

## KEY MARKET TRENDS IN THE EUROPEAN ADDITIVE MANUFACTURING SECTOR

Key highlights for the next six months:

- ⇒ While the growth trend for both domestic and foreign orders is somewhat less optimistic, stronger growth is expected in the domestic market.
- ⇒ AM companies offering solutions related to the use of composites and plastics as materials are expected to see the strongest growth in orders over the next six months.
- ⇒ The strongest growth in new orders is still expected to come from the aerospace sector.

## KEY MARKET TRENDS IN THE EUROPEAN ADDITIVE MANUFACTURING SECTOR

Fall 2023

Between September and November 2023, CECIMO, the European Association of Manufacturing Technologies, organized the seventh round of its European Additive Manufacturing Survey, which aims to assess key market trends in the Additive Manufacturing (AM) sector.

It is a six-month survey that will help the industry record trend indications for key business areas, such as domestic business, AM exports, orders by type of material, client industry demand and investment trends. 3D printing companies express their six-month indications in the key business areas compared to the situation over the past six months.

As CECIMO has established cooperation with VDMA\* to obtain a wider European figure in the AM sector including data for Germany, the report is divided into two sections. Part 1 of the report contains the results of the combined data of the CECIMO national associations' surveys and the VDMA survey and Part 2 contains only data from countries using the CECIMO survey and shows a trend based on the results of previous surveys.

### Methodology:

The first part of this report contains data from countries that use the CECIMO survey combined with the VDMA survey which contains data for the German AM sector. Keep in mind that there is a slight difference in the approach used to ask questions of participants between the CECIMO and VDMA surveys. While the CECIMO survey asks questions about expectations concerning domestic/foreign orders, the VDMA survey asks questions about the development of the AM sector in the domestic/foreign market.

The second part of the report provides more detailed results on the AM trends based only on the results received from countries using the CECIMO survey.

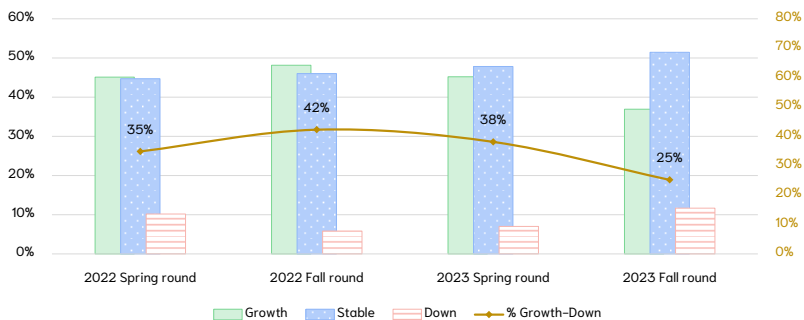
For each country, survey responses are analysed as the difference between the share of companies reporting growth and that of companies reporting a decrease in their trend indication. A positive balance provides a growth indication, and a negative balance reflects a decline.

Please note that the results at the European level are obtained by weighting country-specific results with shares derived from the 2015 Machine Tools (MT) production levels.

\* VDMA is the association of Germany's engineering industry which represents the AM industry in Germany and carries out an AM survey in Germany on a regular basis.

## AM TREND – HOME MARKET

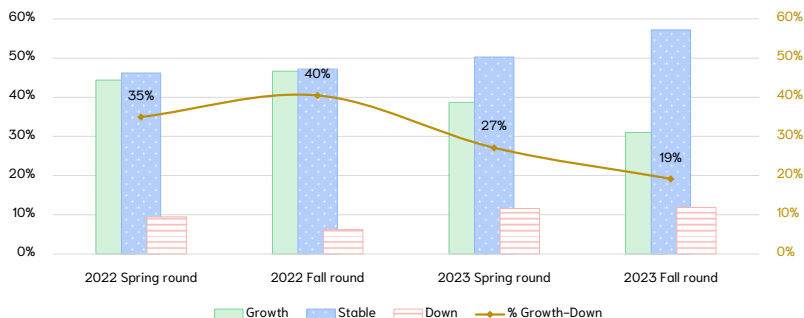
According to the latest survey results, the European Additive Manufacturing (AM) sector has a stable but slightly slower outlook for growth in its home market compared to the previous survey period. As shown in the graph below, there is a notable drop in growth expectations from 45% to 37%, while the proportion of respondents expecting a negative development increased from 7% in the Spring survey to 12% in the latest round. Despite the slight decline in business expectations, the European AM sector is expected to continue to expand moderately in its domestic market over the next six months, reflecting relatively stable demand growth.



