

## KEY MARKET TRENDS IN THE EUROPEAN ADDITIVE MANUFACTURING SECTOR

### Key remarks:

- ⇒ Strong European AM growth path in domestic and foreign markets.
- ⇒ Among AM materials, the highest orders expectations still for Composites and Metals.
- ⇒ During the next six months, the highest orders expected from the Medical and Machinery sector.
- ⇒ Steady growth and strong investment expectations for the AM sector.

## KEY MARKET TRENDS IN THE EUROPEAN ADDITIVE MANUFACTURING SECTOR

November 2022

Between September and November 2022, CECIMO, the European Association of the Machine Tool Industries and related Manufacturing Technologies, organized the fifth 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 trend. 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. The first part (marked as PART I) contains the results of the combined data of the CECIMO national associations' surveys and the VDMA survey. The second part (marked as PART II) of the report 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.

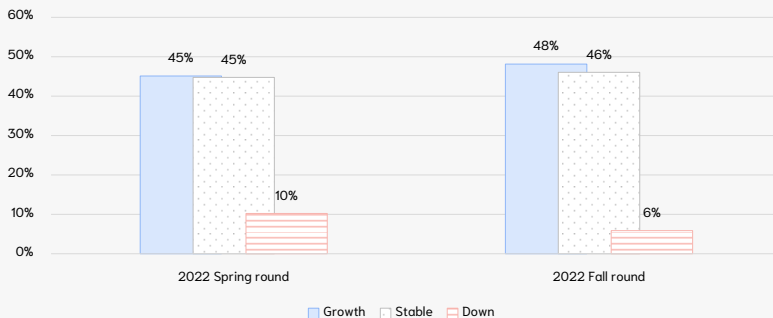
Please note that starting from the current round, results at the European level are obtained by weighting country-specific results with shares derived from the 2015 Machine Tools (MT) production levels (rather than equal shares for each country). As a consequence of this methodology change, the larger MT producing countries participating in the survey (such as Germany, Italy and Switzerland) have a greater impact on the results at the European level.

On the same basis, the results of previous rounds were recalculated in this report, so be aware that there is a difference when comparing the results of this report to previous reports.

\* 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.

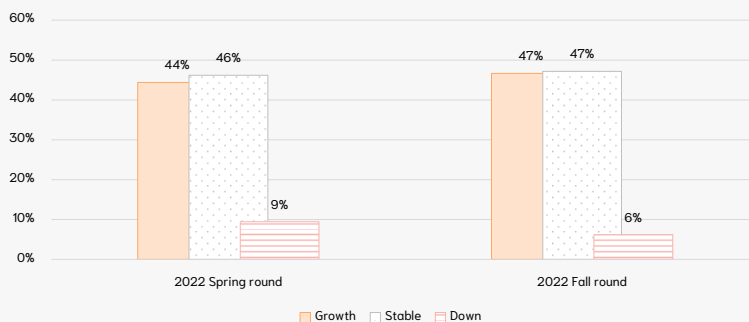
## AM TREND – HOME MARKET

Concerning the AM trend on the domestic market, compared to the results of the previous survey (CECIMO & VDMA), there is a slight increase in growth expectations, while the percentage of respondents that see a decrease over the next six months has been reduced. As shown in the chart below, with almost 50% growth indications, and only 6% of respondents predicting decline, Europe's AM sector is expected to grow further in the domestic market. Please note that due to changes in the methodology (see page 1) we also recalculated the results of the previous round.



