIData>

OECD Business Confidence Indicator (BCI) for Europe

The Composite leading indicators (CLI), which BCI is part of, comprises a set of component series selected from a wide range of key short-term economic indicators to ensure that the indicators will still be suitable when changes in economic structures occur in future. CLIs are calculated for 33 OECD countries (Iceland is not included) and several regional aggregates, based on enterprises' assessment of production, orders and stocks, together with its current position and expectations for the near future.

These indexes are designed to anticipate turning points in economic activity relative to trend, on average 6 to 9 months before they happen. While theory says that a turning point in the CLI signals a turning point in the reference series, such turning points, in reality, are determined by a complicated process. Turning points in the detrended reference series are usually found about 4 to 8 months in advance.

Therefore, one often needs to wait for several periods to draw a more definite conclusion. A useful way to exploit the information in CLIs is to take their year-on-year growth rate.

Typical indicators in the CLI include orders and inventories changes, financial market indicators, business confidence surveys and data on key sectors and trend in the main trade partners. The standardised BCIs represent only the manufacturing sector. It is based on companies' assessment of production, orders, stocks and its current position and expectations. BCI shows a long-term trend in industrial production (with a 6-month time-lag). An increase over 100 means expansion; a decrease above 100 means a downturn; an increase below 100 is an upturn and a decrease below 100 is a slowdown.

8. GEOGRAPHICAL INFORMATION

CECIMO countries

The European Association of the Machine Tool Industries and related Manufacturing Technologies brings together 15 national associations of machine tool builders from the following countries: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Italy, the Netherlands, Portugal, Spain, Sweden, Switzerland, Turkiye and the United Kingdom.

Euro area (EA) / Eurozone (EZ)

The euro area (EA19), also called the Eurozone, consists of Member States of the European Union that have adopted the euro as their currency. It includes Belgium, Germany, Estonia, Ireland, Greece, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Austria, Portugal, Slovenia, Slovakia and Finland.

European Union (EU)

The European Union (EU27) includes Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovenia, Slovakia, Spain, Sweden.

9. OTHER

M / m (Toolbox headings)

M = Macro-economic. non-caps (m) = microeconomic.

GDP

Gross Domestic Product

Billion

Billion means one thousand million

US

United States

Q1, Q2, Q3, Q4

1st quarter, 2nd quarter, 3rd quarter, 4th quarter

EUR / €

Euros

USD / \$

United States Dollar(s)

HF

Swiss Franc(s)

ECB

European Central Bank

Fed

Federal Reserve (System), the US Central Bank

GBP

Great Britain Pound(s), the Pound Sterling

IMF

International Monetary Fund

WB

World Bank

MT

Machine tools

CECIMO countries

Countries whose machine tool sector is represented by CECIMO

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MEMBER ASSOCIATIONS

Austria: FMTI, Association of Metaltechnology Industries
www.metalltechnischeindustrie.at

Belgium: AGORIA, Federatie van de Technologische Industrie
www.agoria.be

Czech Republic: SST, Svazu Strojírenské Technologie
www.sst.cz

Denmark: Danish Manufacturing Industry
www.danskindustri.dk

Finland: Technology Industries of Finland
www.teknologiateollisuus.fi

France: Evolis, Organisation professionnelle des biens
d'équipement
www.evolis.org

Germany: VDW, Verein Deutscher Werkzeugmaschinenfabriken
e.v.
www.vdw.de

Italy: UCIMU, Associazione dei costruttori Italiani di macchine
utensili robot e automazione
www.ucimu.it

Netherlands: FPT-VIMAG, Federatie Productie
Technologie / Sectie VIMAG
www.ftp-vimag.nl

Portugal: AIMMAP, Associação dos Industriais
Metalúrgicos, Metalomecânicos e Afins de Portugal
www.aimmap.pt

Spain: AFM, Advanced Manufacturing
Technologies Asociación española de fabricantes
de máquinas-herramienta, accesorios, componentes y
herramientas
www.afm.es

Sweden: SVMF, Machine and Tool Association of
Sweden
www.svmf.se

Switzerland: SWISSMEM, Die Schweizer Maschinen-,
Elektro- und Metall-Industrie
www.swissmem.ch

Turkiye: MIB, Makina Imalatçılar Birliği
www.mib.org.tr

United Kingdom: MTA, The Manufacturing Technologies
Association
www.mta.org.uk

CECIMO is the European Association of the Machine Tool Industries and related Manufacturing Technologies. We bring together **15** national associations of machine tool builders, which represent approximately **1500** industrial enterprises in Europe (EU + UK+ EFTA + Turkey), over **80%** of which are SMEs. CECIMO covers **98%** of the total machine tool production in Europe and about **1/3** worldwide. It accounts for approximately **150,000** employees and a turnover of around **22.5 billion** euros in 2021. More than **three quarters** of CECIMO production is shipped abroad, whereas **half** of it is exported outside Europe.