CELIMO
European Trade Association for Machine Tools, Tooling and Technologies

CELIMO Roundtable

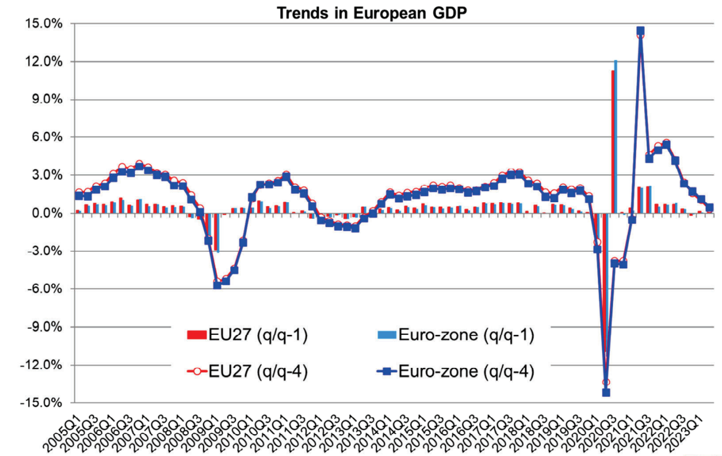
A weak outlook for Europe

EMO Hannover, Wednesday 20th September 2023

Overview of the European Economy

- **Very little growth in GDP in 2023 …**
- **… but a recession was avoided for the EU.**
- **There is a mixed picture for individual countries with different timings at play**
- **The latest forecasts point to modest growth for 2023 and 2024 with a recession still possible**

GDP weak recently …

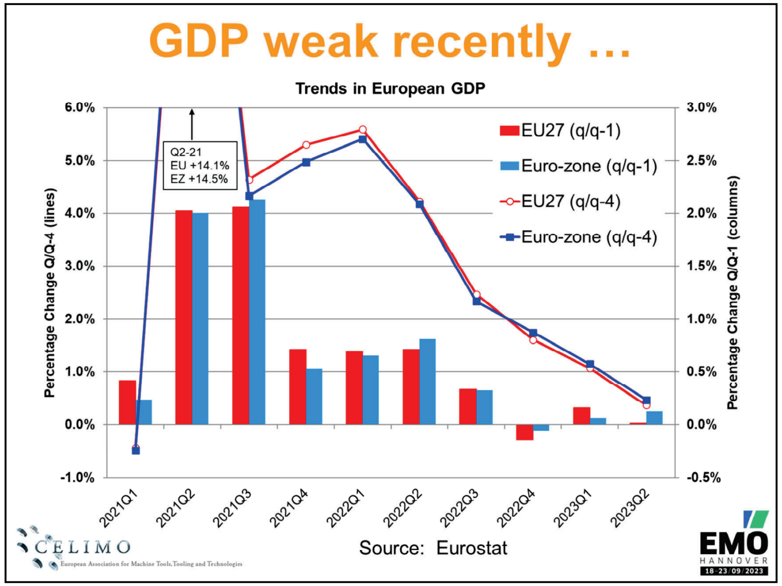


Source: Eurostat

Economic growth has been slowing over the past few quarters, although the distortion from the Covid-pandemic make this chart almost impossible to interpret. For the most recent data.

Even starting at 2021 still leaves some post-pandemic effects in the early quarters but it does make the recent trends clearer.

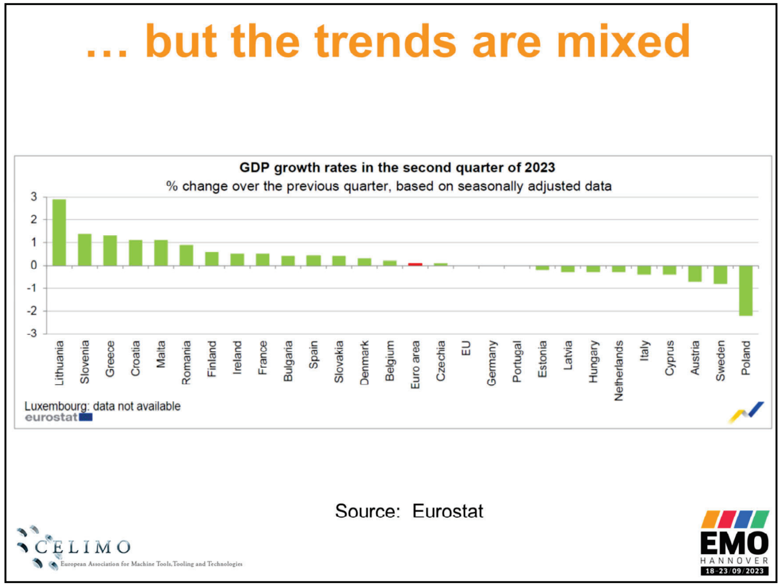
Both sets of geography saw GDP contract marginally in the final quarter of 2022 but avoided a recession with an equally modest improvement at the start of 2023.



Over the past three quarters we have seen some divergence between the EU and the sub-set for the Euro-zone block.

Although both data series are affected by large swings in the figures for Ireland (sometimes described as a financial system with a country attached because of the large number of multi-national HQ operations based there), the impact of the trends in Germany also play a part in this.

The reversal of the position in Q2-23 comes from weakness in some of the non-Euro countries which have a close economic relationship with Germany (Czechia, Hungary, Poland, etc.).

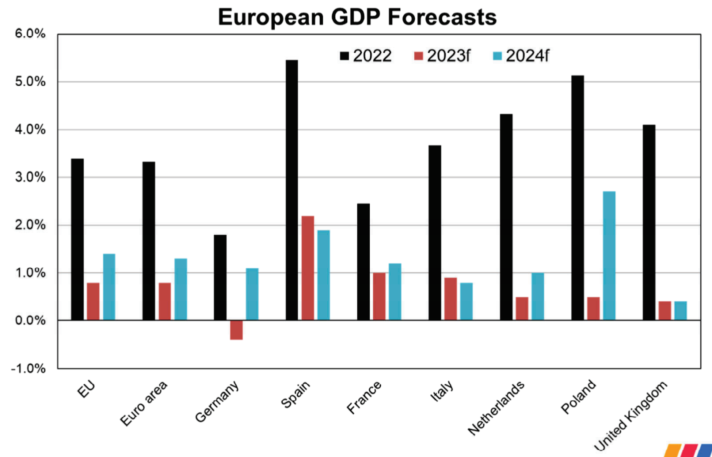


This shows the latest quarter-on-quarter growth rates which, although a single period snapshot, do illustrate the different positions, almost regardless of how you look at the data.

For the large countries, Italy is in negative territory and Germany is neutral but both France and Spain saw some growth.

Among the non-Euro countries, there was a sharp fall in Polish GDP, with a more modest reduction for Hungary but Romania and Bulgaria grew in Q2-23

GDP Forecasts



Source: Eurostat (data) and European Commission (forecasts, except UK)

With GDP growth in 2022 still being elevated because of the recovery from the pandemic (this is often a base effect from growth through 2021), the latest forecasts from the European Commission (published on 11th September) show only modest growth at best for 2023 and not much better in most cases for 2024.