## AM TREND – FOREIGN MARKET

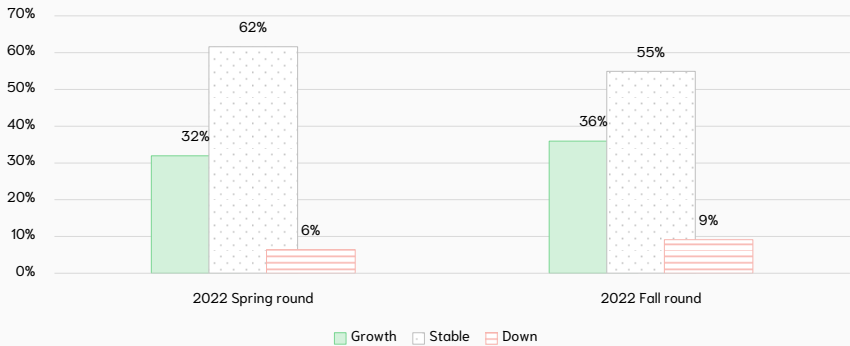
A similar pattern can be observed in the foreign market. The new survey results also show a slightly higher positive growth-down balance compared to the spring round. 47% of participants indicated that exports and foreign orders will grow over the next six months, with the same percentage expecting at least the same level of business abroad. Only 6% of participants expect a decline in the foreign market, slightly better than the results from the previous survey, where 9% of participants expected a slowdown. Please keep in mind that the results from the previous round have been recalculated and now show a lower rate of growth compared to the previous report. However, increasing business optimism is an indication of the strong foreign demand that the European AM sector can look forward to in the coming period.



## AM INVESTMENTS

While there is a visible increase of companies that reported that they expect increase in AM Investments, there is also a visible slight increase of those who expect decrease. However, with 36% of firms expressing growth expectations and 9% expecting lower investment, the percentage balance (+27%) is one percentage point above the previous reporting period (+26%).

Taking into account the strong growth of the additive manufacturing market, the positive investment path is expected to continue.



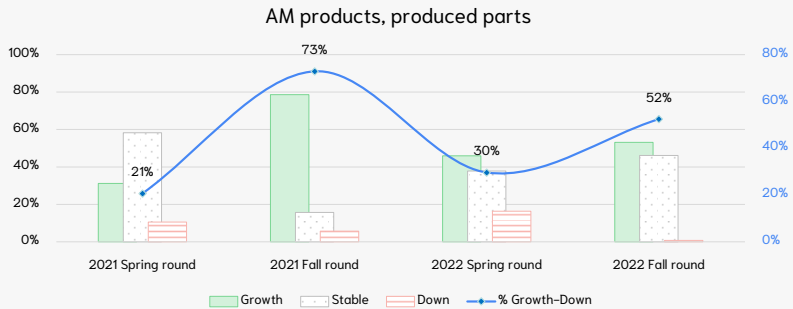
Note: The next part of the report presents the results of the CECIMO surveys based on the new methodology (Italy, Spain, Switzerland, the United Kingdom and Austria).

## AM TREND INDICATION OF THE HOME MARKET

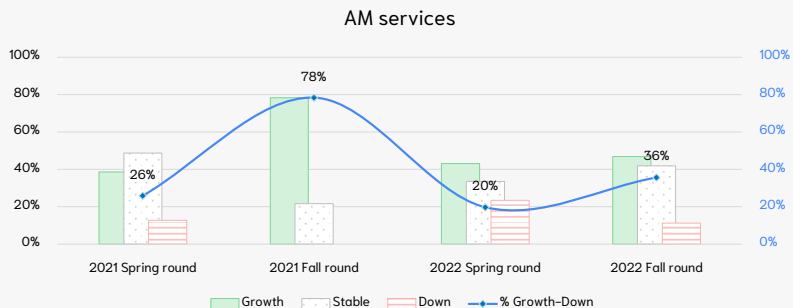
*Question: Please indicate the trend in new home market orders over the next 6 months compared to past 6 months based on value.*

Compared to the previous survey round, the new results show a higher and strongly positive percentage balance on the trend indication of the domestic market. New orders expectations are higher in all AM categories over the next six months (products/produced parts, machines, materials and services).

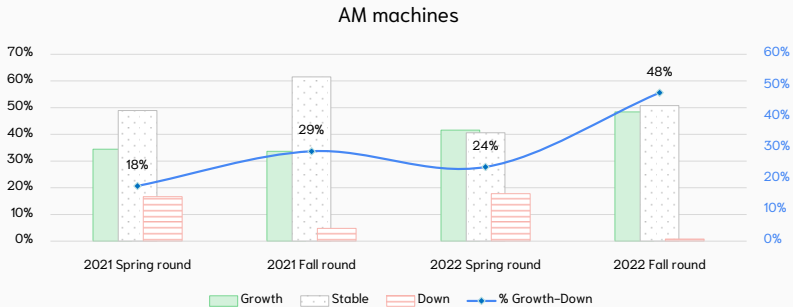
As in the previous report, the following charts show more detailed trends and percentages for each category in the previous four rounds. Due to the different weighting methodology, changes in the results of previous survey rounds may also be visible in the following charts.



