

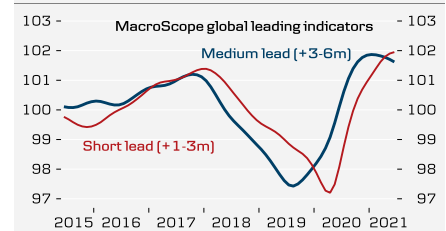
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Research Global

Manufacturing cycle to peak in Q3

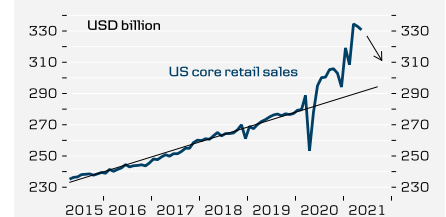
- The global manufacturing engine has been running hot this year fuelling widespread bottlenecks and sharp increases in commodity prices and inflation. PMI levels have reached record highs.
- However, after a ‘hot’ summer we believe the manufacturing cycle is set to peak during Q3 as some of the strong tailwinds behind the boom are about to fade: the boost from the record high US stimulus in Q1 is fading and the end of the pandemic in US and Europe will shift demand from goods towards services. The sharp rise in inflation also adds a negative impulse to real income growth.
- A peak in the manufacturing cycle during Q3 should ease some of the current bottlenecks and reduce the inflationary pressure from commodity prices. Freight rates should also come down gradually and reach more normal levels during H1 2022.
- A peak in the cycle normally points to lower returns on equities but not necessarily negative returns. It also tends to put a lid on bond yields when we have a peak in the cycle and inflation at the same time. But the expected pick-up in services and employment in H2 may change that pattern this time.

Our leading indicators point to a peak soon



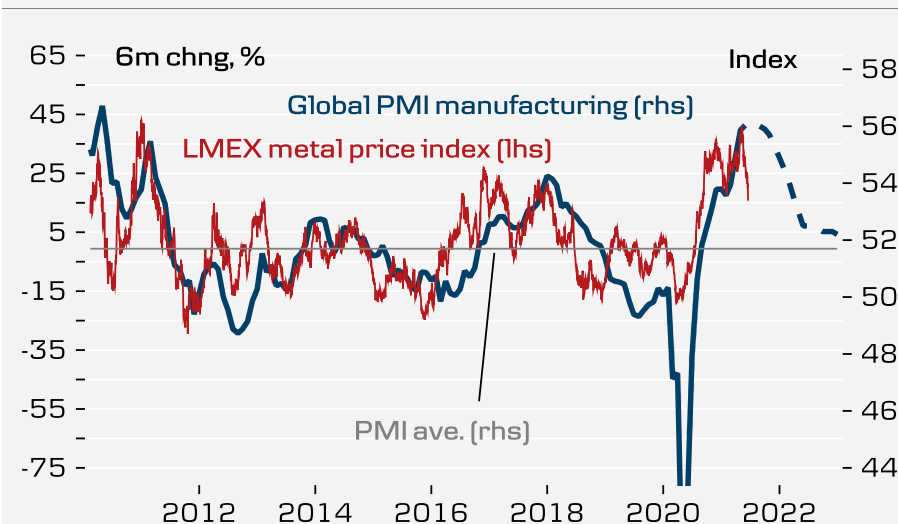
Source: Macrobond Financial, Danske Bank

US goods demand has been extraordinary – but set to moderate



Source: Macrobond Financial, Danske Bank

Global PMI outlook: approaching the peak



Source: Macrobond Financial, Danske Bank

Chief Analyst
Allan von Mehren
alvo@danskebank.dk

Chief Analyst
Jakob Ekholdt Christensen
jakc@danskebank.dk

Chief Analyst
Mikael Olai Milhøj
milh@danskebank.dk

Senior Analyst
Aila Mihr
amih@danskebank.dk

Analyst
Antti Oskari Ilvonen
antti.ilvonen@danskebank.dk

Why is the manufacturing cycle so strong?