## AM TREND – FOREIGN MARKET

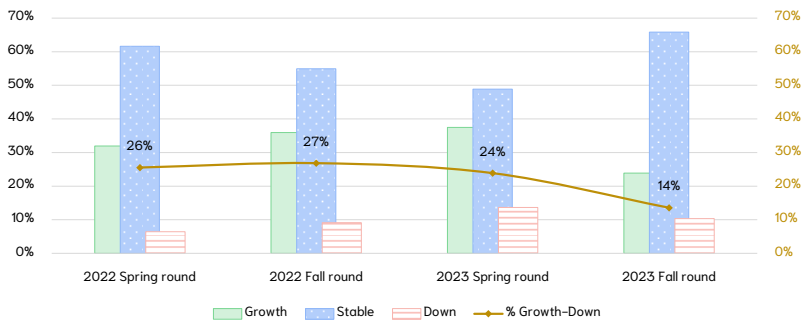
Compared with the previous survey, the latest expectations for the export market also reflect more subdued growth, with a growth-down balance of 19%. In the current round of the survey, 31% of participants expressed confidence in the expansion of export orders over the next six months. This figure represents a decrease of 8% compared to the previous survey, indicating a continued level of cautious optimism.

While the percentage of respondents expecting a decline in the export market remained relatively stable at 12%, there was a notable increase in the number of respondents with stable expectations, reaching a record high of 57%.



AM INVESTMENTS

In line with the subdued expectations for both domestic and foreign markets, the latest round of the survey shows a notable decline in the balance of new investment in the AM sector, from +24% in the previous round to +14% in this round. In this context, the share of respondents expecting a growth has decreased from 37% to 24%, while it is important to note that the share of those expecting a decline has also decreased from 14% to 10%. As a result, the proportion of respondents expecting investment to remain stable rose to 66%. This underlines that around two-thirds of respondents expect investment levels to remain the same as in the previous six months.

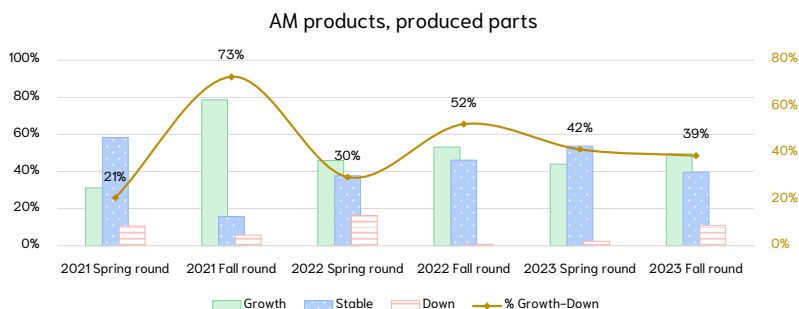


Note: The next part of the report presents the results of the CECIMO surveys based on the new methodology (Italy, Spain, Switzerland, the United Kingdom, France and Austria).

## AM TREND INDICATION OF THE HOME MARKET

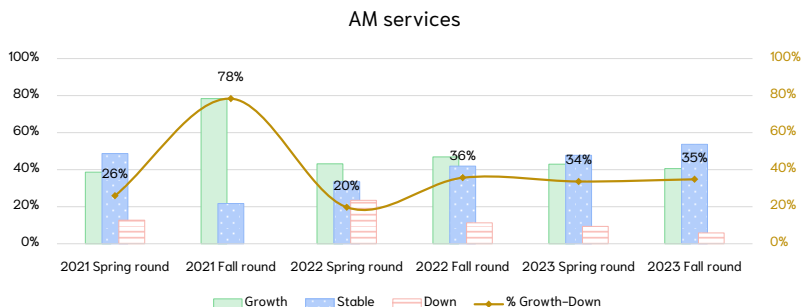
*Question: Please indicate the trend in new home market orders over the next 6 months compared to past 6 months based on value.*