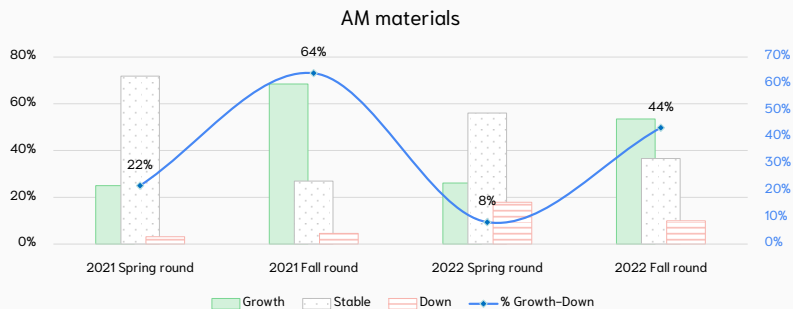
Like in the previous round, the AM products & produced parts category is expected to experience the strongest growth path in the next six months (growth - decline = 52%). As it can be seen in the chart above, there is visible a significant decrease in the number of respondents expecting orders for this category to decrease over the next six months (only 1% compared to 16% in the Spring round). Expectations for new orders for the AM services (graph below) also increased in the most recent survey. As the share of those reporting steady expectations and growth increased, the percentage balance reached a strong positive level (36%).



The second highest orders intake, compared to other categories is expected to be experienced by the AM machines category. As shown in the chart below, after a slight downturn in spring 2022, there is a significant increase in growth and stable expectations, while only 1% of respondents expect a decline. In line with that, AM machine manufacturers may expect strong orders growth over the next six months.



The AM materials percentage balance trend shows significant improvement compared to previous survey round. As shown in the chart below, there is a significant increase in the number of participants expecting a growth in AM materials orders, while the number of participants expecting a steady and negative situation has decreased. As a result, the percentage balance rose to 44%. Therefore, in consistency with increased expectations for orders in other AM categories over the next 6 months (products/produced parts, machines and services), an increase in AM material orders can be more than expected.



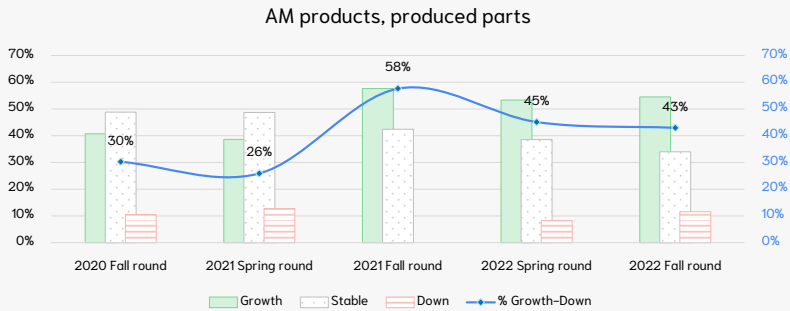
Overall, the previous charts indicate that domestic order expectations are higher than they were in the spring of this year. By comparing the average responses for all categories, in this round there is a significant shift from down towards growth expectations over the next six months. However, the current geopolitical situation, slowdown in European growth, inflation and rising energy prices may have an impact on domestic demand in the near term.

## AM TREND INDICATION OF THE EXPORTS

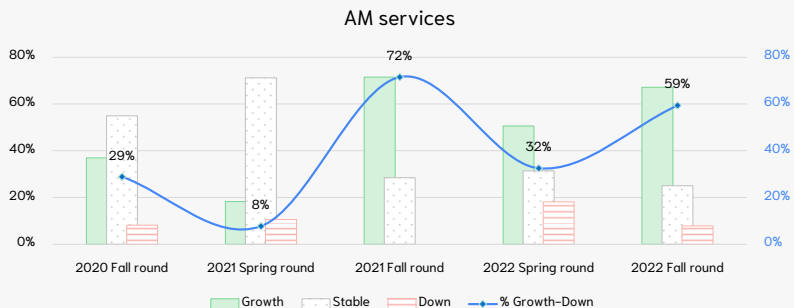
*Question: Please indicate the trend in new export orders over the next 6 months compared to past 6 months based on value.*

With few exceptions, respondents expressed generally higher indications for foreign/export orders compared to the previous survey round. Like for the domestic market, the following charts show a similar trend on average: fewer respondents report lower expectations and more respondents forecast a growth scenario. Please note that previous survey results may also differ if compared to previous reports as a result of the adoption of a new methodology.