The forecasts from the European Commission only covered a limited number of countries but the performance of Spain is notable; their economy has a large tourism sector and a good summer is largely the reason for their growth being stronger. Also, it is worth noting that a positive trend for the calendar year, does not necessarily mean that a recession can be avoided.

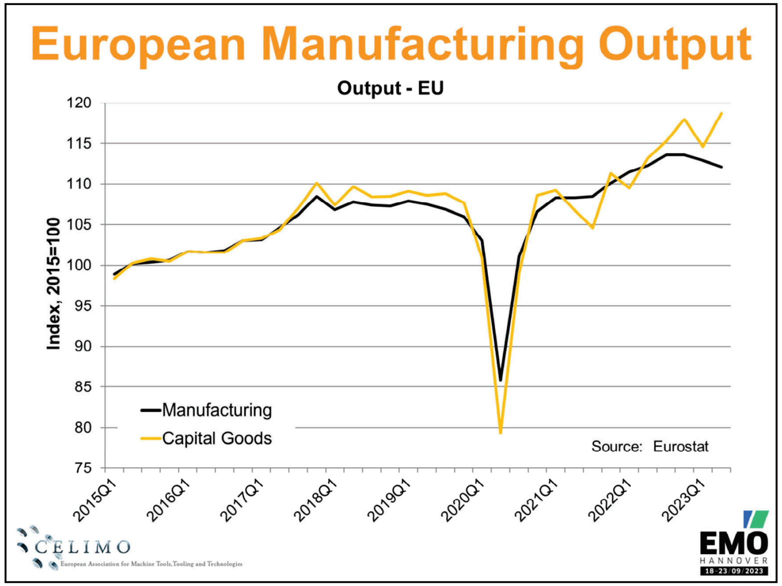
Note: The EC forecast were compiled before a data revision for Germany raised GDP level in the first half of 2023 which will probably turn the forecast downturn into a small positive.

European Industrial Trends

- **Manufacturing output falling …**
- **… although capital goods is still on the up …**
- **… as the automotive industry recovers**
- **PMI have been negative for some time …**
- **… capacity utilisation is also down.**
- **Interest Rates have risen rapidly but may be at the peak of the current cycle**

Output of the manufacturing sector recovered after the pandemic but has been on a downward trend in the first half of 2023.

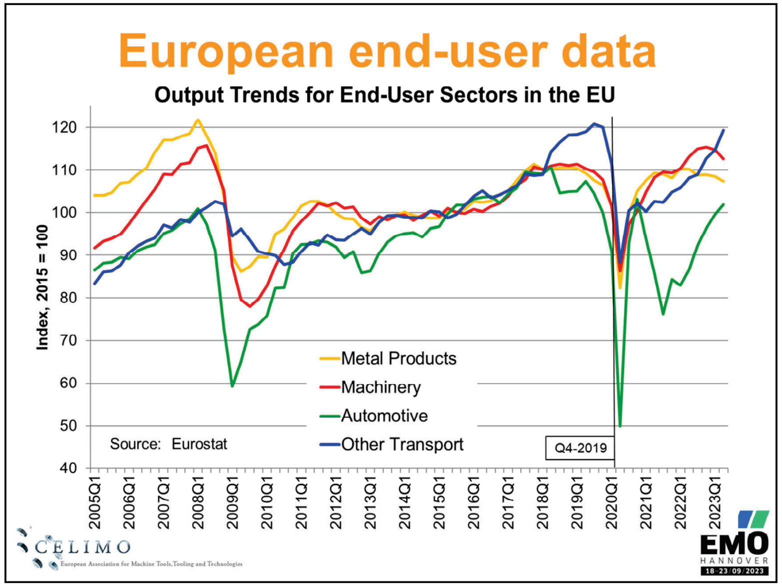
This is despite the continued growth in the capital goods sector which is driven by the recovery in automotive output. This industry had a good recovery immediately after the pandemic but was then afflicted by a shortage of components, especially electronics.



Over the past year, output has recovered as order backlogs have been worked through but we are probably close to the point where weak demand for new vehicles will become the main constraint on output.

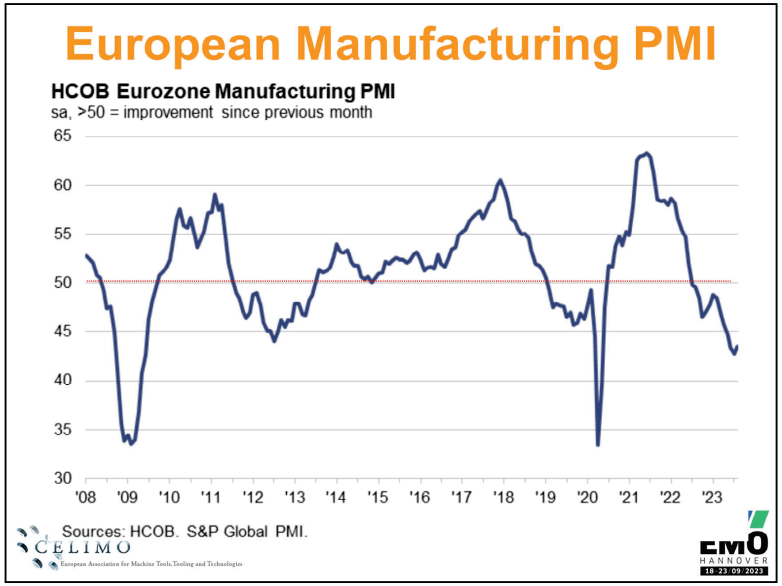
Other parts of the manufacturing spectrum, especially those in the capital goods section, filled the gap to pick up the slack from automotive.

The growth in the aerospace industry (a majority of the “Other Transport (Equipment)” group continues and output here is almost back to its pre-pandemic high.



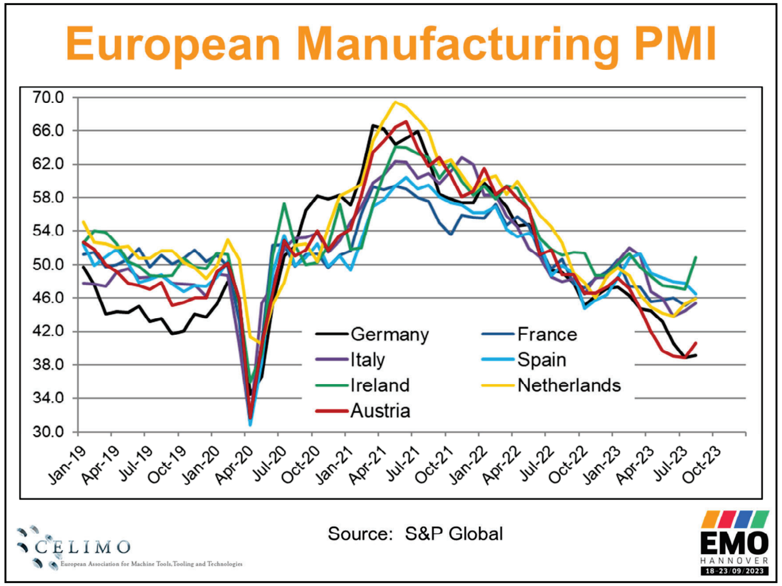
The Machinery industry has also done well despite sharing some degree of problems from supply chain shortages (machine tool manufacture, for example, is part of this industry) but this is one of the areas of weakness that has emerged in the first half of 2023.

