Macroscope: 
Inventory swings and roundabouts
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Executive summary

The global economy is operating with bloated inventory levels, thanks to a combination of stockpiling during the prior cyclical upswing, and preparation for trade war and Brexit-related disruptions. However, with underlying demand now weakening, firms are cutting production even more severely to work off excess inventories. The inventory cycle is therefore amplifying economic weakness. But global headwinds run deeper than short-term inventory dynamics.

In the US, stockpiling around tariff escalation has flattered headline growth, but is storing up weakness to come. UK growth has also been thrown around by inventory build and run-downs around changing Brexit deadlines.

In Europe and Emerging Markets (EM), the inventory adjustment is already in full train, as businesses run down bloated stocks. These economies are closer to the end than the start of their inventory adjustments, but that does not mean that growth will bounce back sustainably anytime soon.

Market pricing is in an unsteady equilibrium, with risk assets performing well, but sectoral trends and bond markets reflecting considerable concern. Whether growth turns up or down from here is crucial to the next big move in markets.
‘The global economy is operating with bloated inventory levels. Firms are trying to run those inventories down, which is amplifying global economic weakness’
Swings in inventories often play an amplifying role in economic cycles. In upturns, firms build inventories in anticipation of future demand, adding to headline growth. In downturns, firms seek to run down inventory levels, worsening measured GDP growth. This role as an amplifier and swing factor in economic activity makes it crucial to get a handle on inventory trends, especially when a range of idiosyncratic factors are also currently causing large inventory shifts.

The global PMIs include two series related to the stock of manufacturing inputs and finished goods. Stocks of manufacturing inputs started expanding (i.e. broke above the 50 mark) during 2017, as the global cyclical upswing was in full flow and firms were building inventories to meet future demand. The eruption of the trade war in early-2018, and the initial Brexit deadline in March 2019, further contributed to the inventory build, as firms stockpiled ahead of potential supply chain disruptions.

The upshot is that a range of economies are now operating with high levels of inventories, at the same time as underlying demand is softening. This combination is contributing to a sharp downward adjustment in inventories, as firms cut back on production and work off bloated stock levels. That in turn is exaggerating the severity of the current cyclical downswing – and will continue to weigh on growth until inventories normalise.

But the bottom line is that global economic headwinds run deeper than short-term inventory dynamics. Trade policy uncertainty and weak demand for manufactured and traded goods are weighing on growth, and are likely to continue doing so for the foreseeable future.
‘Stockpiling around tariff increases has flattered headline growth. But with global and domestic activity weakening, firms will want to run down these inventories, auguring further weakness.’
There is an old saying: “the business cycle is an inventory cycle”. In part this was borne out of the outsized effect that rapid cuts to stockpiles have historically played in US recessions. Changes in the structure of the economy and improving inventory management mean that these effects have lessened over time. However, an inventory correction still took a full 0.8 percentage points (pps) from headline US growth during the great recession in 2009. Moreover, smaller swings can have notable impacts on the timing of growth during the business cycle and provide important signals around business sentiment.

Recent trends in inventories provide an example. Inventories increased significantly between Q3 last year and Q1 this year across the wholesale, retail and manufacturing sectors (see chart 2). This stockpiling has flattered headline growth. Indeed, real final sales of domestic product, a growth measure that excludes inventories, was up 1.8% y/y in Q2 this year, a full 0.5pps below aggregate GDP. The upswing in inventories is unlikely to reflect firms becoming more confident around the prospects for future production and sales. Instead, there looks to be a clear trade war flavour to the timing of this build, as firms increased stockpiles ahead of the implementation of higher tariff rates.

With global and domestic growth weakening, firms are likely to want to run down these stockpiles. Indeed, Q2 saw more moderate inventory activity, with lower stockpiling subtracting 0.9 percentage points from annualised quarterly growth. Moreover, business sentiment surveys suggest that firms continue to adjust their aggregate stockpiles lower, with the inventory components of both the ISM and PMI surveys having been stuck below the 50 point mark over recent months.

However, the pace of this adjustment remains controlled. Monthly inventory data in July showed a restrained pace of inventory accumulation, but no outright cut. This more moderate spending has helped the retail inventory-sales ratio dip lower, although this has yet to feed through to the wholesale and manufacturing equivalents (see chart 3). In some regards, this slow adjustment provides a positive signal, with firms clearly not slashing stockpiles in a state of panic around the outlook.