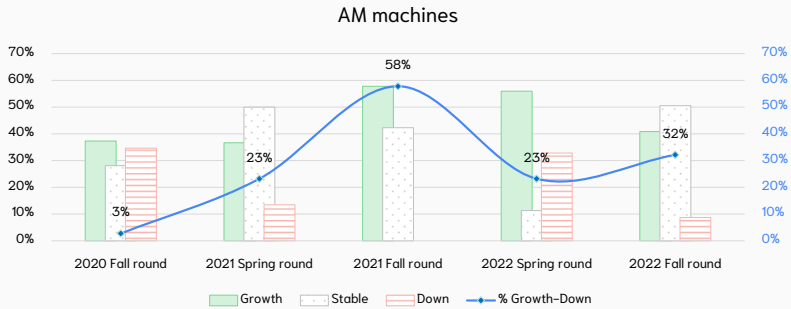
Regarding the latest results, order expectations for products, parts or components manufactured by AM machines should remain almost unchanged in the coming period. Although there is a small increase in those with lower expectations from the previous survey round, the percentage balance of this category is among the highest among the groups. This of course points to strong foreign demand for AM products, parts produced over the next six months.



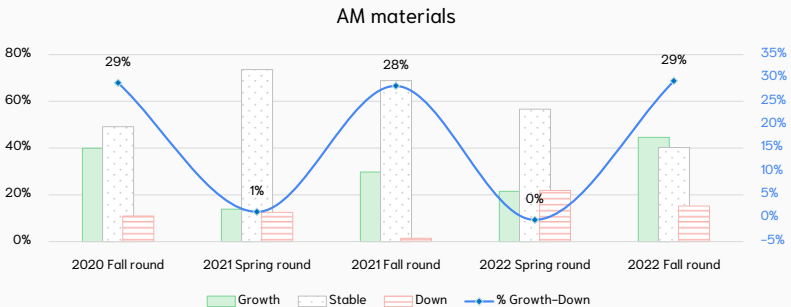
The highest order growth indications are in the AM services category, with a positive balance of 59%. In contrast to the previous reporting period, there is now also a significant decline in those who expect a decrease in AM services orders. Compared with the domestic market, AM service providers may expect slightly higher orders on the foreign market over the next six months.



As the chart below shows, there is a visible rise in expectations regarding foreign demand for AM machines. Growth expectations are lower than in Spring 2022 round, mainly due to the large number of respondents expecting more steady demand. However, there is a substantial decrease in the number of respondents expecting a downward trend. Although not as strong as on the domestic market, with a percentage balance of 32%, AM machine manufacturers might also expect moderately strong foreign orders.



Looking at the chart below, with AM materials orders, it is visible that each series of surveys in the fall has growth expectations, while the spring series shows a stable situation. Although with a higher percentage balance, the similar trend can be observed in the domestic market. This suggests that suppliers or AM materials can expect higher total orders in the fall-winter period than in the spring-summer period.



Similar to the situation in the domestic market, there is also a visible decrease in the number of respondents who expect a slowdown in the foreign market. In line with that, with the exception of AM products, parts produced, other categories recorded a positive increase in the percentage balance. Despite all the challenges affecting global economies, positive expectations from respondents, shows a strong foreign demand that can be expected within the next six months.