When analysing the current trend indicators within the domestic market, there is visible a positive balance; however, there is a noticeable decline in growth expectations across most of the categories. It is worth noting that this trend coincides with a subdued business climate, coupled with an economic slowdown in Europe, and in these circumstances the observed trend does not come as a significant surprise. For a more detailed understanding, the following graphs provide a detailed breakdown, showing trends and percentages for each category in both the latest and previous rounds.

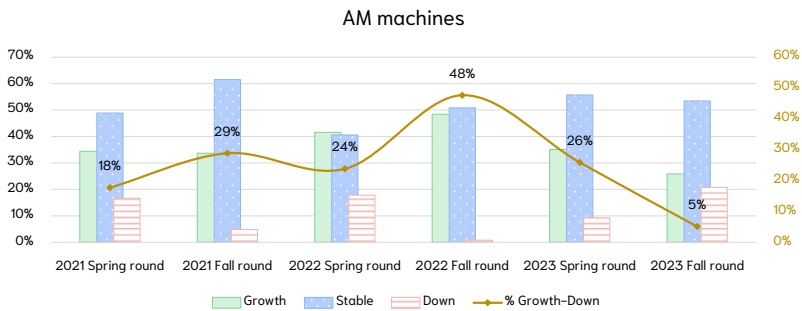


While the percentage of respondents expecting orders growth in the **AM products & produced parts** category has increased, it is important to note that the percentage of respondents expecting a decline has also increased to 11% compared to 2% in Spring 2023 round. This resulted in a fairly stable but slightly lower balance of 39%. However, it is worth noting that this particular group can expect the strongest growth in orders over the next six months compared to other categories.

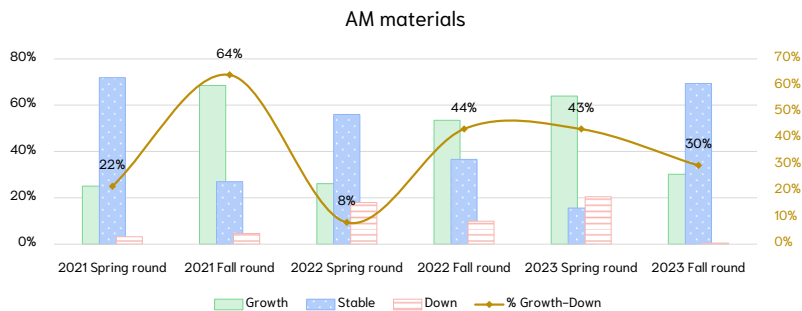
The **AM services** category also shows a stable balance (+35%), reflecting the second strongest orders growth expectations in the domestic market. As shown in the graph below, the share of participants expecting growth is significantly higher (41%) compared to the group of respondents expecting a decline (6%).



Among other categories, the expected growth in orders for **AM machines** shows the sharpest decline, falling to just 5%, the lowest level since the survey began. The accompanying chart illustrates a notable increase in the number of respondents expecting a decline in orders over the next six months, when comparing the last two rounds of the survey. As a result, the outlook for AM machine orders suggests a stabilisation, with expectations tending towards a steady state over the next six months.



While the number of respondents expressing pessimistic expectations for **AM materials** orders has fallen to almost zero, there has also been a marked decline in growth expectations. As a result, the balance has fallen to 30%, with more than two-thirds of respondents expecting order levels to remain stable. Although at a somewhat slower pace, AM materials producers/distributors expect domestic orders to increase over the next six months.