Metal products usually lies somewhere between the other industries on this chart and it does appear that it is closer to the machinery group as it has also had a mild downturn this year.



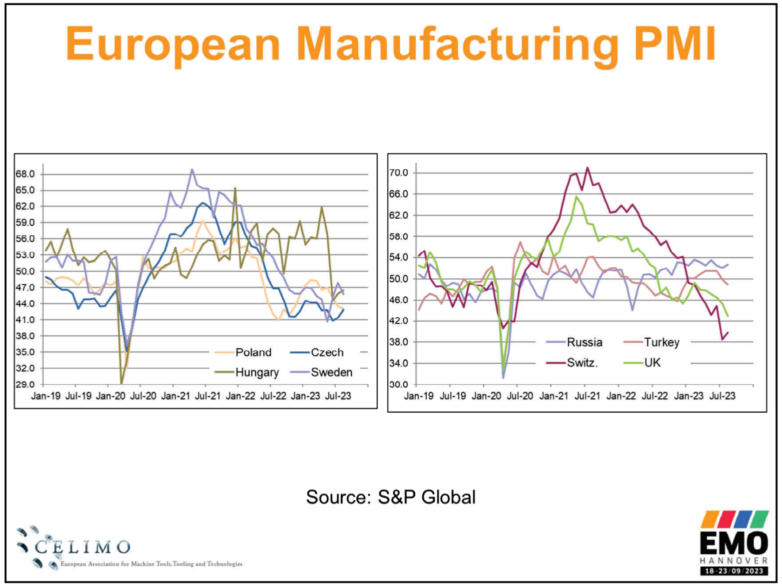
The manufacturing PMI (Purchasing Managers' Index) for the Euro-zone has been below 50 (the point which divides expansion of the sector and contraction) for 14 months.

The previous periods of weakness on this chart are around the global financial crisis (2008-09), the euro-crisis (2011-13) and the Covid pandemic (2020); however, it worth noting that the Euro-zone PMI had been negative through most of 2019 and looked to be recovering before Covid emerged.



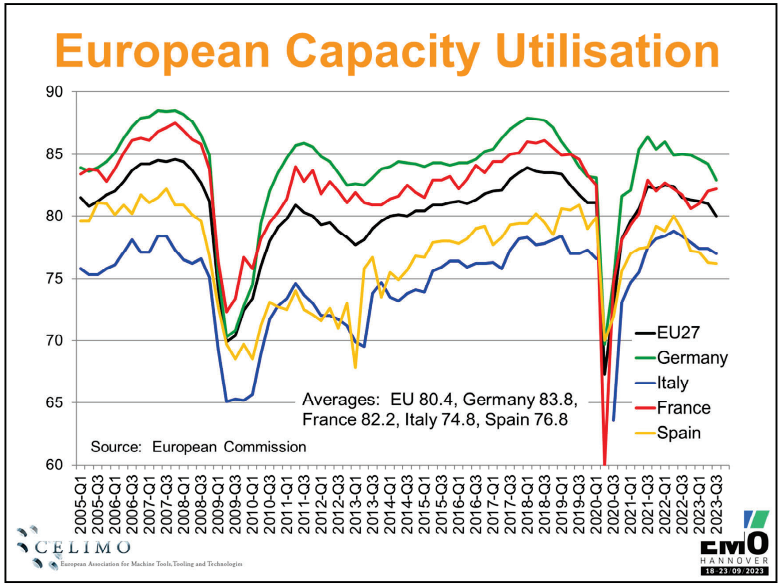
There are similar trends in most of the Euro-zone countries (the 8-country aggregate also includes Greece which has been left off this chart for clarity) but we have seen some differences in magnitude.

Most notably, over the past few months, Austria (red line) and now Germany (black line) have been noticeably weaker than others. While this does not appear to have affected other euro-zone countries too much, the weakness in the German manufacturing sector has manifested itself in other nearby nations.



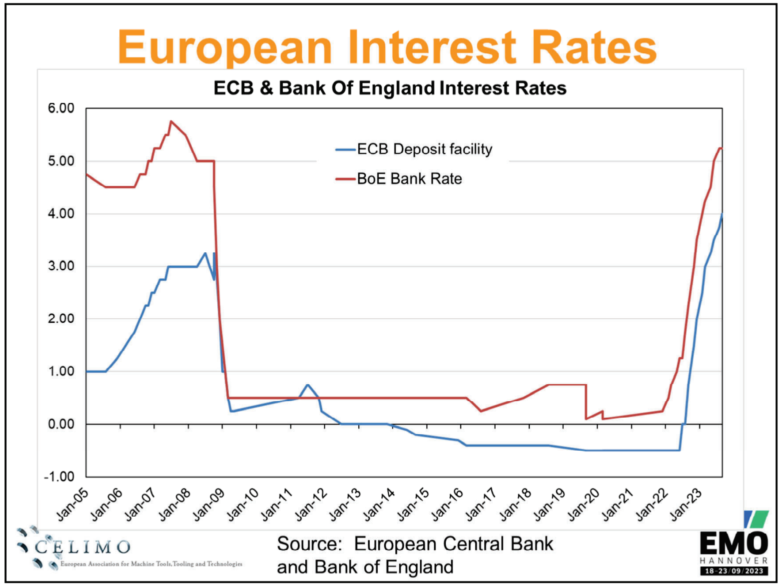
On the left-hand chart we can see that it is only Hungary that has bucked the trend (at least until the Summer) of having sharply negative PMI readings for the manufacturing sector and in the right-hand chart we can see that Switzerland, which had been one of the global stars, has been on a downward trend since the middle of 2021 and is now, along with Germany and Austria, one of the weakest readings across the world.

Turkey had been one of the few countries to have a PMI above 50 through the middle of this year but it too has now slipped back as the impact of the weakness in European markets starts to bite. Finally, the UK is still on a downward trend and has in negative territory for 13 months.



The latest trends suggest an easing of capacity utilisation in the key Euro-zone countries, although France has had a couple of good quarters this year (the latest data point is labelled as Q3-23 but, given the data collection periods, is really covering the 2nd quarter).

Care is needed in comparing between countries as the "natural" level of capacity utilisation varies – this is shown by the average levels shown in text on the chart. In the latest figures, Italy is well above its long-run average, the EU is slightly higher, France is exactly on the trend and Spain and Germany are slightly below their respective trend levels.