Despite of the global pandemic raging in 2020 and 2021, the manufacturing sector has experienced the strongest boom in more than ten years. It may seem odd but a combination of strong tailwinds have been in play with the US playing a key role (for a general overview of what drives manufacturing cycles see box on page 6):

- Pandemic effects on consumption:** The widespread lockdowns led to a clear shift away from service consumption to higher demand for goods, such as electronics, 'Do-It-Yourself' tools, fitness equipment, stuff for the home office etc. This shift has been evident across countries, not least in the US. With less money spent on travelling, eating out and other services more money was available for spending on goods. Housing also got a big boost during the pandemic in most countries fuelling demand for furniture and materials for construction of new houses, such as steel and lumber.
- US consumer stimulus:** In the US part of the policy response has been direct payments to consumers through stimulus checks as well as raising unemployment benefits by USD300 per week. As the top chart to the right shows, disposable income levels actually saw a big boost, which is very unusual in an economic crisis. The stimulus checks sent out in March and April gave a renewed strong boost to incomes adding a renewed impetus to goods consumption as services saw widespread restrictions during spring.
- Capex boom:** In contrast to what we normally see in a crisis, business investments recovered very sharply after the initial plunge after COVID broke out in Q1 last year. At first, many companies needed to invest in equipment for employees working from home (lap tops, communication gear, chairs etc.). In 2021 the pressure on capacity from the manufacturing boom has also fuelled investments to increase production capacity to be able to meet demand in the future.

Going into 2021 we expected that tightening of both monetary and fiscal policy in China would weigh on global manufacturing. However, while we indeed have seen a decline in Chinese credit growth and industrial production, this has been more than compensated by the significant effects from not least the US stimulus, which have sustained the boom in global manufacturing.

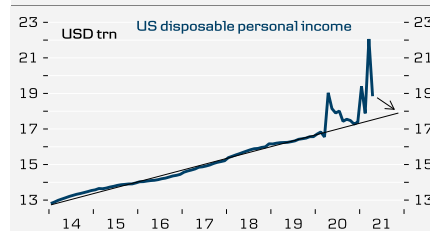
The boom has been so strong that bottlenecks are now widespread, inventories got depleted and commodity prices have increased to the highest levels in many years. An attempt to rebuild inventories is also driving higher demand for materials than what is reflected by end-user demand because in order to rebuild inventories of finished goods you need to produce *more* than what you sell to customers. Companies also aim to stock up on materials for production where they can to avoid shortages again.

Five reasons a peak in the manufacturing cycle is close

While things are running very hot right now, we believe we are close to the peak in the manufacturing cycle; hence growth rates in the sector are likely to come down soon. It also implies that global manufacturing PMI's are set to move lower. We eye the peak in early Q3 due to five reasons:

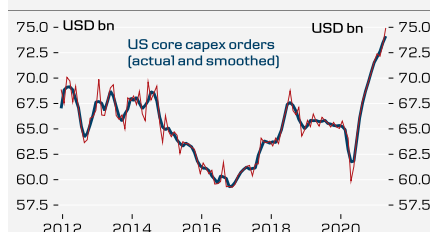
- Pandemic to shift demand from goods to services.** As the US and Europe are reopening we expect more money to be spent on services with people travelling more again, going out to eat, going to concerts etc. This is already visible in US data (see charts next page) and also in our *spending monitor* for Denmark. The monitor also illustrates that while the demand for electronics and DIY goods is still high, it is lower

Stimulus checks (and higher benefits) gave massive boost to incomes



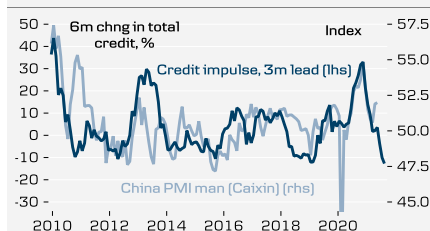
Source: Macrobond Financial,

US capex boom



Source: Macrobond Financial, US Census Bureau

Chinese tightening to weigh on China PMI



Source: Macrobond Financial, PBoC, Markit

than in the beginning of 2021. Goods spending has shifted more towards clothes and shoes, which do not require industrial inputs like metals. Consumption of durable goods may also start to be saturated in many areas (there is a limit to how many new lap tops, computer screens or TV's you need). We thus look for goods consumption in not least the US to cool down in coming quarters while services recover.