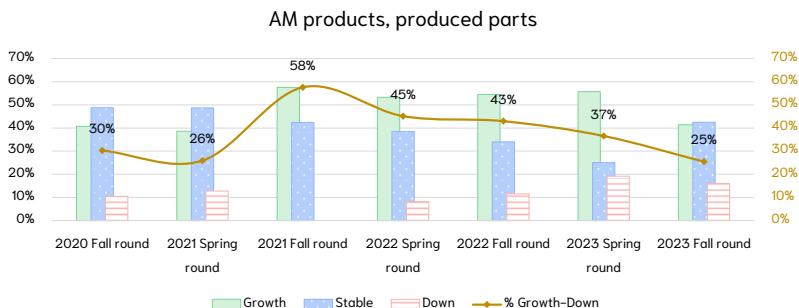
To summarise, the above charts indicate that domestic order expectations have moderated compared to the earlier months of this year. The AM products/produced parts and AM services sectors show a steady growth scenario, while the AM machines category show a notable decline in business optimism regarding demand over the next six months. However, when looking at the average across all categories, as highlighted in the first section of this report, the domestic AM market is expected to continue to grow, albeit at a slightly slower pace.

## AM TREND INDICATION OF THE EXPORTS

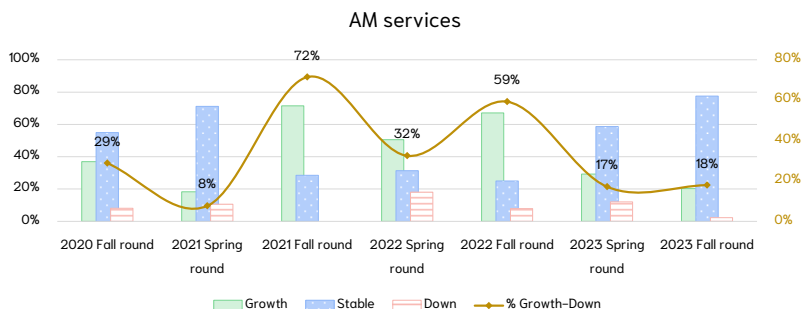
*Question: Please indicate the trend in new export orders over the next 6 months compared to past 6 months based on value.*

In line with domestic trends, respondents to the latest survey expressed on average lower expectations for foreign/export orders growth than in the previous survey round. As in the previous survey period, companies dealing with AM products/parts and AM materials are expected to experience the strongest growth in foreign orders.

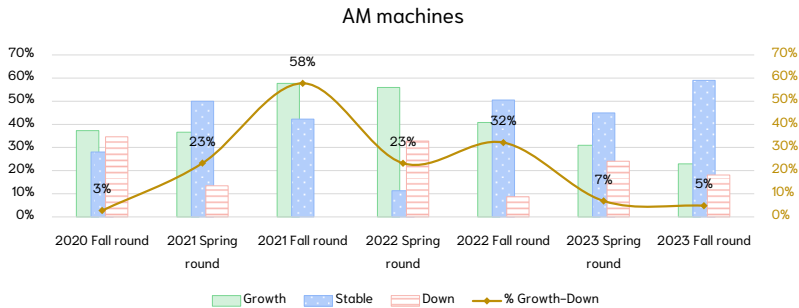
For the first time since Spring 2021, the proportion of respondents with expectations of stable order books for the **AM products/produced parts** category has outweighed those with expectations of growth. As can be seen in the chart below, the balance has reached its lowest point since the survey began. However, the outlook remains positive at +25%, indicating a moderate expectation for growth in this category over the next six months.



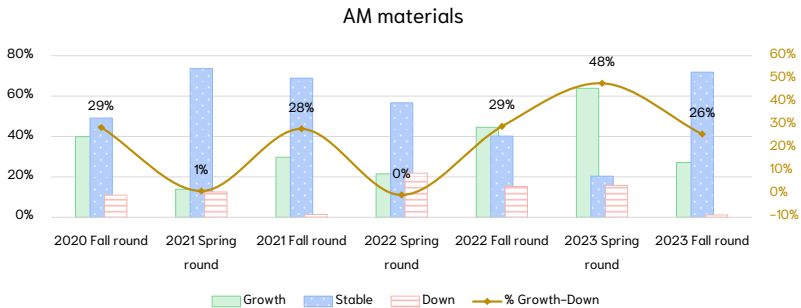
Looking at the expectations for the **AM services** category, a fairly stable balance can be seen compared to the previous reporting period. There has been a significant decrease in the proportion of respondents expecting growth, but also in the proportion expecting decline. As a result, the proportion of those expecting orders to remain stable reached almost 60%, the highest level since the start of the survey. With a balance of +18% on the foreign market, it is important to highlight the more optimistic expectations for orders growth on the domestic market for this category (+35%).



