Inventive story

Economist Insights

Recent weakness in the US is largely down to an inventory adjustment, but this recent move just highlights the long rebuilding of inventories relative to sales since the financial crisis. Does this reflect a conscious decision to hold higher inventories, or is it a sign of continually disappointing sales?

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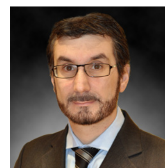

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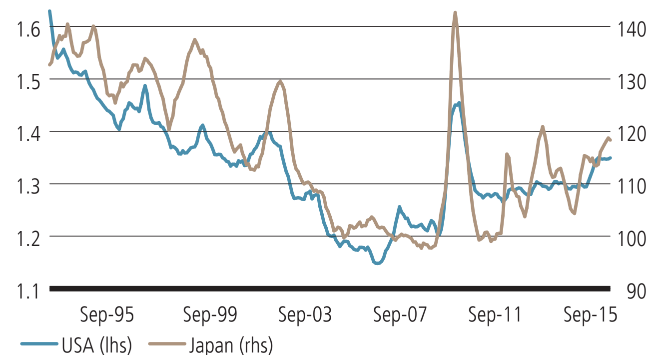
Possibly the biggest single explanation of why growth has been less volatile since the mid-1980s can be expressed in three words: "just-in-time". With the advent of modern communications, transport and computing, firms became much better at handling inventories, getting their raw materials and finished goods "just-in-time" for when they needed to be used or sold. Prior to this change, firms often held large stocks of goods on hand. When a recession came, they would just run down those inventories. This effectively meant no new orders for those further along the supply chain, so those firms effectively shut down during the recession. Then when demand picked up, they would rush to get inventories back up. So that meant bigger swings down and bigger bounces back up.

In the modern world, just-in-time processing and inventory management means that firms run lean. Between 1992 and 2005 the average ratio of inventories to sales in the US fell from over 1.6 months' worth of sales, down to almost 1.1 months' worth by 2005 (chart 1). This may not sound like much, but in 2005 that difference was equivalent to USD 200 billion. Since then, however, the ratio has been rising, and is now back up to the levels of the late 1990s. The spike in 2008 was the collapse in sales that came from recession, but the increase started before that and has continued ever since. And it is not just the US: although more volatile, the Japanese index has followed the same pattern.

Some recent events may have encouraged a higher level of inventories. The Great Japan Earthquake of 2011 led to a sudden disruption of Japanese industrial production, which gave rise to wide, and sometimes surprising, disruptions to the fragile supply chain. But perhaps most importantly, near zero deposit rates make the opportunity cost of holding onto inventories much lower: inventories are effectively inflation-linked - as the selling price of the goods in your inventories goes up, so does the value of your inventories. So the real return on inventories is probably higher than the returns firms can achieve by depositing the cash in a bank.

Chart 1: Stocking up

Inventory to sales ratio, expressed as months' worth of sales held in inventories (for USA) or as an index (for Japan), 3-month moving average



Source: Census Bureau, Japanese Ministry of Finance, UBS Asset Management

The Great Recession also disrupted supply chains. Producers were often unable to secure commercial paper to finance short term expenditure, making it hard to identify. Paradoxically, the impact of this was muted because everyone wanted to run down their inventories as quickly as possible, so an inability to replenish inventories was not really a problem. But the experience revealed to firms just how fragile their supply chain was, and that perhaps the inventory to sales ratio was too low by 2006. In investment terms, firms had been maximising returns by reducing inventories, but in so doing were taking too much risk. A higher level of inventories may be the new norm for business, although this may edge down slightly as interest rates rise.

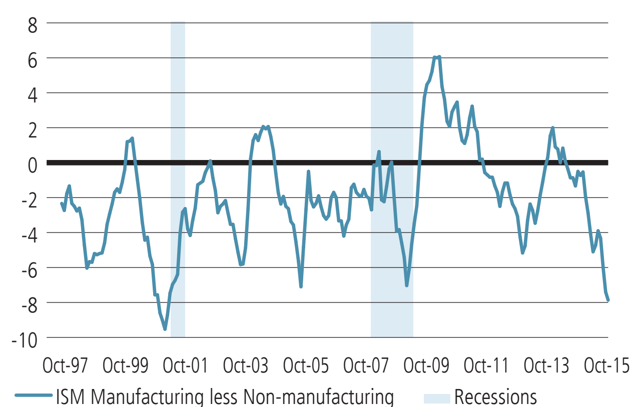
Cycling

Since the summer, the weakness in the US has been very much down to inventories and, in a related way, international trade. The important ISM manufacturing survey dropped sharply as producers cut back. Yet its counterpart, the ISM non-manufacturing survey, remained steady. This would be consistent with a trade adjustment.

A divergence of this kind between the two is not unusual (chart 2). Manufacturing did fall below non-manufacturing quite sharply in both the 2001 and 2008 recessions. But these falls are hardly isolated. For example, in 2005 ISM manufacturing dived relative to non-manufacturing. Yet growth in 2005 averaged 3%, so it was hardly a signal of recession. The same can be said of 1998, 2003 and 2012. Although the relative drop this year has been very large, it can simply be indicative of a larger than usual inventory correction.

Chart 2: Out of order

Gap between ISM manufacturing and non-manufacturing surveys and US recessions, 3-month moving average



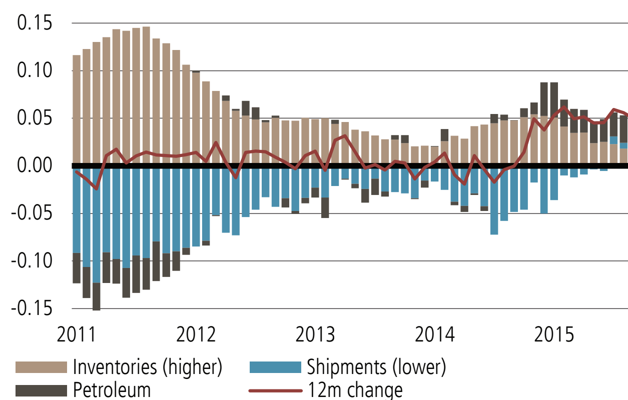
Source: Institute of Supply Management, UBS Asset Management

But what has driven this divergence and the big increase in the inventory to sales ratio over the last year? Even if there has been a structural increase in the ratio, such a change is likely to be gradual. But the sudden increase over the last year or so is unusually rapid. At its simplest, it can either be driven by higher levels of inventories, or lower levels of sales. It could also be caused by changes in specific industries.

A breakdown of the ratio for manufacturing reveals exactly this point (chart 3). Up until the start of this year inventories had been growing at a fairly steady pace, but have now flat-lined. Shipments (the manufacturing equivalent of sales) started falling earlier than that, and actually shrank this year. This is exactly the weakness we might expect from the behaviour of the ISM surveys. But a very large part of the shift has come from just one sector: petroleum. Oversupply has led to a huge increase in oil inventories. Hence the increase in inventories, while notable, has not been as widespread as the headline might lead you to believe.

Chart 3: Oiled again

Contributions to 12-month change in manufacturing inventory-shipments ratio, as months' worth of shipments



Source: Census Bureau, UBS Asset Management

Oil inventories cannot continue to rise, simply because storage capacity will start to run out. So a correction in the ratio looks ever more likely. As firms correct inventories, the levels may start to look better and production should resume. After all, domestic demand remains strong. While the first estimate for GDP growth was just 1.5% in the third quarter, final domestic demand grew at twice that pace. Although firms may have invented new reasons to keep inventories higher in recent years, they will want to sell those inventories at some point.

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