Will tomato ketchup kill inflation?

Chief economist's comment

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- The inventories that companies have lurking in their storerooms and warehouses will matter to the inflation story over the next twelve months.
- A lack of retailer inventory in the first half of this year has resulted in less price discounting over the summer. With no excess stock, there was no need to discount. Normalizing retailer inventory will normalize seasonal discounting, and this will remove a driver of higher inflation and may lower inflation through base effects in 2022.
- There is also the possibility of a tomato ketchup effect—supply is stuck in a bottleneck, and seemingly unable to come out, until something happens to loosen the bottleneck and there is a supply surge.
- This means that unclogging one small part of a supply chain might release a significant amount of 'pent up' supply for a more important product, and by changing the supply and demand balance lead to lower inflation pressures.


Source: gettyimages

For much of economics, it is what happens out of sight that really matters. As the global economy has become more and more complicated, investors tend to focus on the visible and the simple. But the important explanations often lie behind the scenes.

One hidden area that has always had economic importance is inventory. This is the stock put away in storage rooms and warehouses ready to be brought out at a moment’s notice to meet customer demand. What companies are storing away seems a rather dull topic, even by the standards of economics. However, with global supply chains being challenged and normal patterns of consumer behavior being abandoned, inventory has become a lot more important. In particular it may be important to inflation.

No sales

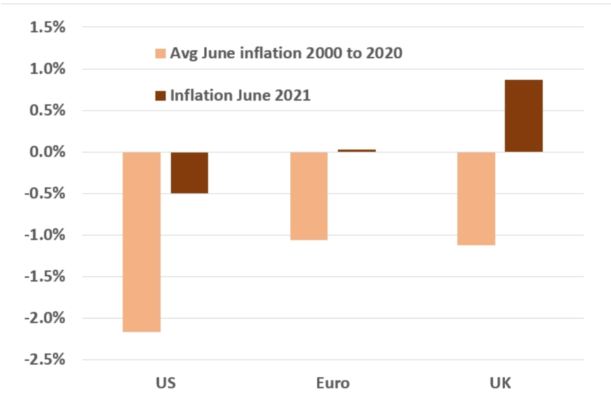
If a product is seasonal, or subject to the trends of fashion, inventory can drive down prices at certain times of the year. Whenever the seasons or fashions change, retailers need to get rid of the old to make way for the new. Storerooms must be cleared of stock that will not ordinarily sell—and that means discounting the prices and holding sales. Clothing is a good example of this—with summer and winter sales to clear the stockpiles.

The pandemic has meant that many retailers were not holding inventory. With restrictions still in place, retailers did not buy in large amounts of clothing during the first half of 2020. Clothing imports into countries like the US, the UK and Germany were unusually weak at the start of this year, suggesting that goods were not being stockpiled. US clothing retail inventory in May 2021 was the lowest value it had been in almost eight years. That means, in turn, that there was no need for price discounts to clear inventory as the summer approached.

Normally, things like clothing fall in price every June as summer sales take place. This year, the price of things like clothing fell less than normal in the summer sale season, as figure 1 shows.

Figure 1. Summer sales for clothing did not happen in 2021

The month-on-month change in clothing consumer prices in June, comparing 2021 with the average June price change since 2000



Source: UBS calculations, Haver

The lack of unwanted inventory has meant that inflation has been higher in the early summer than would otherwise be the case. However, products like clothing will be a disinflation force in the future. As economies normalize, inventory holdings will normalize. That means the pattern of discounting prices in seasonal sales will go back to normal, and push inflation lower. In addition, next year the year-on-year inflation rate will be comparing summer sales in 2022 with the lack of summer sales in 2021, and deflation is the likely outcome in the relevant sectors.

The tomato ketchup theory of disinflation

The impact of inventories on summer sales should drive inflation lower for selected goods and services. A far bigger potential impact is the tomato ketchup effect.

Economists of a certain age remember when the sugary condiment "tomato ketchup" was sold in glass bottles. The nature of tomato ketchup is that it does not pour out of a glass bottle very easily. Ketchup would become stuck in the neck of the bottle. Repeated banging on the base of the bottle would yield little or no ketchup, until suddenly one blow would allow ketchup to break through. The result would be that the gourmet diner would find their food deluged with far more ketchup than any sensible human being could ever want to consume.

There is a possibility that something similar is happening with global supply chains. If a long and complex supply chain is experiencing a shortage or delivery problem with one component, the end product cannot be completed. There is, in fact, a bottleneck. Once the problem is resolved, and with all the other parts of the product ready and waiting to go, there is a possibility of a sudden supply surge hitting the market and exerting disinflationary pressure.