Similar to the situation in the domestic market, a less optimistic trend is noticeable concerning export orders in the category of **AM machines**. The expectation that orders for AM machines will remain stable has risen from 45% to 59%. Although growth expectations are slightly lower, it is important to note that the proportion of respondents expecting a decline in orders has also fallen, from 24% to 18%.



After reaching a record high in the level of participants anticipating growth in orders for **AM materials**, this survey round reveals more moderate growth expectations. The percentage of participants expecting growth has decreased from 64% to 27%, as illustrated in the chart below. Meanwhile, the proportion of participants expecting stable orders has risen to 72%. Overall, with a balance of 26%, and only 1% of respondents anticipating a decline, moderate AM materials orders growth is expected in the coming six months.



Comparing the trend in the foreign market with that in the domestic market, as in the previous round, **a less optimistic outlook for foreign AM orders growth can be expected**. The lowest growth in new orders is expected for producers of AM machines, whereas companies involved in other categories can still anticipate growth, though not as robust as in the preceding surveys.

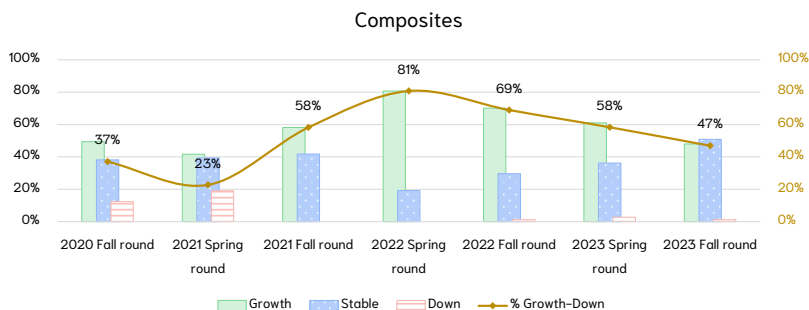


## AM MATERIAL TREND INDICATION

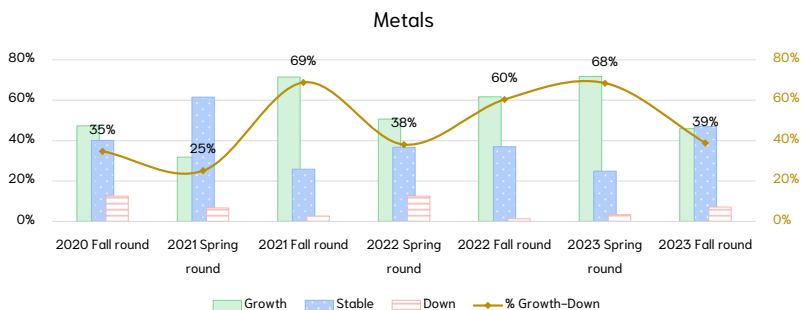
*Question: Please indicate the trend in total new orders by material over the next 6 months compared to past 6 months based on value.*

As seen on the preceding pages, AM material producers and distributors can expect steady growth in new orders in both domestic and foreign markets. As shown on the next charts, most materials are showing strong balances, indicating a growth demand path, albeit at a somewhat slower pace.