Looking forward, our forecasts embed negative contributions from inventory investment to GDP over the rest of this year, as firms work through the stockpiling of late 2018. This should provide a modest drag on activity. The big unknown is how firms will react to the latest trade threats. Tariffs on Chinese imports are due to rise in October and December, creating incentives for firms to import affected goods ahead of these deadlines. Certainly there is a risk that more tariff-driven distortions are on the way. However, these should not distract from what looks to be a clear slowdown in underlying growth.
‘Successive Brexit deadlines are playing havoc with the level and composition of growth, as firms and households build and then run down stockpiles around the UK’s putative exit dates.’
UK GDP grew by 0.3% in July, solidly above the consensus estimate. This recovery in activity from the 0.2% contraction in the second quarter of this year means that the UK is unlikely to suffer a technical recession of two consecutive negative quarters this year. This is in part because the rest of the quarter should benefit from the fact that the usual summer shut down of auto plants was brought forward to April this year in an (unsuccessful!) attempt to better schedule the shut-down around Brexit.

However, we have now incorporated a no-deal Brexit as the conditioning assumption for our forecasts. This means we now see the UK falling into recession next year due to the vast border disruptions, squeezed real incomes and shock to productive potential that no deal would inflict on the economy.

The risk of no deal is already slowing and distorting the economy, in part because the rolling deadline of the exit date has caused firms to have large swings in demand for inventory. For example, in Q1 this year, firms stockpiled inventory ahead of the original 30 March deadline to protect against the risk that the flow of goods would be disrupted by a breakdown in border infrastructure processes in the event of no deal (see chart 4). This saw the economy grow at the relatively rapid pace of 0.5% as the surplus inventories counted as economic activity. However, in Q2 this year, after the Brexit deadline was extended to October 31, many firms decided to run down these accumulated inventories, which counted as a large drag on growth. This is part of the reason economic growth was so weak in that quarter, at -0.2%.

Inventory build also distorts the composition of growth, leading to a big surge in imports and exports. This is because firms in the UK stockpile goods from the external aspects of their supply chains, leading to higher imports, while foreign firms stockpile British goods causing exports to pick up (see chart 5).

It is plausible that we see another boost to GDP in Q3 of this year as firms start to build to the putative Brexit deadline of 31 October, despite this deadline having now been extended to 31 January next year. This is because there is evidence it took firms about 3 months to build their inventory capacity last time, so inventory build ahead of the most recent deadline would likely have started in August. That was when no-deal risk may have been perceived as particularly high given the political backdrop. However, the depreciation in sterling since Q1 this year means it will be more expensive for domestic firms to stockpile foreign goods, and warehousing capacity is more limited in Q3 as firms naturally stockpile more goods ahead of the high spending Q4. Both factors might mean there is less of an inventory effect in Q3 than in Q1.
‘The slowdown in activity is being exacerbated by an inventory drag, as businesses run down bloated stocks. But the region’s issues run deeper than inventory dynamics.’
Europe

What a drag

Paul Diggle,
Senior Global Economist

The slowdown in Eurozone economic activity is being exacerbated by an inventory drag: businesses are running down bloated stock levels, which is exaggerating the already weak rate of economic growth. As and when the typically short-lived inventory cycle is complete, there is scope for a modest improvement in growth. But the bigger picture is that underlying demand in the Eurozone is weak, especially in the manufacturing sector.

There are a few different ways to get a handle on inventory trends in the Eurozone. The first is by looking directly at the expenditure breakdown of GDP. Changes in inventory levels affect the level of GDP, so the change in the change of inventories impacts GDP growth. The reduction in the rate at which inventories are building up means that inventories have been a drag on Eurozone GDP growth in recent quarters – indeed, year-on-year growth would have been 0.3 percentage points stronger in Q2 had it not been for inventory movements.

The second approach is to look at inventory trends in the higher-frequency survey data. The European Commission surveys manufacturing firms on their stocks of finished goods. In both the Eurozone as a whole, and Germany in particular, the level of inventories is around one standard deviation higher than normal (see chart 6). Inventory accumulations can either be deliberate – say, in preparation for a forthcoming shock – or unplanned, say in the face of weaker-than-expected demand. In the Eurozone’s case, the cause looks to be the latter, given that new orders have fallen even more rapidly than inventories have been accumulated. Indeed, comparing the level of manufacturing orders to inventories points to further weakness to come in manufacturing output, as firms cut back production in an effort to run down their excess inventories (see chart 7).