The pace at which both the European Central Bank (ECB) and the Bank of England (BoE) have been raising interest rates in the face of the acceleration in inflation is marked, with the ECB's decision on September 14th to raise rates again by 25 basis points set a new record high. However, they also signalled that this is likely to be the last increase in the current cycle as they judged that "the key ECB interest rates have reached levels that, maintained for a sufficiently long duration, will make a substantial contribution to the timely return of inflation to the target".

UK interest rates are usually higher than those set by the ECB and the current tightening cycle began a couple of months earlier than in the Euro-zone (and before Russia's invasion of Ukraine". There is a 50:50 chance that the BoE will raise rates again when it meets on 21st September, but it does seem that the UK is also close to the top of the cycle of rate rises.

The question for everyone, especially those looking to finance investment, is when will they start to fall?

EMO 2023
CELIMO Roundtable Meeting

20th SEPTEMBER 2023

presented by
Japan Machine Tool Distributors Association
(JMTDA)

I wish to express sincere thanks to CELIMO for excellent arrangement and for giving us the opportunity to make a presentation at the Roundtable Meeting.

Japan Machine Tool Distributors Association (JMTDA)

ESTABLISHED: 1970
NUMBER OF MEMBERS :
REGULAR MEMBERS - 80 COMPANIES
(BOTH WHOLE SELLERS AND DIRECT DISTRIBUTORS)
ASSOCIATE MEMBERS – 67 MACHINE TOOL BUILDERS
9 LEASING COMPANIES
TOTAL 156 COMPANIES

First of all, let me explain briefly about the JMTDA.

It was established in 1970 and celebrated its 50th anniversary in 2020, the year of the Tokyo Olympic Games.

As shown in the slide, we have Actual number of members is as shown in the slide. 80 regular members, 67 machine tool builders who are associate members and 9 leasing companies (also associate members).

Our main activities are education program, technical study meetings & market information exchange among members.

JMTDA Topics

The educational course, SE (Sales Engineer) Certification System, for sales personnel of member companies and related industries has 32 years history since its initiation in 1991.
Total number of students exceeded 10,398 and the number of the students with SE qualification reached 3,891 last year.

In June 2022, new board members were elected, and Mr. Kenji TAKADA, President of IDAKA & Co. Ltd. was elected as a new chairman of the board.

New Chairman, Mr. Kenji TAKADA

Mr. Takada was elected in 2022 as the new chairman of the board of JMTDA.

As our main activity, we have run an education program for sales personnel of members and related industries since 1991.

The total number of students exceeds 10,398 and the number of the students with the SE qualification reached 3,891 last year.

In our education program, we run three types of courses.

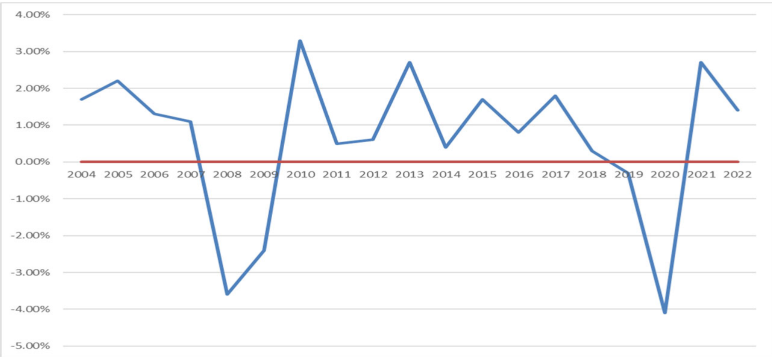
JMTDA One of Main Activities: Education

1) Basic Course: Acquiring basic knowledge of Machine Tools for new employees
2) SE Course: Providing further knowledge and skills for Sales Engineers. Qualification Certificate will be given after examination.
3) Permanent SE Course: Higher training for the SE qualified persons.

1) Basic course for acquiring knowledge of Machine Tools for new employees.
2) SE Course that provides further knowledge and skills for Sales Engineers. A qualification certificate will be given after examination.
3) Permanent SE Course that offer a higher level of training for those people with the SE qualification after 10 years of experience as a qualified SE.

This picture shows the basic course. In addition to the classroom lecture, students make a field trip to industrial technology museum or to watch cutting demonstration by machining center in an institute of technology.

Trend of Japan's Economic Growth Rate



Source : Economic and Social Research Institute

Japan's economic growth is still slow. COVID-19 seriously affected the economy in 2020, with the fall in GDP worse than during the Lehman's collapse in 2008.

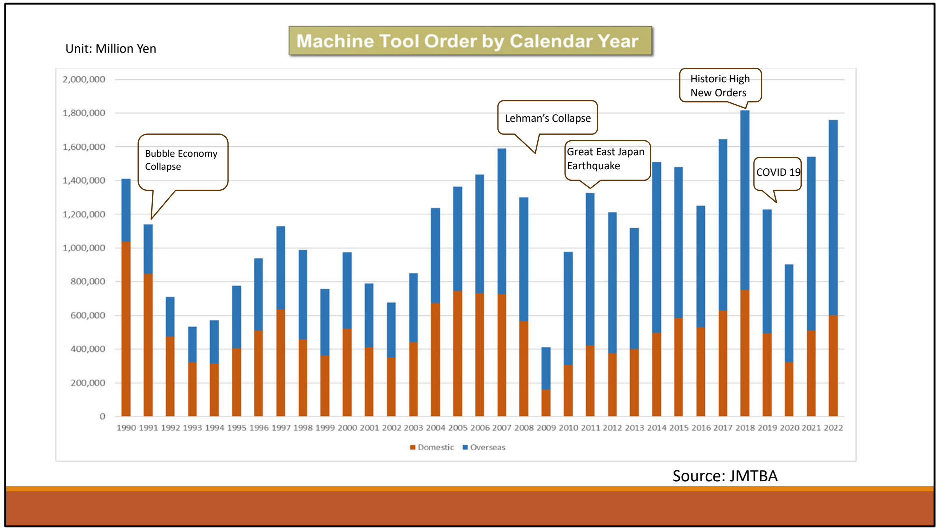
The recovery is continuing despite the weakness of the Yen and increases in raw materials prices.

JAPANESE ECONOMIC OUTLOOK

COVID-19 restrictions being loosened, recovery of Japanese economy continues in spite of weaker Yen or low material prices hike.