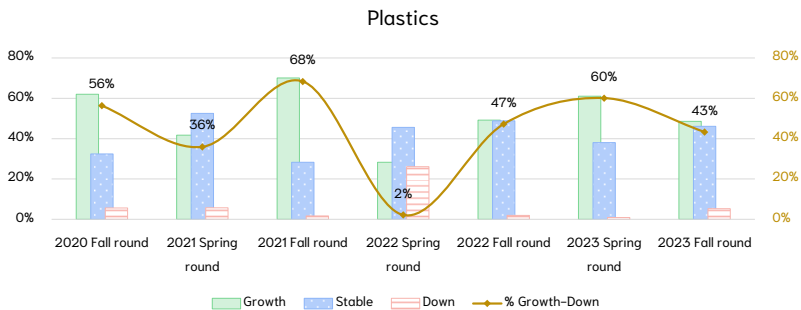
While the percentage of respondents reporting more stable orders has increased in recent rounds, **Composites** are expected to be the most in-demand AM material over the next six months. As shown in the graph below, although the percentage of respondents expecting growth is slightly lower than in the Spring survey round, a very positive development is the consistently low level of negative expectations over the last five rounds.



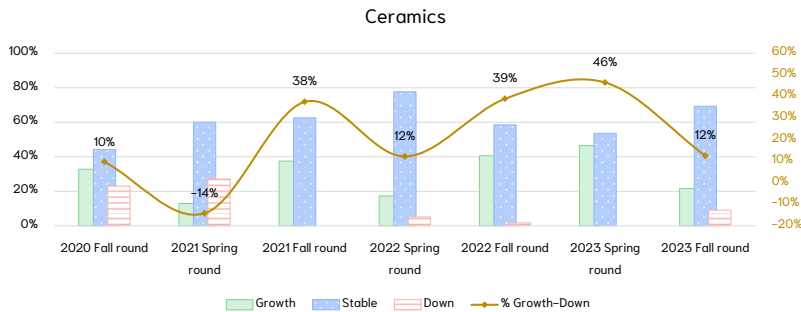
In contrast to the previous round of the survey, in which the metals category was expected to show the most robust growth, the expectations in the current round are for continued strong but reduced growth in new orders. This shift is the result of an increase in the proportion of respondents expecting new orders to fall (from 3% to 7%) and a decrease in the proportion expecting growth (from 72% to 46%). However, metals remain in the top three AM materials with the strongest demand growth over the next six months.



Among the AM materials, **plastics** remained in second place in terms of the highest expectations for new orders/use in the coming months. It is worth noting, however, that the proportion of respondents expecting more stable and negative new orders has increased, compared with fewer respondents expecting growth. As a result, the balance fell from 60% to 43%.



The least robust demand growth is expected for **ceramics**. As shown in the graph below, the percentage of participants expecting growth has decreased significantly in the latest round of the survey. Importantly, the proportion of participants expecting a decline in new orders has also increased from zero to almost 10%. As a result, the balance has reached its lowest level since the Spring of 2022.



Comparing the average balances for all materials, this round shows positive but slightly lower growth indications than the Spring 2023 survey results. AM companies offering solutions related to the use of **composites and plastics as materials can expect the strongest growth in orders over the next six months.**

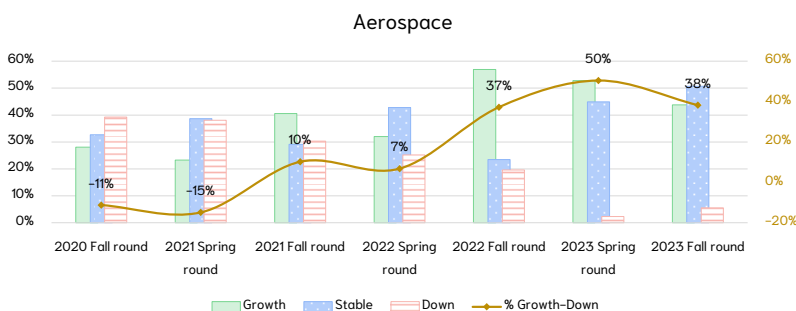
Although not shown in the previous graphs, growth expectations for the **'other materials'** category have decreased significantly (the balance has decreased from 53% in the Spring 2023 round to 21% in the latest round).