While the inventory cycle is strongly pro-cyclical – it tends to exaggerate periods of economic weakness – it is also typically short-lived. Therefore, once the current destocking cycle is complete and firms have returned to a more normal level of inventories, there is scope for the current weakness in measured economic activity to moderate a little. However, we wouldn’t get too upbeat as and when that boost occurs. The Eurozone’s problems run deeper than short-term inventory dynamics. Instead, they reflect a combination of global policy uncertainty, and a sharp manufacturing and trade downswing almost everywhere. These headwinds are likely to persist, and hence we have a set of below-consensus Eurozone economic forecasts.
‘Inventory levels are not excessive but sentiment and producer forecasts suggest the prospect of reaching a turning point in the Asian industrial cycle is remote.’
Japan may have reduced its reliance on manufacturing exports, but the fate of the global industrial cycle remains a critical consideration. Recent survey evidence points to a prolonged slump, with the manufacturing PMI maintaining an almost interrupted run below 50 since February, and the latest Reuters Tankan at the lowest level since March 2013.

In terms of the hard data, industrial production stopped falling in the second quarter, but is likely to resume its slide in Q3, according to company forecasts. Chinese orders for Japanese machine tools have been a key source of weakness, declining 60% in June, the 16th month of declines, as the US-China trade war bites. Inventories have also started to tick higher (see chart 8).

A critical question relates to the magnitude of the spill-over effects from manufacturing activity to the broader economy. So far, investment intentions in the manufacturing sector have yet to buckle. The Tankan survey saw little meaningful deterioration from previous forecasts, although we are expecting weaker numbers before too long. The news in the services sector is more encouraging, with the latest services PMI increasing to 53.4. Service sector investment is also proving resilient in the face of trade tensions. This reflects still healthy sales and profits, as well as investment related to logistics, 5G, urban development, and labour-saving initiatives. Here, too, the Tankan survey will be a key indicator of whether service sector spending will continue.

Another potential silver lining comes in the form of the bottoming-out of global semiconductor sales and prices. This suggests the ill-effects of the tech cycle on overall production should fade. However, we are wary about inflated expectations. South Korea’s electronic parts shipment/inventory ratio is typically a useful indicator of the cycle and, while inventories are not excessive, they have been volatile rather than on a downward path (see chart 9). By contrast, other key sectors such as autos are showing little sign of turning a corner, with inventories rising and production weak.

In aggregate, we think there are still too many pieces of the jigsaw missing to become constructive on the industrial outlook. While inventory levels have not risen aggressively, and in some cases are relatively lean, there is little sign that this will fuel production. For that to happen, the slump in manufacturing sentiment would need to be alleviated, most likely by a political détente between the US and China. That prospect looks quite remote as we head into an election year in the US. The risks are tilted to the downside then, with the durability of investment in the manufacturing and the non-manufacturing sectors likely to be further tested.

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**Chart 8: China matters**

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<td>Japan:</td>
<td>Producer’s inventory: Mining and manufacturing</td>
<td>Net new machine tool orders (China, 12 month % chg) (R.H.Scale)</td>
<td>Source: JMTBA, Haver, ASIRI (as of July 2019)</td>
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**Chart 9: Sector divergence**

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</tr>
<tr>
<td>0.6</td>
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South Korea inventory to shipments ratios:

- Electronic components
- Autos

Source: Statistics Korea, Haver, ASIRI (as of July 2019)
‘Excess inventories are being worked off, but the adjustment is still incomplete. In any case, the outlook for EMs is closely tied with the trade war and offsetting monetary policy easing.’
Economically speaking, it has been a tough 12 months for emerging markets. GDP growth has fallen to a new post-crisis low and is around half the rates recorded immediately before the financial crisis (see chart 10). Industrial and trade activity is especially weak, with trade volumes dropping over the past 12 months in a re-run of the 2015 slump. And business sentiment remains very subdued, highlighted by Sentix survey expectations hovering at seven-year lows.

While we know that activity is currently weak, that tells us relatively little about the future. When indicators of underlying growth last reached these levels towards the end of 2015, it was the precursor to a strong rebound. But in a typical global recession, even the current rates of growth would be waystations to much worse outcomes. Whether the outlook improves or deteriorates will be determined by whether the global monetary policy easing underway is powerful enough to arrest the headwinds from the US-China trade war and the greater difficulty firms are having generating profits.