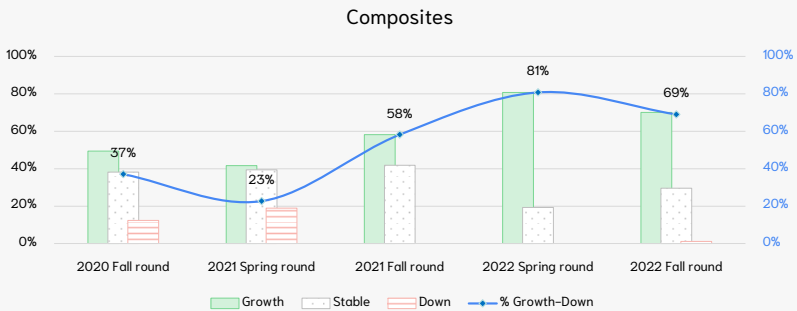


## AM MATERIAL TREND INDICATION

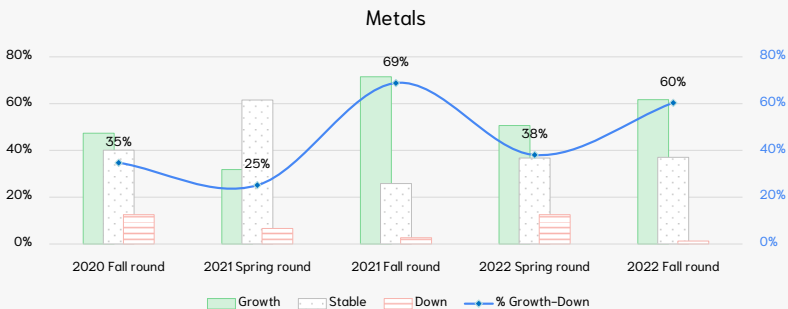
*Question: Please indicate the trend in total new orders by material over the next 6 months compared to past 6 months based on value.*

Compared to the spring survey, the AM materials' balances continue to show a strong growth path, but slightly different trends.

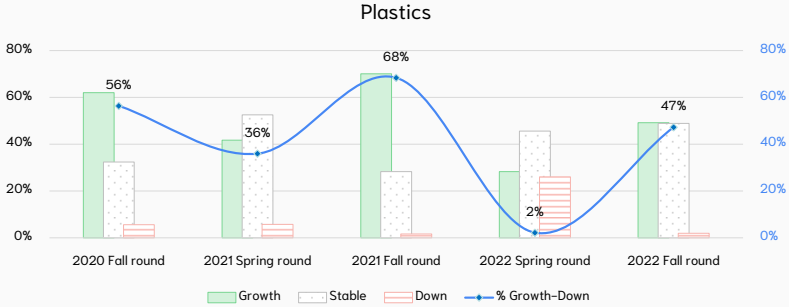
As shown in the chart below, following the increase in orders growth indications from the previous two rounds, there is a slight deterioration in expectations in this round regarding composites. However, the greatest growth in the next six months is still expected for this type of AM material. With a slight decline in growth expectations, there is a noticeable increase, mainly in the group of respondents who expect more stable orders in the following period. Keeping in mind the increase in orders from different sectors and in particular from Aerospace (see next pages), composites are expected to remain among the materials with the highest new orders.



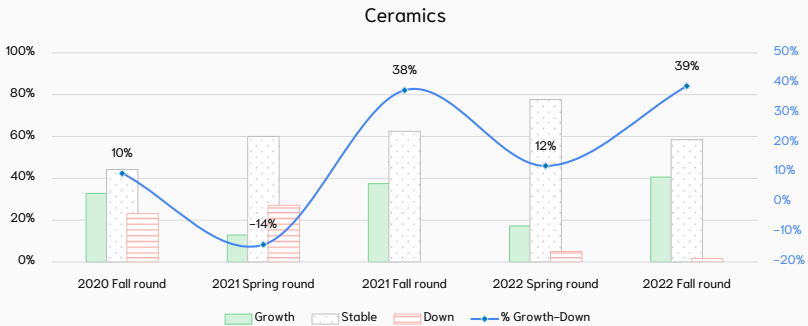
The metals category continues to be on the second place with a high percentage (growth-down) balance of 60%. Although slightly below the fall 2021 balance (69%), only 1% of respondents have negative expectations for the next six months.



There is a significant increase in expectations concerning plastics orders, compared with the results of the previous survey. Following a significant increase in growth expectations and with only 2% of respondents having negative expectations, the percentage balance (growth-down) reached 47%.



Following slightly lower expectations in spring 2022, the latest results show a further increase in expectations and a new growth path for ceramics orders. As the chart below shows, there is a clear shift from those declaring stable orders to those expecting a growth scenario in the last round (and a visible decline in the number of respondents with negative expectations).