## BUSINESS TREND INDICATION: CLIENTS

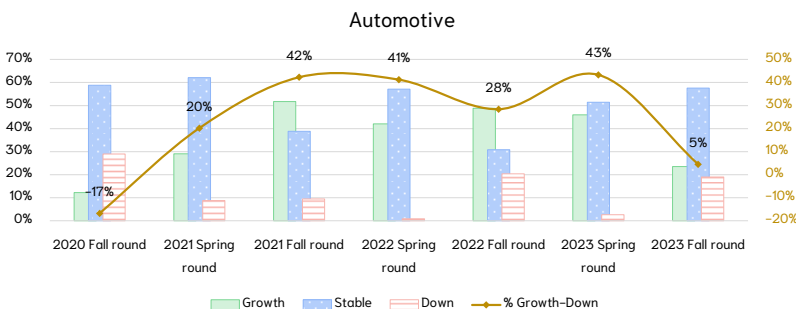
*Question: Please indicate the trend in total new orders by customer sector over the next 6 months compared to past 6 months based on value.*

A slightly lower level of optimism in the latest round is also evident when examining the orders expectations of the main additive manufacturing (AM) purchasing sectors. With the exception of the chemicals & pharmaceuticals sector, the survey results indicate that all other sectors have achieved lower balances compared to the previous survey round. While the aerospace sector is still expected to see the strongest growth in new orders, it is important to note that the automotive sector has seen the sharpest decline in balance compared to the previous survey round.

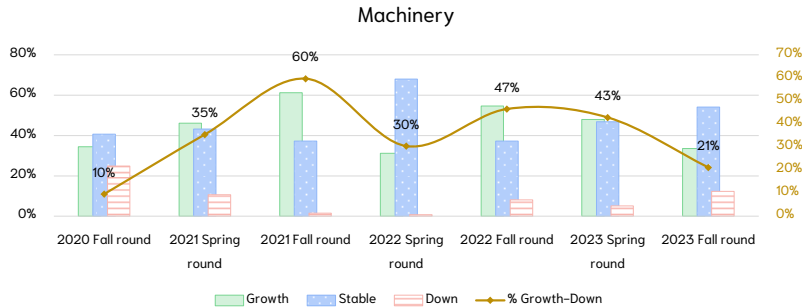
A reduced but still robust balance in the **aerospace sector** can be seen in the chart below. Although the percentage of respondents expecting growth has decreased significantly (from 53% to 44%), with very low levels of negative expectations, the aerospace sector is expected to maintain its position as the sector with the strongest growth in new orders in the coming months.



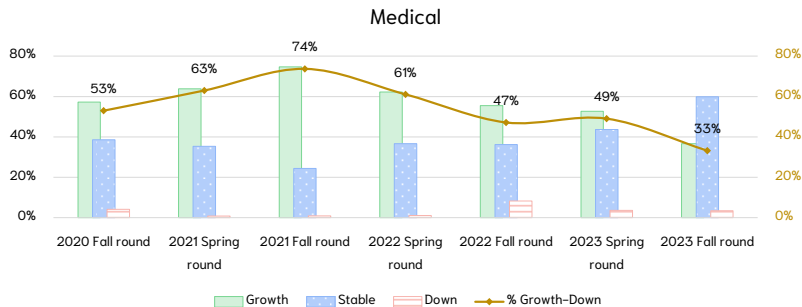
Following a notable upturn in AM order expectations from the **automotive sector** in the previous survey round, the current round shows a contrasting trend. The favourable balance of growth and decline has narrowed from 43% to 5%, with almost identical proportions of respondents anticipating growth and decline in orders compared to the previous six months. Given these shifts, it is expected that AM orders from the automotive sector will remain stable over the next six months.



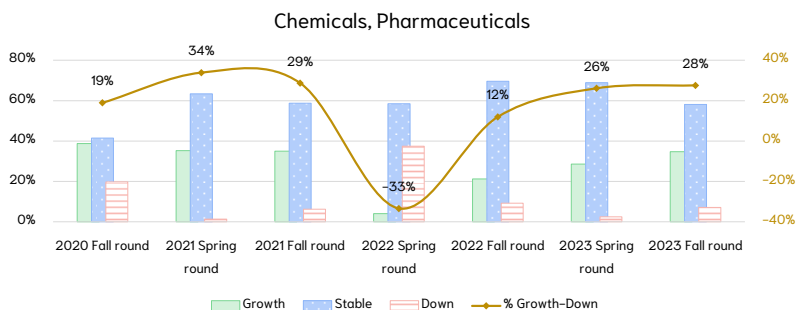
Regarding the expectations for new orders in the **machinery sector**, there has been a further decrease in the number of respondents anticipating a growth trend compared to the previous six months. Additionally, there has been a marked increase in the number of respondents expecting order books to decline or remain stable. Nevertheless, with a balance of +21%, the machinery sector continues to anticipate moderate growth in new orders over the next six months.