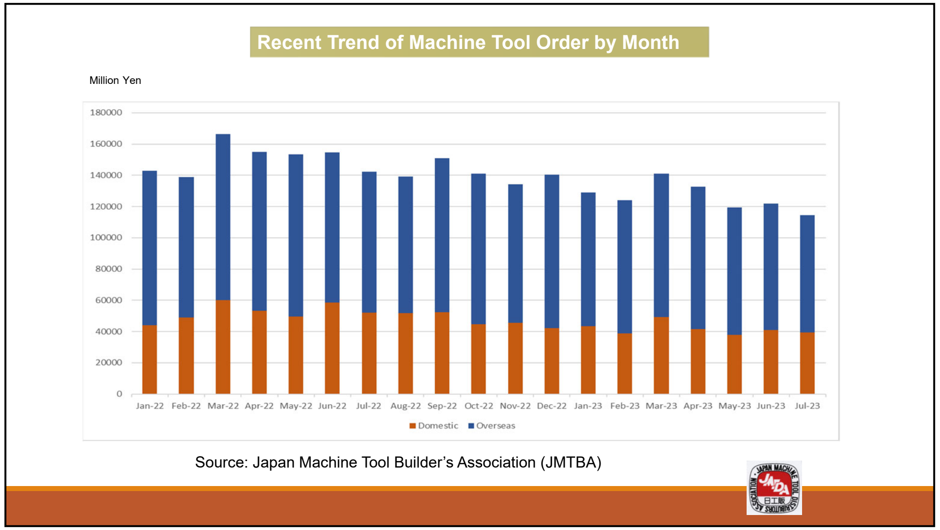
Weaker Yen will certainly increase costs of import material, but the performance of enterprises in general has been improved through optimization of the operations and high level of corporate profits supports capital investments especially in digitalization, decarbonization and robotization.

However, low overseas demand will continue to restrain growth. Manufacturing industry is holding off the orders due to pessimistic view of foreign demand notably from China.



Now, I would like to go into the Machine Tool business. This slide shows new orders received from 1990 to 2022. As you know, the market is often affected by major changes of the economic environment.

In 2018, we had the record high amount of new Orders – a total of 1,816 billion Yen - and in 2022, the second highest total was achieved.

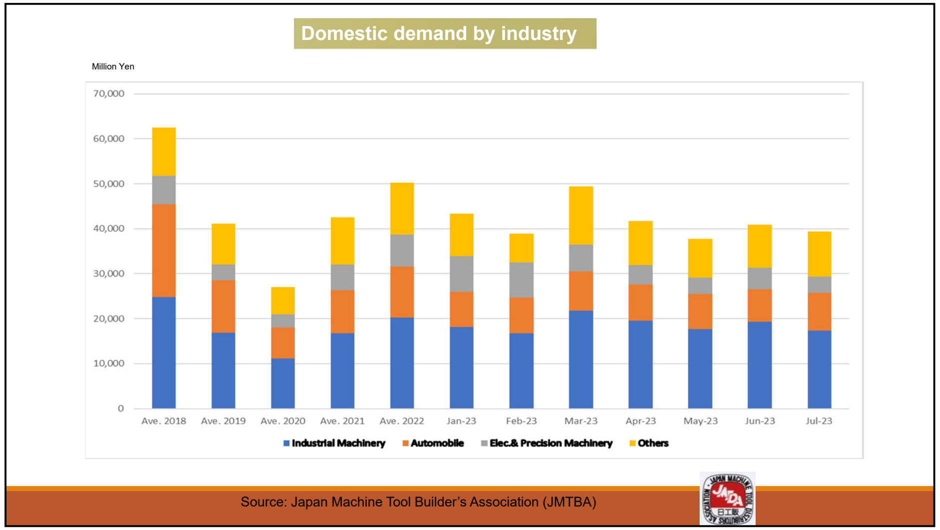


This is the recent situation of new orders, starting at the beginning of 2022. As you can see, both domestic and foreign demand are dull since mid-2022.

Domestic demand is affected by suspension of investment in production of combustion engines and low production level of the Automobile industry due to lack of semi-conductors etc.

For foreign demand, the weakness is due to geographical risk and uncertainty and a slow down in China.

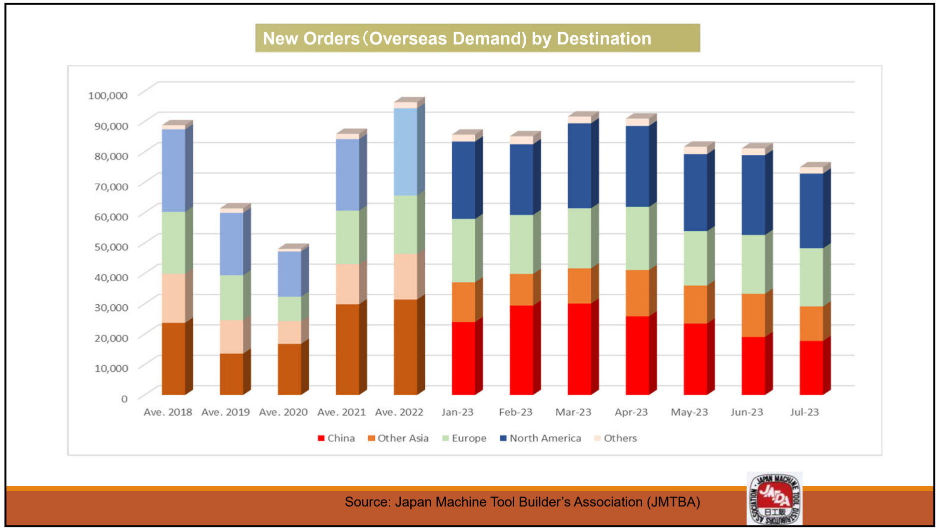
Since automobile production is growing again, we expect domestic demand will increase to the end of the year.



This slide shows domestic demand by industry.

Compared with year 2018 or 2019, the share of the Automobile industry has been decreasing.

From the start of 2022 to February 2023, demand from semi-conductor industry was important and is now low according to global demand.



This slide shows overseas new orders by territory. In 2022, overseas demand reached a record high figure; however in 2023, Chinese demand is clearly decreasing.

SUMMARY AND NOTES

Japanese domestic market is still dull, however, as production of automobile is coming back, it is expected to be more active to the end of the year. All automobile OEM's declare to stop new investment for combustion engines and to change direction to BEV, PHEV or FCV. Development of new components such as e-Axle or new type of battery as well as gigacasting is still underway.

In 2022, we had good business in semi-conductor manufacturing. We expect it will come back next year. Automation or robotization is still a good source of business because of lack of manpower in Japan.

This year, total volume of new orders will be affected by slow foreign market notably China. Recently, to avoid US ban, many manufacturers including Chinese shift their production from China to Mexico or Canada and some to South East Asia.

New products announced by Japanese machine tool builders feature eco-friendliness or new technology such as DX, IoT, and multitasking machine (cutting, grinding, AM, lazer).
Regarding AM, interest from the customers especially mold area is gradually increasing and they are on the way to master it.

As distributors, our challenge continues to cope with such changes, acquire new knowledge, and find new area of business.

Thank you for your attention !