One indicator that can guide our judgement is where we are in the inventory cycle. Changes in business inventories tend to be highly cyclical, amplifying growth and industrial production in particular when demand is improving, and pulling it down when demand is softening. When the level of inventories becomes very stretched compared to underlying sales or demand, it is often a sign that a turning point in the business cycle is approaching.

There is both good and bad news in the EM inventory data. The good news is that, after peaking towards the end of 2017, new orders have been falling faster than inventories, implying that the excess is being worked off (see chart 11). The bad news is that the ratio of new orders to inventories is still above 1 and there has been little adjustment in the level of inventories. In 2015, it wasn’t until the ratio fell below 1 and inventories themselves dropped that the EM industrial cycle turned up. Moreover, that was a comparatively mild industrial downturn; in 2008 when the orders-inventory ratio hit the current level, the trough in industrial activity was still more than six months away.

The upshot is that, while aggregate inventory ratios imply we are now some way through the necessary inventory adjustment in emerging markets, they are not so low as to have reached a turning point. That brings us back to the fundamentals. Our judgement is that looser monetary policy will be sufficient to cushion growth and thus prevent a recession. However, we don’t think that easing will be so aggressive as to offset the structural headwinds the global economy is currently facing. Subdued growth is better than recession. But, from an investing standpoint, it is nothing to get excited about.
‘Market pricing is too bearish for a prolonged stabilisation in global economic activity, but too bullish for a slip into recession. The inventory cycle is a key component to track for which direction this unsteady balance will break’
Global monetary policy loosening is a response to the slowdown in economic activity, exacerbated in many cases by the inventory cycle. However, it also reflects policymakers’ concern about disappointing market expectations. They fear that risk asset volatility could erupt again as it did in Q4 2018, leading to self-fulfilling pessimism on the economic cycle. So what is the market pricing at this juncture?

Interest rate swap markets are currently discounting four more 25bps cuts from the Fed in the next two years (see chart 12), and two more 10bps cuts from the ECB. These cuts, aggressive for a mid-cycle slowdown but tepid for a recession, are symptomatic of an undecided market pricing a balance of possible outcomes. Looking at longer-term rates, 10-year Treasuries have fallen sharply, commensurate with the weakening in underlying US economic activity. Rates show no particular sign of mispricing. And where rates go from here will depend on whether macro data stabilise or continue to slide down.

Much ink has been spilt on the supposed dislocation between yields, which have fallen to all-time lows, and the strong performance of risk assets year to date. Equities are near their highs, while credit spreads are close to their tights, seemingly pricing in very little in terms of macro deterioration. The notion of a successful round of policy easing could explain this resilience but, looking under the hood, we can see that these asset classes too are showing signs of grave concern.

In corporate bond markets, the outer rim of the high-yield market, CCC bonds, has been underperforming significantly this year (see chart 13). It is uncommon for this to occur in such a strong bull market in the asset class, when the highest-spread bonds generally perform the best. This is evidence that investors are increasingly discriminating between bonds of different ratings, seeking to gain exposure in more liquid and less default-prone securities. Equity markets, meanwhile, have been driven to their heights by an outperformance of defensives over cyclicals. The strongest balance sheets have performed best, and we have recently seen specific factor exposures, such as momentum, falter spectacularly. Again, there are signs that, while investors see it as premature to flee the asset class as a whole, they are certainly readjusting their chairs to bring themselves closer to the door in case of a fire. In emerging market currencies, meanwhile, the higher-yielders have underperformed, although idiosyncratic events in Argentina and Turkey have a big role to play in that.

These many traces of concern in markets represent an unstable equilibrium. Market pricing is too bearish for a prolonged stabilisation in global economic activity, but too bullish for a slip into recession. Inventories are a key component to track in which direction this unsteady balance will break.

**Chart 12: Swap markets pricing significant easing**

- USD OIS curve

Source: Bloomberg. For illustrative purposes only. No assumptions regarding future performance should be made. (as of September 2019)

**Chart 13: Credit market shunning riskiest names**

Source: Bloomberg. For illustrative purposes only. No assumptions regarding future performance should be made. ASI (as of August 2019)
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