Comparing the balances for all materials, this round shows much stronger positive indications than the Spring 2022 survey. However, it is important to keep in mind that the orders growth indications for some materials like plastics are still lower than they were in fall 2021. Like in the previous survey round, in the short term, the strongest orders could be expected by AM companies that provide solutions related to the use of composites and metal as a material.

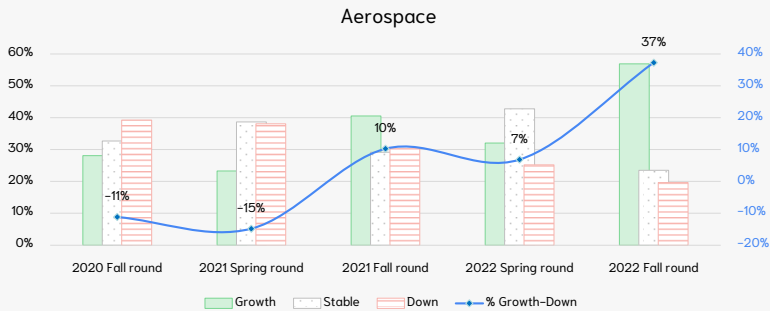
Although not shown in the previous charts, other materials category also has higher growth expectations with a positive growth-down balance of 56%.

## BUSINESS TREND INDICATION: CLIENTS

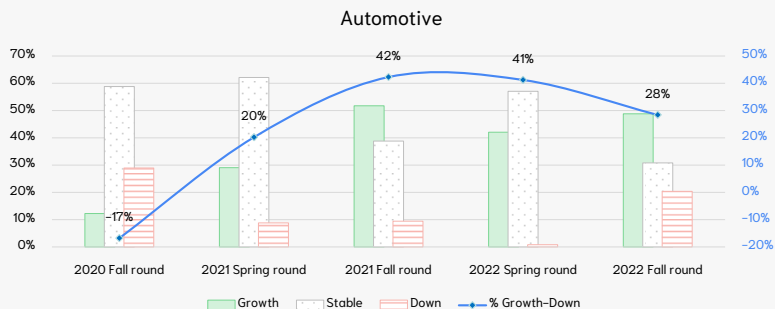
*Question: Please indicate the trend in total new orders by customer sector over the next 6 months compared to past 6 months based on value.*

In terms of the major AM purchasing sectors, compared to the previous survey, the percentage balance significantly improved for the aerospace, machinery and chemical & pharmaceutical sectors. According to the latest survey results, the strongest order intake can be expected from the medical and machinery sectors. As mentioned earlier, please keep in mind that we have recalculated the results from previous survey rounds.

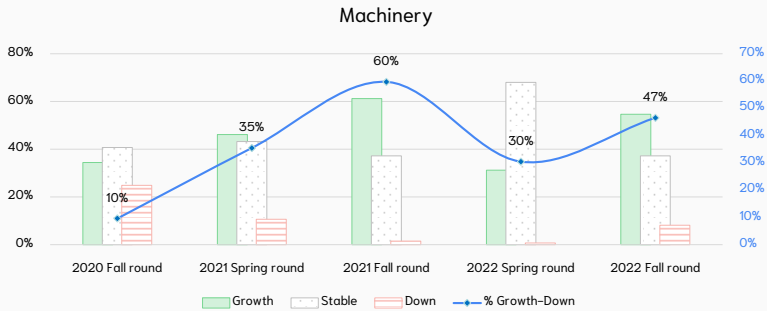
With the recovery of the aerospace sector, there is a significant increase in order expectations from the aerospace sector, compared to the previous survey round. As shown in the chart below, the positive percentage balance has increased from 7% to 37%, the highest level since the beginning of the survey.