JMTDA

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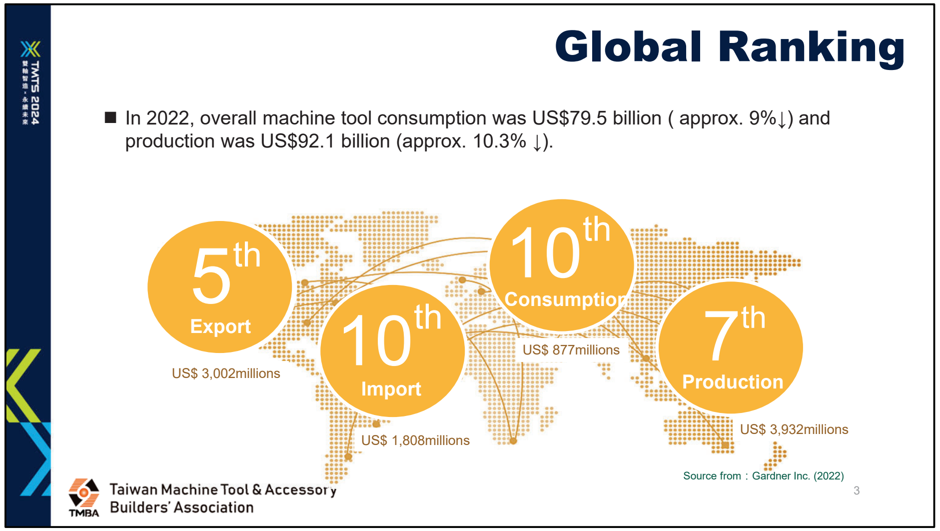
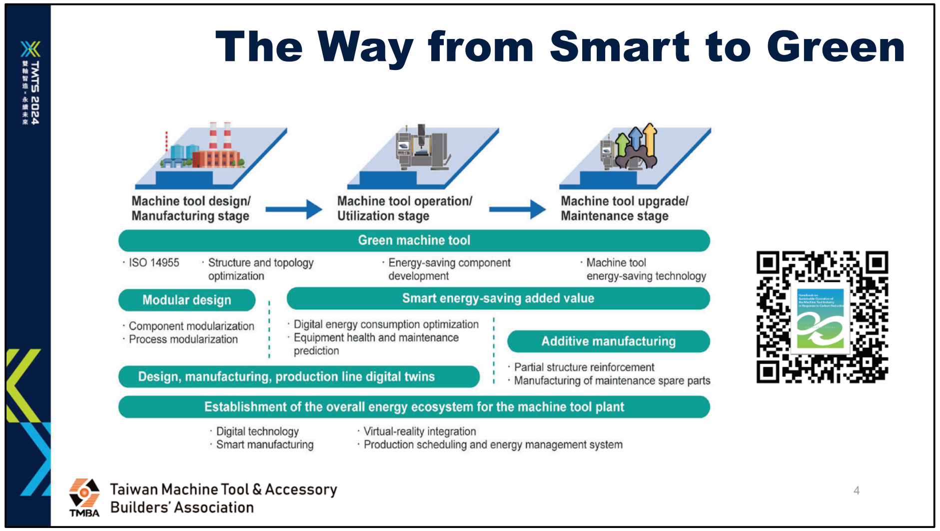


Both production and consumption of machine tools fell in 2022 but Taiwan is still the 10th largest market, worth US$877 millions last year.

The largest export markets for Taiwan were China, USA, Turkey, Netherlands, Italy, Vietnam and India. The European market overall takes about 20% of Taiwanese machine tool production.

The market is weaker in 2023 but TMBA expect an improvement in 2024.



The association has launched an imitative to help its members to transition to a net zero environment. It has published a guide covering 7 concepts across the supply chain.

This green transition will be a major theme of the TMTS exhibition in Taipei in 2024.

Mr Daniel Chen took over as Secretary General of TMBA in March 2023.

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AMT

U.S. Economic Update

IAN STRINGER
VP – Data Strategy | AMT

1

Ian Stringer

VP – Data Strategy

AMT – The Association For Manufacturing Technology

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2

RECENT MACRO TRENDS IN MANUFACTURING TECHNOLOGY

GOVERNMENT INVESTMENT

- Infrastructure Bill, Chips Act, and Inflation Reduction Act have massive incentives for manufacturers

CONSTRUCTION SPENDING

- $108 billion in construction spending for new factories in 2022
- At the same time warehouse construction spending is down

SUPPLY CHAIN

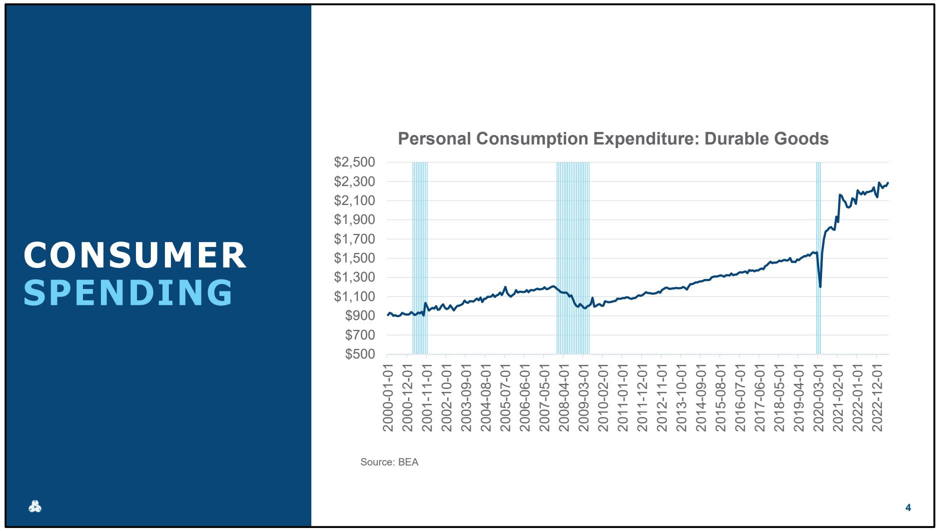
- Shortening and Diversifying Supply Chains
- Rebirth of Industries
- Material Shortages

3

There are some positive macro-economic trends in the US at the moment, with incentives for the manufacturing sector arising from three initiatives from the US government.

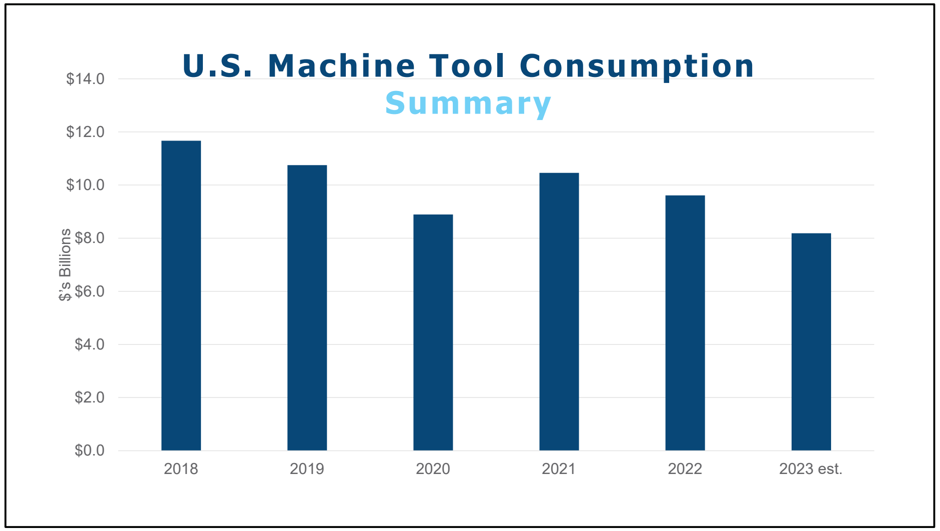
The increase in infrastructure spending is concentrated in infrastructure and factories (the latter especially for batteries and related equipment for the automotive industry) but spending on warehousing is lower.