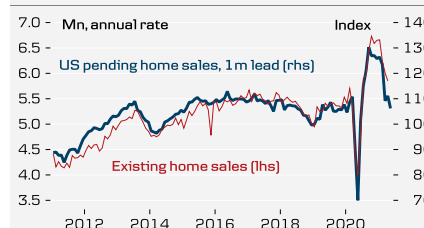
2. **US stimulus effect to fade.** The US stimulus from checks was a one-time shot in the arm and at the same time, the enhanced benefits will expire in early September. The temporary nature of the income boost implies, that even with an expected sharp rise in US employment in H2, disposable incomes are likely to move lower from the elevated level seen in Q1 and Q2. Many of the employed will actually experience a lower wage than what they received in benefits. We expect this to be an additional drag on goods consumption in H2.
3. **Real income growth taking hit from inflation.** On top of the fading boost to nominal incomes, the purchasing power of incomes is also eroded by the sharp rise in inflation over the past six months.
4. **Inventory cycle to turn from boost to a drag.** A key driver of manufacturing cycles is the swings in the inventory cycle (see box at end of article). To rebuild inventories companies will produce *more* than they sell for a while. However, when inventories are back to desired levels, production no longer has to outpace sales. That implies production moves from rising sharply to growing more slowly. If on top of this goods demand starts to decline (as we expect), production has to adjust even more. It's hard to gauge when this inflection point sets in but we believe that at least the *growth* in production will come down soon from current very high levels.
5. **Housing markets cool down.** A key feature of the pandemic has been booming housing markets everywhere. It has increased the demand for materials and tools produced in the manufacturing industry. However, there are clear signs the US housing activity is slowing and we see similar signs in some European countries, see for example *Research Nordic – Housing boom coming to an end*, 18 June 2021. As home sales slow, construction will do the same with a lag and demand for tools and materials will fade again. It is not going to be the main driver but on the margin pushes in the same direction of slower manufacturing growth.

Real wage growth in US and euro area taking hit from rise in inflation



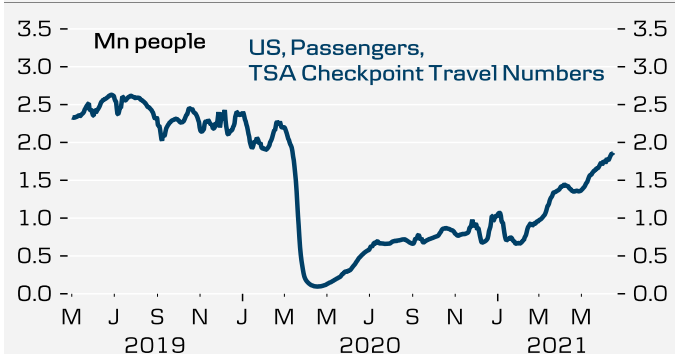
Source: Macrobond Financial,

US housing slowing down sharply as pandemic effect fades



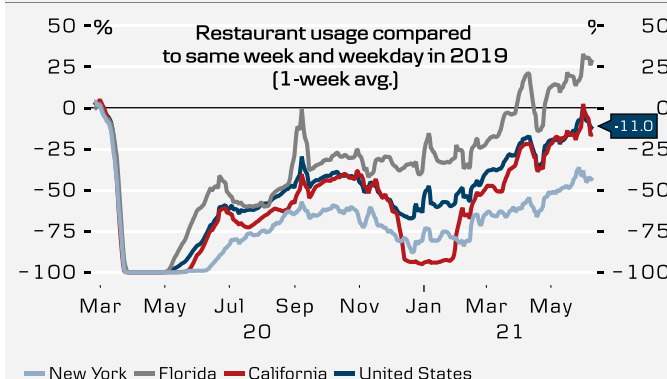
Source: Macrobond Financial, NAR

US travel climbing back – highest number of passengers since COVID hit



Source: Macrobond Financial, US Department of Homeland Security

People spend more money on restaurants again, almost back to pre-COVID levels



Source: Open Table

On top of the above factors we expect the effects of Chinese policy tightening to remain with us for the rest of the year. We don't expect credit growth to slow further from here, though, so it will not be an additional negative impulse but more an unchanged drag.

What about the high level of savings in US and Europe? Will that not sustain high growth in goods consumption? We don't believe so. It will likely help sustain a high *level* of consumption but it is not a positive impulse factor that is likely to sustain high *growth*. Short term changes in growth is driven by impulses and not structural factors.

Could capex growth postpone the peak in the cycle? While we are bullish on business investments due to the current pressure on capacity, we don't believe it will be enough to avoid a peak in the cycle. First, capex growth is already high currently. It will have to move even higher to create a positive impulse on growth. Secondly, capex is a fairly small part of GDP compared to goods demand. In the US it is 6% of GDP compared to 23% for private consumption of goods.

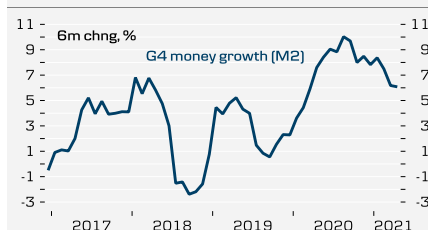
Finally, could rising infrastructure investments in the US and Europe avoid a peak in the cycle? While more infrastructure activity will underpin the underlying growth rate in demand, it is not a sudden positive impulse. It is more like a slow-moving component adding a gradual lift to demand and hence in the short term unlikely to compensate for the negative impulse mentioned above.