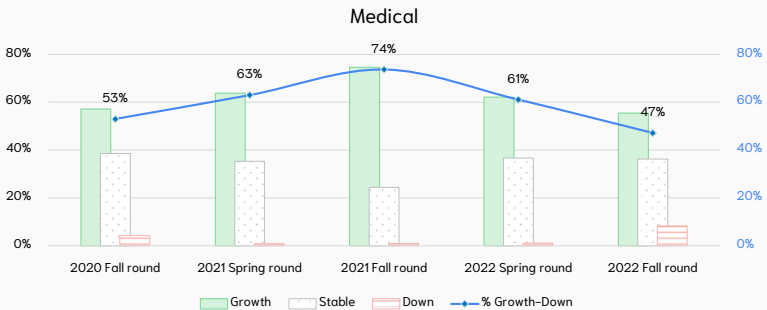
With respect to orders from the automotive sector, as shown in the chart below, there is a significant increase in the number of respondents with negative expectations. As a result, the positive growth-down balance declined from 41% to 28%. While expectations for orders are still high, it is clear that respondents reduced their expectations in the spring and now in the fall. These developments could be linked with the situation in the recovery of the automotive industry in Europe and worldwide. Because of supply-side issues, automakers still find it difficult to increase production levels.



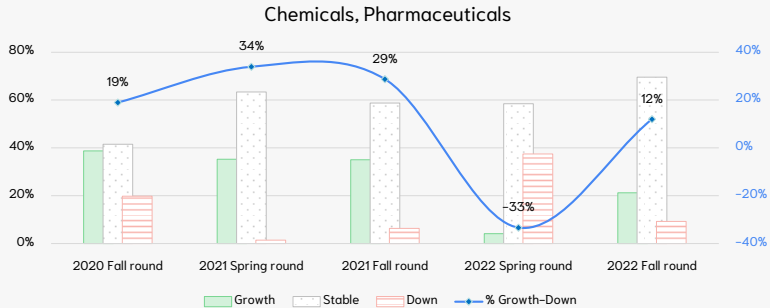
Compared to the results of the previous survey, the AM sector is now expected to experience a higher growth of the orders from the machinery sector. Indications of new orders from the machinery sector remain at high levels with a net balance of 47%, bringing this sector in second place at sectoral level. However, it is important to point out, as shown in the chart below, that expectations were higher in the fall 2021 round. Also, there is a slight increase in the proportion of participants expecting orders to decline over the next period compared to the previous survey.



Due to lower growth expectations and a rise in the number of participants reporting lower expectations over the next six months, the medical sector registered a net balance of 47% in this survey round. Despite lower order expectations, the sector retained the highest score among other sectors (same as the machinery sector). As mentioned in the previous reports, the high AM orders expectations from the medical sector correspond to the growing use of AM in different medical applications.



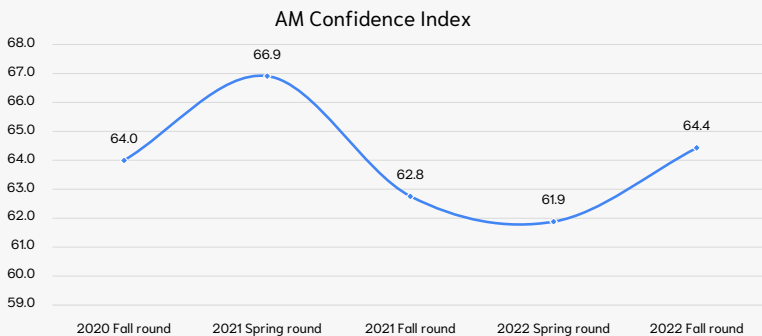
After negative expectations in the last survey, respondents now have more positive expectations for AM orders from the chemical and pharmaceutical industries. As it can be seen in the chart below, there is a significant shift between negative indications from the previous round and more stable and growth expectations in this round. However, the percentage balance level and expectations for additive manufacturing orders in this sector remain lower than the 2020–21 level.



While not shown in the previous charts, net orders from other sectors are expected to increase, with a positive balance of 66% in the most recent survey results.

## AM CONFIDENCE INDEX

According to the responses concerning the AM Investments trend, managers have increased their expectations regarding investments. After a slight decline in the fall 2021 round and the spring 2022 round (revised levels), the AM Confidence Index reached a level of 64.4 points in this survey round.



With levels always above 50, it is possible to see continued growth expectations for AM investments since the launch of the survey.



### About CECIMO:

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 22.6 billion euros in 2021. More than three quarters of CECIMO production is shipped abroad, whereas half of it is exported outside Europe.

### Contact:

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

Anto JERKOVIC, EU Public Affairs 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)

Copyright © 2022 CECIMO. All Rights Reserved