The process of re-shoring – bringing manufacturing back to the US – is continuing to add a boost to the demand for machine tools.

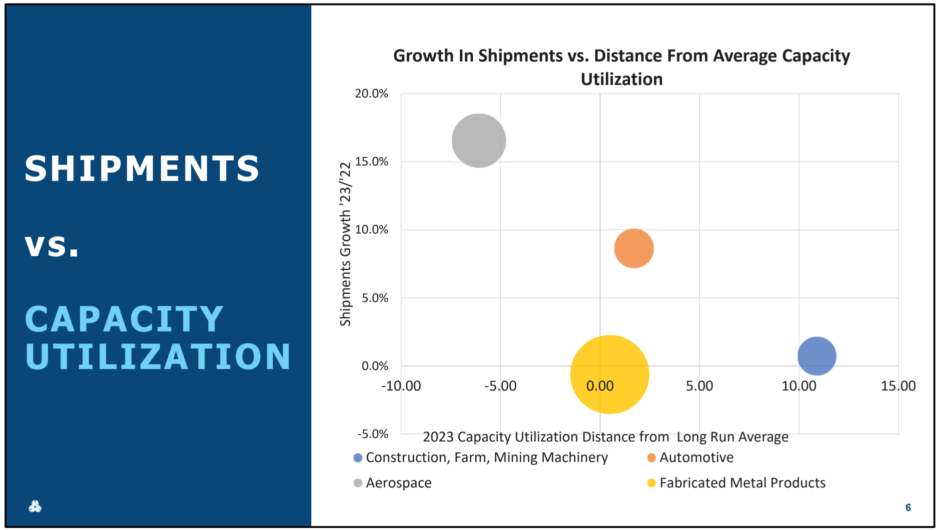


Machine tool consumption is being driven by consumer spending on durable goods; in turn, this is possible because of the stimulus money that the US government put into the economy in the wake of the Covid pandemic. As a result, spending is above the pre-pandemic trend level.

However, this has driven inflation up, leading to the Federal Reserve ("the Fed") increasing interest rates which is now having a dampening effect on investment.

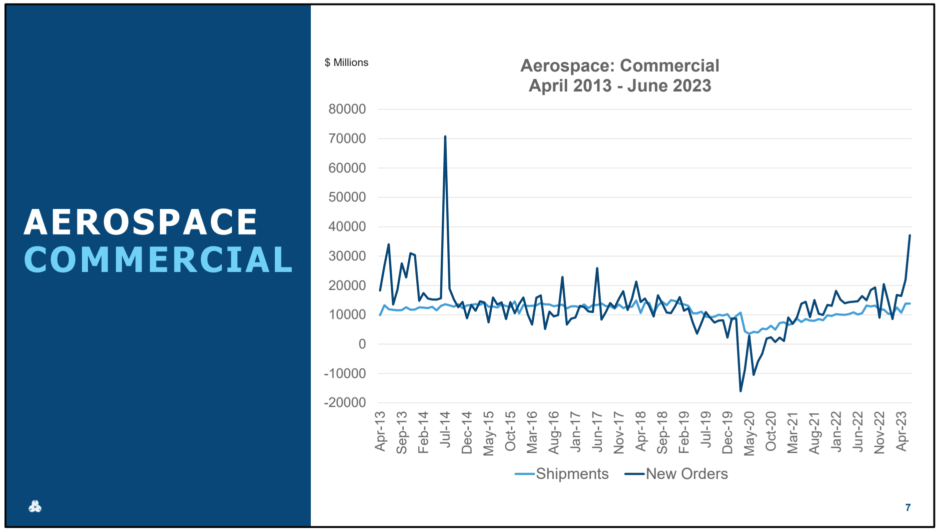


The best year for the US machine tool market (consumption) was 2018; inevitably, the market fell in 2020 but there was a good recovery in 2021 before the market has slowed again in 2022/23.



This chart looks at the relationship between the rate of growth in shipments of an industry between 2022 and 2023 and the level of capacity utilisation for that industry. The size of the circles relates to the absolute values for shipments.

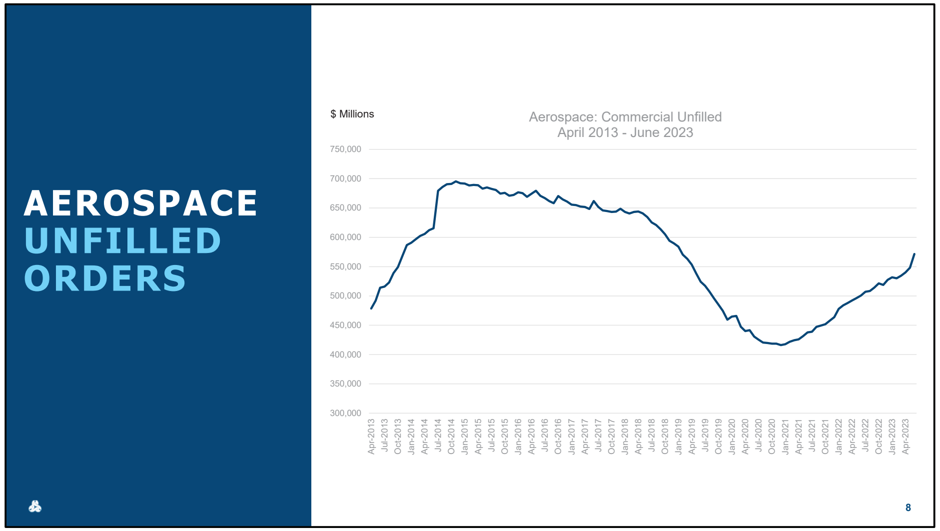
Job-shops – usually called sub-contractors or contract machining in Europe – account for between 30% and 40% of machine tools demand in the US.



On the previous slide, the aerospace industry has a high rate of growth, but capacity utilisation is below the long-run average level for that industry.

