

Discounting discounts

Economist Insights

In today's global society, the changing seasons might seem almost irrelevant. It is always spring or summer somewhere in the world. But seasonality still plays a surprisingly important part in the calculation of core inflation – surprising being the operative word. This is a supposedly stable measure yet seasonal factors, such as the winter sales, cause an unexpected degree of volatility which markets find hard to take into account.



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Central banks usually target inflation, and for most central banks the target is headline inflation. But if a central bank actually tried to target headline inflation they would be changing rates every few months, and quite possibly changing direction each time. Both oil and food prices are very volatile and can have a big impact on inflation from one month to the next. Just think of what monetary policy would have looked like if central banks had tried to compensate for the fluctuations in oil prices over the last couple of years. And in any case, monetary policy has little impact on energy prices; monetary policy would just force the rest of the economy to compensate.

So central banks effectively target core inflation, because it is so much more stable. Markets, of course, are fully aware that core inflation is more stable and, for this reason, it does not take much of a surprise in the core inflation data to trigger an aggressive reaction.

Markets are quite good at understanding movements in core inflation that are driven by the economic cycle or consumer expectations. But there is one rarely considered factor that can cause quite significant inflation volatility: seasonality.

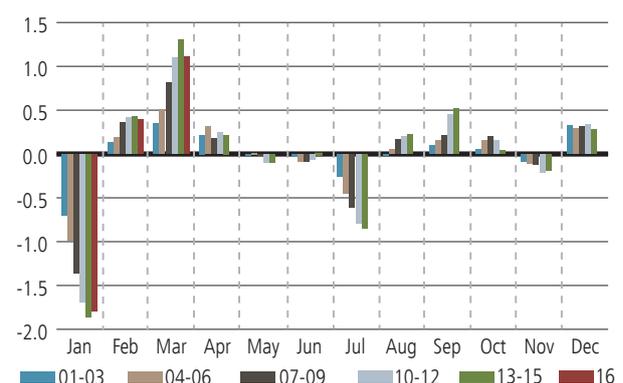
Inflation is meant to be an accurate measure of what the consumer pays for a certain basket of goods and services. If the prices of many consumer goods or services like clothes or airline fares, for instance, are affected by seasonal sales and public holidays then the consumer price index calculated on those prices should also mirror those seasonal swings. The impact of seasonality on the price of goods and services can be quite substantial. For instance, the price of clothes or airplane tickets can move as much as 20% during sales and in the subsequent re-pricing. And this can have a relevant impact on the aggregate core price index.

Since we usually express inflation as the percentage change in the price of a basket of goods and services relative to a year ago, then in principle discounts during sales should have little effect on inflation. If sales take place every year on a given month then there should be little impact: prices drop this year but they also dropped last year, and the effects cancel out.

Although true in theory, this argument clashes with the crude reality that seasonality might not be constant over time and can change dramatically over the years. The Eurozone provides the best example of this. In fact, seasonal factors (i.e. the contribution to monthly changes in consumer prices due to seasonality) have changed radically since the introduction of the Euro (chart 1). Around a decade and a half ago, January sales would negatively impact core prices by just over 0.5% while July summer sales had almost no impact. This contribution has increased over time to about -2% for January sales and almost -1% for summer sales.

Chart 1: Seasonal instability

Seasonal factors for Eurozone core inflation (% , average for different groups of years)



Source: Eurostat, UBS Asset Management

By construction, seasonal factors have to total zero over a year. This means more aggressive sales in January will also imply a more aggressive re-pricing over the following months (such as February and March). This can, and has, increased the volatility of core inflation through the year.

This dramatic change in the seasonal pattern is much more visible in the Eurozone than in other developed economies like the US and UK, where inflation tends to have a much more stable seasonality. So, what could have caused such an evolution in the seasonal pattern of Eurozone core inflation?

There are a few reasons. The first is more a technical than an economic reason and it relates to improvements in the statistical methodology used to account for seasonal sales and discounts.

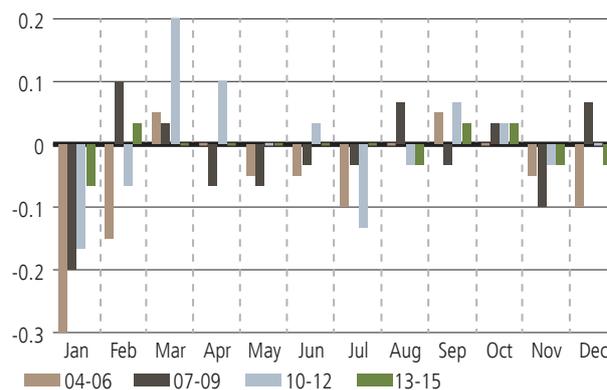
Seasonal sales are not a recent phenomenon. However, in most countries they were not included in the calculation of inflation until it was decided to create a measure of Eurozone inflation based on a common methodology, the so called Harmonised Index of Consumer Prices. This meant most European countries had to modify their methodology for surveying prices and calculating inflation. Furthermore, not all the statistical offices of the different countries decided to introduce the new methodological improvements at the same time. As a result, it looks as if in the Eurozone seasonal sales have only become more popular recently, whereas it may be that they are simply being measured more accurately.

While this explanation is possibly responsible for most of the intensification in the seasonal pattern, there are also other economic factors at play, such as competition. The internet not only created an alternative means of purchasing goods and services it, also allowed consumers to compare prices among different shops and providers. This has probably led to more aggressive competition during sales. At the same time, the prolonged period of economic crisis in the Eurozone could have forced shops and firms to be more competitive during sale periods since people were not willing to spend that much. This cyclical component could partially explain the reversal in the seasonal pattern that seems to be taking place at the beginning of 2016.

If core inflation has become more volatile over the course of the year because of the change in seasonality, it has also become more difficult to forecast given that neither statistical models nor economic judgement can easily cope with such changes in the seasonal pattern. This also means the change in the seasonal pattern might have created a seasonality in market surprises for core inflation (the actual reading relative to consensus expectations) (see chart 2), and potentially on market reactions too.

Chart 2: Inflated surprise

Bloomberg consensus average forecast error for Eurozone core inflation (% , average of each group of years)



Source: Bloomberg LP, UBS Asset Management

The evidence suggests this is the case. Since 2004 core inflation has always surprised markets on the downside in January, July and November. Interestingly, it seems that over time, markets have accounted for more aggressive sales in January since the surprise has decreased over time. Conversely, markets have regularly underestimated core inflation in March and to a lesser extent in September.

The efficient markets hypothesis tells us that this should not really be happening. If there is a persistent seasonal bias in the data, the market should be capturing it. Perhaps market economists are not as good at capturing systematic patterns as the market is. But at least they do seem to be learning: economists are overestimating Eurozone inflation by far less in January than before, despite the increase in seasonality. The market (and especially economists) may not be as quick as the efficient markets hypothesis would suggest, but eventually they manage to discount the patterns. Or in this case, to discount, rather than miscount, the discounting.

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