The tomato ketchup effect only occurs if there are individual components that are in short supply (for whatever reason). If there is a more general supply-demand imbalance, it is unlikely that there will be a future supply surge. As the global economy recovered from the pandemic, production did increase relatively quickly. Global manufacturing production and global trade both exceeded pre-pandemic levels in the first quarter. Consumer spending was still below pre-pandemic levels in all developed economies in the first quarter. This does not mean goods production always exceeded goods demand, as some of this pattern is due to the rise in spending on goods relative to spending on services in the first part of this year. But this pattern does at least challenge the idea of a general supply-demand imbalance.

A supply bottleneck does not have to mean inflation. It may just mean a longer wait before a product is delivered. It is noticeable that for all the hue and cry of a microchip shortage, microchip import prices are still in deflation territory in many economies. Indeed as consumers move to shop on line, the idea of waiting for goods to arrive becomes more acceptable—consumers do not expect the instant gratification of bricks and mortar shopping.

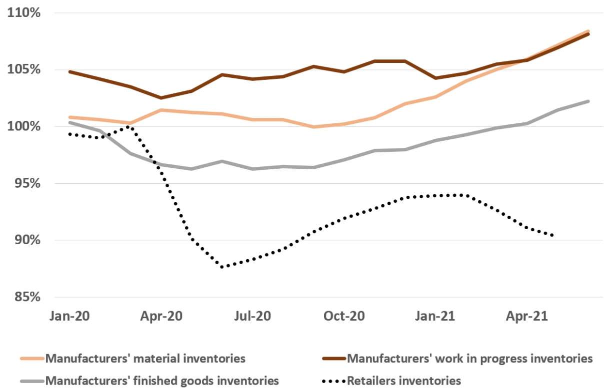
How would this potential for a tomato ketchup surge and a possible future disinflation impulse show up in the data?

- Retailers' inventories will be generally low. If supply chain problems mean that goods cannot be completed, retailers will have trouble getting supplies.
- Manufacturers' inventories should generally be normal or higher, but should follow a specific pattern within the production process.
- Inventory of manufacturers' raw materials will be supported if manufacturers are able to purchase most components and are just waiting for a missing piece. Note that the inventories can be held off-site—at ports for instance, so long as the components have been imported into the country.

- Inventory of manufacturers' work in progress will be supported if most of the production can be completed with the missing component slotted in later.
- Inventory of manufacturers' finished goods will be weaker than raw materials and work in progress, because without a missing component the product will not be finished.

Figure 2. US inventories lower, the closer you are to the end consumer

Inventory levels, 2019 average = 100



Source: US FRED, UBS calculations

Figure 2 compares current US inventory levels with the 2019 average—these are value-based measures, so price increases will have had some effect. However, it is clear that there is no shortage of at least some components early in the production process. The pattern is exactly what you would expect for a tomato ketchup bottleneck. Basic materials and work in process are both about 8% above 2019 levels. But finished goods are not as robust—just above 2019 levels. Critically, retailers inventories are significantly below the 2019 levels.

If, for example, an automaker has all the parts they need to make a car except the microchip, then that would show up as strong raw materials and work in process inventories, but weaker finished goods inventories and (critically) weaker retailer inventories. This is exactly the pattern that has emerged in the auto sector over the course of this year.

Do inventories drive disinflation?

Inventories data suggests some disinflation impulse in developed economies over the next few quarters. The fact that we have had fewer, and smaller summer sales has added to inflation now. As the retail inventory / seasonal price discounting pattern normalizes, this will first remove an inflation contribution, and then from next year act as a disinflation force (discounted prices in 2022 being compared to undiscounted prices in 2021).

The tomato ketchup theory of bottlenecks—everything ready to go, but one missing piece holding back supply—is a less mechanical force for disinflation.

Producers do appear to have a lot of pieces of the production puzzle stored up and ready to go—but are waiting for the delivery of a critical part of the process. That means that supplies for retailers (and therefore for end consumers) may be delayed, and they may be subject to higher prices.

When that final part is delivered, it is like the final blow on the ketchup bottle. A supply surge is then possible. Of course the timing of this is not necessarily going to be consistent. Some missing parts may arrive next month, some may not arrive until next year. So the evidence of a tomato ketchup effect on prices is more likely to show up in specific product prices, rather than across the whole consumer price index at the same time. But over time, the effect should be to lessen inflation pressures.

So, the tomato ketchup effect could add to disinflation forces—although, ironically, it should be noted that actual condiments prices are already a source of consumer price deflation in the world's developed economies.

Appendix

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