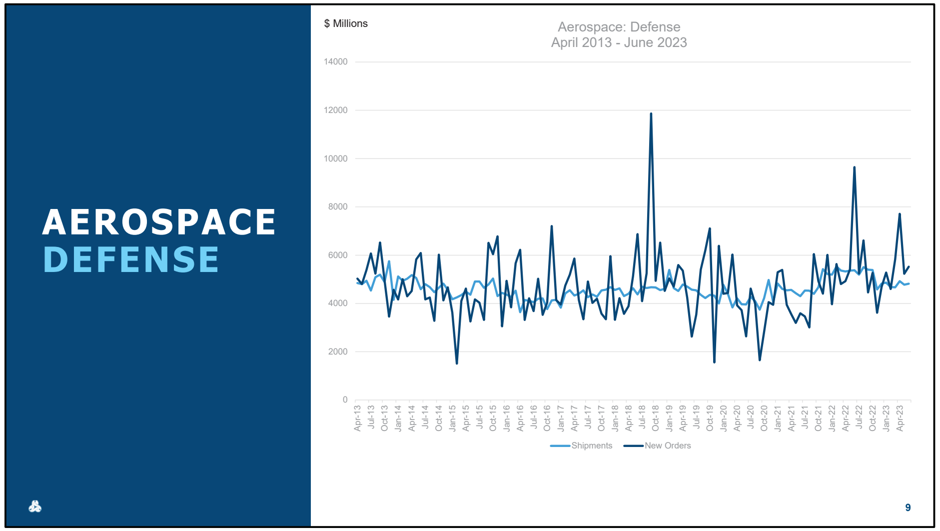
For the commercial side of the industry, during the period covered by the 737 max and Covid issues, order backlogs continued to rise even though the industry was taking in fewer orders peaking in May 2020.

The decline between May to the Spike in November were cancelations – the latter spike came from contracts for 737's that were triggered by the recertification of the aircraft.



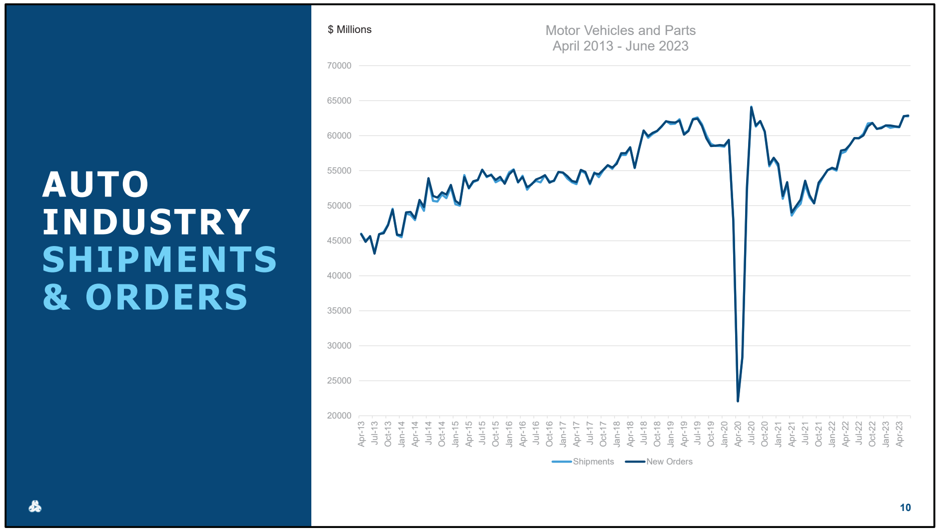
The decline in the backlog didn't require as much work as usually done in the industry as many of the planes have been built and inventoried. The planes could be delivered with new electronics and software. This is not the kind of activity that generates capex for manufacturing technology.

As the backlog moves back towards 4 years there will a ramp up in spending on production equipment for engines and frame products. This is expected to begin after June of 2022 and no later than the first quarter of 2023.



The defense part of aerospace is much steadier because the customer literally prints money and requires its products be delivered regardless of any issue impacting the general economy.

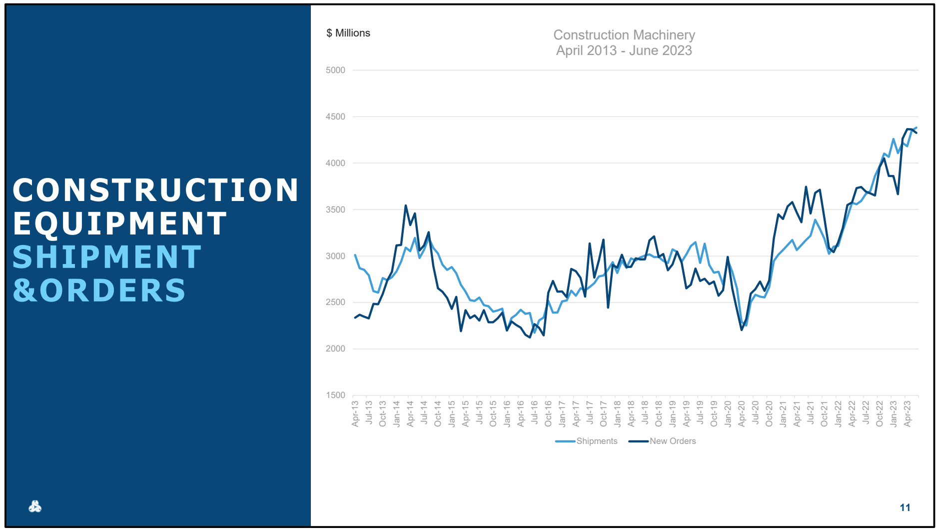
The challenge is the size of this part of the business is about half to two-thirds of the size of the commercial side. We are likely to see a spike the size of the one that sent orders to $12 billion in Sept 2018 in the next 6 months.



Output of the automotive industry is also growing significantly but the capacity utilisation rate is a little above the long-run average. This industry accounts for 14% of machine tool orders.

Investment by this sector is largely aimed at developing electric vehicles (EV) in various forms.

There is a close relationship between orders and shipments in this industry which typically has a high level of inventory in the distribution chain. Supply chain challenges continued to pull orders and shipments down until April 2023 but the industry has adjusted and were some of the first to make supply chain moves to protect production.



The mobile machinery group (construction, farm and mining machines) has a high rate of capacity utilisation, well above the long-run average, but output is barely growing in 2023.

Activity in construction machinery is likely to expand given the investment in infrastructure mentioned earlier, with more to come with spending on roads, bridges, electricity grids and the 5G network.

This infrastructure elements of this industry is relatively isolated from a recession given that this funding comes from government rather than private sources.

MANUFACTURING TECHNOLOGY: FORECASTS

Metalworking Equipment	2023	2024
Metalworking Machinery	-19%	+11%
Cutting Tools	+18%	-1%

The machine tool market in the US is falling this year but a recovery is expected in 2024 as the various government initiatives come on stream.

In contrast, the tooling market is growing strongly in 2023 but is expected to be broadly flat next year.

At the time of the presentation, the interest rate decision by the Federal Reserve was imminent. The outcome was to leave interest rates unchanged but to signal that they are likely to remain high for longer than had previously been assumed.