Leading indicators points to slowing momentum

While fundamentals suggest we should have a peak in the not too distant future, it is always hard to pick the exact timing. For this we use a range of leading indicators to circle in on when the peak arrives. Below is a list of some of our favourite indicators:

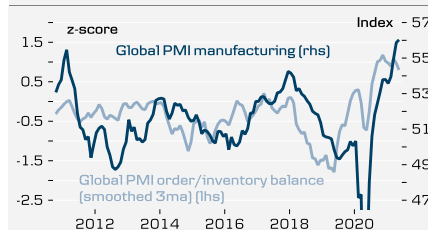
- **Industrial metal prices.** Since producing goods requires materials such as metals, it is not surprising that the price of industrial metals serves as a good indicator. The chart on page 1 shows a high correlation between global manufacturing PMI and the *momentum* in the LME metals index. While a bit noisy it is a good indicator to keep track on. It currently gives a tentative sign of a peak in momentum and thus the global manufacturing cycle.
- **Exports from Asian manufacturers.** Since most of the world's goods are produced in Asia, export growth from countries like China, South Korea and Taiwan also tends to provide and early warning of turning points. As the charts below show, there are also signs here of a peak in momentum.
- **Order/inventory balances.** Another indicator that tends to give a warning of turning points is the order/inventory balance from the PMI statistics. However, currently it sends a mixed signal. The inventory index for purchases has increased over the past months and when using this index, the order-inventory balance looks *toppish* (see chart). However, the inventory index for finished goods is still low and using this index in the order/inventory balance the conclusion is not as clear.
- **Money growth.** The momentum in money growth often has a long lead to turning points (although not always). Global monetary stimulus fuelled a sharp increase in money growth in 2020, but momentum peaked already in H2 last year due to tightening in China and some moderation in money growth in the US.
- **MacroScope leading indicator models.** Finally we use leading indicators from our MacroScope models as an important tool to time the turning points. The models

G4 money growth is coming down



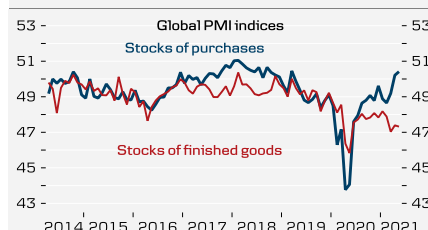
Source: Macrobond Financial, misc. central banks
Note: G4 here is US, Japan, Euro area and China

Order/inventory balance noisy but looks toppish when using inventory of purchases



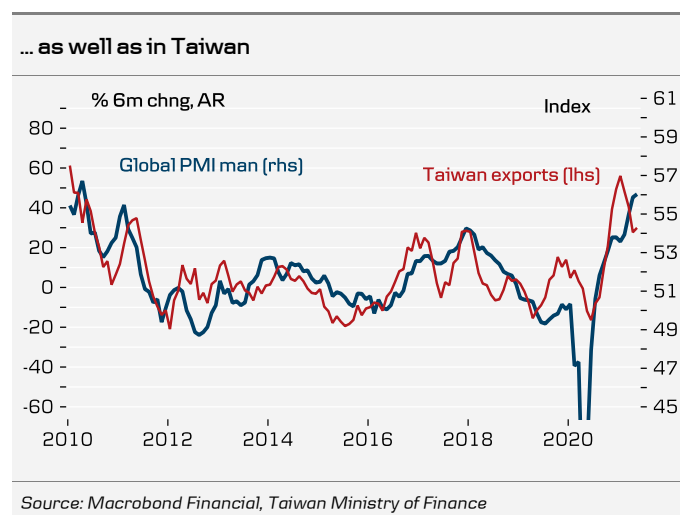
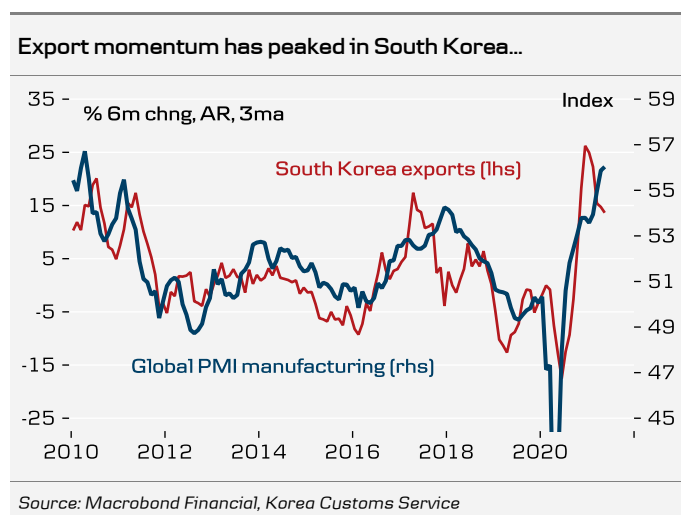
Source: Macrobond Financial, Markit