The latest data show a positive but less optimistic trend for the **medical sector**, with the balance falling from 49% to 33%. As indicated in the chart below, the most robust growth expectations for new orders from the medical sector were observed in the second half of 2021, amid the COVID-19 pandemic. The subsequent trend indicates a deceleration, with a shift towards more stable expectations from this sector. In the latest round, for the first time, the share of participants expecting stable new orders surpassed the share of participants anticipating growth in new orders. However, despite a slight dip in growth expectations, the medical sector remains in second place for the strongest expected growth in new orders in the short term.



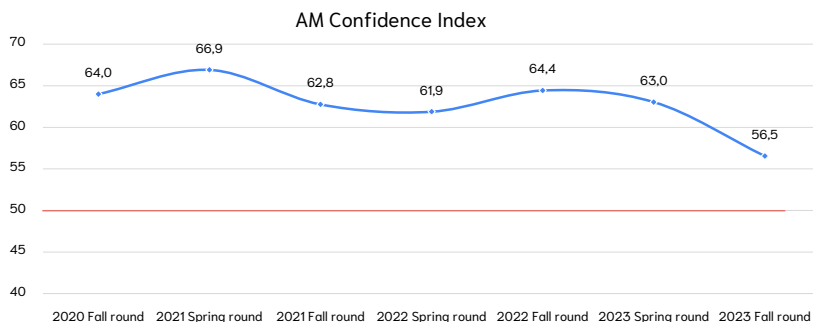
The latest survey results show that the balance in the **chemicals & pharmaceuticals** sector remained almost unchanged from the previous survey round at +28%. As shown in the graph below, the number of participants expecting new orders to remain stable has decreased, while the number of participants expecting both growth and decline has increased at a similar rate. Overall, with only 7% of respondents expecting a decrease in new orders, the stable positive trend of new orders growth is expected to continue in the coming six months.



Orders from **other sectors** are also expected to grow, a trend that is confirmed by the latest survey results, which show a positive balance of 32%. This balance remains relatively stable compared to 35% in the Spring 2023 round.

## AM CONFIDENCE INDEX

The latest survey results show a more pronounced decline in the AM Confidence Index to 56.5 points, the lowest level since the survey began. Although the index is still in the favourable zone above 50, it can be assumed that the current economic conditions and the less favourable financing opportunities are having a negative impact on the trend of AM investments.



## Associations supporting the report:



IN PARTNERSHIP WITH 



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Additive Manufacturing



### About CECIMO:

CECIMO is the European Association of Manufacturing Technologies. With a primary focus on machine tools and additive technologies, we bring together 15 national associations of machine tool builders, which represent approximately 1500 industrial enterprises in Europe (EU + UK+ EFTA + Türkiye), over 80% of which are SMEs. CECIMO covers 97% 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 25 billion euros in 2022.

### Contact:

Filip GEERTS, Director General, [filip.geerts@cecimo.eu](mailto:filip.geerts@cecimo.eu)

Anto JERKOVIC, Economist – Author, [anto.jerkovic@cecimo.eu](mailto:anto.jerkovic@cecimo.eu)

Vincenzo BELLETTI, Director of EU public affairs, [vincenzo.belletti@cecimo.eu](mailto:vincenzo.belletti@cecimo.eu)

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**cecimo**  
European Association of Manufacturing Technologies

[www.cecimo.eu](http://www.cecimo.eu)

+32-2-502-70-90

[information@cecimo.eu](mailto:information@cecimo.eu)