PMI inventory indices differ currently



Source: Macrobond Financial, Markit

encapsulate many of the above mentioned factors into composite leading indicators with different time leads. As the top chart on the front page shows, both the short term and medium term models now suggest a peak should come within the next 1-3 months. Admittedly, the models late last year signalled a peak around March/April. However, since the models cannot take into account exogenous 'shocks', it did not capture the massive US stimulus in Q1. For this reason, we believe the peak is delayed compared to the early signal. However, the effect of the stimulus checks that arrived in March/April will gradually fade, not least because it was in the form of a one-time payment and not a permanent income increase (as a tax cut would have been).



Conclusion and risks

To conclude, we look for a peak in the manufacturing cycle in Q3 as tailwinds are fading and we see signs that the support from the inventory cycle is close to a peak.

As we are in uncharted waters, there are clearly risks to our scenario. The main risk to is that US goods consumption stays at elevated levels for longer than we expect and that it takes more time to rebuild inventories and get through the current high level of backlog of orders. This could push the peak into Q4. But we feel quite confident that a peak will take place this year.

A downside risk scenario is that goods demand decline more than we expect in the US if the effect of lower disposable incomes is bigger than expected or the 'saturation effect' of having bought so many goods is stronger.

In a forthcoming piece, we will look closer at the financial implications of a peak in the manufacturing cycle. Some of the main takeaways, though is that a turn in the cycle tends lower returns on equities (although not necessarily negative returns) and gives support to the USD. It also normally leads to lower commodity price inflation and with that also lower consumer price inflation. Bond yields tend to peak when the manufacturing and inflation cycle turns lower, but it may be different this time as we have a pick-up in services and employment at the same time. We will elaborate further on this in the coming piece.

See next page for a general description of what drives the manufacturing cycle.

Box: What drives the manufacturing cycle

Lets first define what we mean when we talk about the ‘manufacturing cycle’: it is the *momentum* in manufacturing production (growth rate) and not the *level* of activity. This is also what is measured in PMI indices, which is why we use these as an indicator for the manufacturing cycle. The manufacturing cycle tends to be determined by two overall drivers.

The first driver is the sum of impulses that hit demand for goods from either consumers or companies (capex). Impulses can also be described as changes to tailwinds or headwinds for the manufacturing sector. The best analogue is to think of riding a bike. Lets say your normal pace is 25km per hour. If you have a strong wind in your back, you speed up to maybe 35km per hour. If the wind then calms down – but is still in your back – you can no longer ride as fast but slow down to 30km per hour. It is faster than your normal pace. But not as fast as the 35km per hour you were going at before.

An economic example of this is a fiscal boost. If you give a big fiscal boost, such as stimulus checks, it will initially be a strong tailwind that lifts demand. Let’s say you spend 30% of the check in Q1, 20% in Q2, 10% in Q3 and then save the rest. It will provide a tailwind in all three quarters, but importantly the tailwind is slowing down. It will thus give a big lift to growth in Q1 but the growth rate will decline after that even if it is still a tailwind. Other examples of impulses is the *change* in bond yields. A sudden decline in yields will provide a boost. If yields starts to rise the boost will become smaller even if the level of yields is still very low. Hence, it will work to reduce momentum/growth. Other key impulses tends to be *changes* in oil prices, tariffs, money supply and exchange rates or factors that cause heightened uncertainty such as trade wars or real wars.

The second important driver of the manufacturing cycle is ‘the inventory cycle’. The key to understand to understand this driver is that the *change in inventories = production – demand*. Assume a starting point in equilibrium when inventories are at a desired level and demand and production is growing at trend. The change in inventories is zero. Then add a stimulus check that lifts demand more than expected. It will lead to demand outpacing production for a while and thus lead to a decline in inventories below the desired level. Companies now ramp up production to catch up with demand *and* to rebuild inventories. It means production needs grow *faster* than demand. After a while the effect of the stimulus check wears off and demand growth falls back to trend. But production continues to grow above demand as long as inventories need to be rebuilt. However, eventually when inventories are back to desired levels, production growth will fall for two reasons. The first is that it no longer has to rise faster than demand. The second is that demand itself is growing more slowly.

The inventory cycle thus works as an accelerator on production from changes in demand. It needs to rise at higher growth rate than demand when production needs to catch up. But at a lower rate than demand when the inventory levels have been restored.

Source: Danske Bank

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