The current economic cycle, which started with the 2008–2009 crisis, has been characterized by a fairly constant weakness in inflation. In the United States, the average annual growth of the total consumer price index (CPI) has been 1.7% since 2009. For the core index, which does not include food or energy, the average increase is slightly higher at 1.8%. The 2018 increases have gone beyond the cyclical average in both cases (graph 1). The annual change in the consumption expenditure deflator, which is the other main way of measuring inflation in the United States, also went beyond its cyclical average of 1.5%. In addition, it also went slightly over the Federal Reserve (Fed) target, which has been set at 2.0% since 2012 (graph 2).

Many factors have contributed to the relative acceleration of inflation. We listed some of them in an Economic Viewpoint a year ago. One of the main pressure factors on prices is the reduction of excess production capacity. Since the recovery started, the growth of real GDP has overtaken the growth of potential GDP, which the Congressional Budget Office estimated to be around 1.7%. The gap between the two has now closed, and the output gap has been positive since the beginning.

The sustained growth of the U.S. economy is now putting greater pressure on production capacities, including within the job market. That should also have an impact on inflation. Several price indexes have been on the upswing since the beginning of 2018. It is time to ask whether U.S. households and businesses are really noticing these price hikes and whether they have adjusted their expectations as to future inflation.

In this first part, we see that inflation expectations from the medium-term bond market have stayed relatively stable. Businesses are experiencing upward pressure, especially on inputs.

**GRAPH 1**
Recent inflation has edged slightly above the cyclical average

**GRAPH 2**
The annual change in the consumption expenditure deflator has recently exceeded the Fed target

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NOTE TO READERS: The letters k, M and B are used in texts and tables to refer to thousands, millions and billions respectively.

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of 2018 (graph 3). Among the other factors contributing to current inflation are job market tightening (graph 4), import price increases, tariff hikes by the Trump administration and higher dwelling costs. Other factors are pulling inflation down, however, such as international competition, technology, e-commerce, as well as the recent rise of the U.S. dollar.

The volatility of that metric means that short-term expectations are also very volatile, so they do not give us much information on the true perception of inflationary trends.

**GRAPH 5**
The bond market’s short-term inflationary expectations closely follow changes in gas prices

We need to look at longer-term expectations, which appear much more stable. The standard deviation for 1-year bonds is 0.82 percentage points. It drops to 0.50 points if we look at 2-year bonds, and around 0.29 points for 5-, 10- or 30-year bonds.

Medium-term bonds (five and ten years) suggest that future inflation is seen as remaining within Fed targets, around 2.0% (graph 6). However, when we look at the overall cycle, the markets have always perceived inflation to be higher in the second half of a 10-year cycle; in other words, during the first five years inflation is usually thought to be weaker than during the second five years. But in fact the gap between the two is relatively tiny, so there has been no fear of it spiralling out of control, and the markets are showing faith in the Fed’s policy.

**GRAPH 6**
Medium- and long-term inflation expectations are more stable

One element that has provided some price stability up to now is the anchoring of inflation expectations, but is that factor really invariable? After nine years of recovery, could inflation expectations go still higher? That is an important question. In a *speech* at Jackson Hole in August, the new Fed Chair Jerome Powell argued that “Anchoring longer-term inflation expectations is a vital precondition for reaching all other monetary policy goals.” In that context, we need to take a look at the expectations of the financial markets and businesses.

**Financial Market Expectations**
We can observe inflation expectations in the bond market by comparing real return bonds with nominal bonds. In the short term, the expectations closely follow observed inflation growth; they reflect changes in gas prices more than anything (graph 5).
There was some weakness in expectations around 2015–2016, however. The constant underperformance of inflation metrics, including CPI, deflators and average weekly wages during that time period, despite the growth of the economy and the job market, seems to have triggered an adjustment of long-term expectations. As a result, even in the longer term, the bond market’s inflation expectations were not immune to price fluctuations, especially when trends were sustained for several years, like we saw with the weak inflation in the middle of the 2010 decade. Expectations went back up in the past two years, though, and have now stabilized.

**Business Expectations**

Not much information is available on business inflation expectations, at least for the medium or long term. Even for the short term, we usually need to fall back on purchasing manager surveys like the ISM surveys.

The ISM manufacturing and non-manufacturing indexes feature a “prices” component that reflects the evolution of prices paid by businesses. Like the short-term expectations of the bond market, the evolution of these indexes in relation to input costs seems to mirror the movement of energy prices (graph 7). Surprisingly, there has not been much difference in the correlation of gas prices with either the manufacturing index or the non-manufacturing index since 2010. We should therefore look at rises in the “prices” component of the ISM indexes not as a reflection of inflationary pressure trends but rather as the effect of fluctuations in energy prices.

**GRAPH 7**
The ISM prices paid usually depend on energy costs

Among the other indicators of inflationary pressures on businesses, there is some interesting information from certain regional indexes of purchasing managers bearing on the difference between prices paid and prices received. For example, the Philadelphia Fed index lists those two elements separately. They have both increased substantially since 2016, but there appears to be greater pressure on prices paid (graph 8). That could reflect several factors, including pressures from energy costs and the difficulties businesses are having passing on rising costs to their customers. The other regional manufacturing indexes, like the New York Fed’s Empire index, also indicate a higher recent increase for prices paid than for prices received. A sustained increase in business costs coupled with the inability to raise output costs could limit their profitability.

The monthly National Federation of Independent Business survey also has a price fluctuations component, but it bases its questions on short-term expectations too. Pressure on sales prices over the past three months and expectations of price hikes in the coming three months have both increased (graph 9). Although the forecast fluctuations were always higher than actual ones in the past, this gap has closed recently. Despite inflationary pressures, price hikes are not the main problems faced by small businesses. In August, only 2.0% of the businesses surveyed cited inflation as their main problem (the lowest category); for most of them it was the quality of the workforce (25.0%) and taxes (15.0%).
The Atlanta Fed publishes the only index on business inflation expectations over five years. The quarterly results of that survey go back to 2012 and show a declining trend up to 2016, followed by a sharp rebound (graph 10). In that survey (which also covers short-term expectations), the Atlanta Fed also asks businesses about the factors that will influence prices for the coming year. As a general rule, input costs (labour and other costs) have a greater impact (graph 11).

Inflation expectations, or at least the signs of pressure on both short- and medium-term inputs and outputs, are similar to what we concluded from the bond markets. Expectations have gone down between the start of the current growth cycle and 2016. In 2015 and 2016, there were even fears of a downward spiral, propelled by the low costs of certain inputs, i.e. energy. But the situation has changed rapidly, and inflationary pressures are now more strongly felt in the various indicators from business.

Another factor has recently come into play for business: the consequences of the Trump administration’s protectionist surge. A survey by the New York Fed related to its manufacturing and non-manufacturing indexes (Empire index and Business Leader Survey respectively) is most enlightening. In August 2018, 68.0% of manufacturing respondents said the tariff hikes had increased input costs. The proportion was lower on the services side, at 43.8%. There are especially strong fears for 2019: 71.9% of manufacturers expect that trade policies will up the cost of inputs, while 52.0% say sales prices will rise in 2019. On the services side, 57.6% fear a coming spike in input costs, while 34.6% expect sales prices to rise as a result of the tariff hikes. It looks as if the trade war will affect the profits of U.S. businesses.

More anecdotally, the Fed’s most recent Beige Book, which is another source of information about inflationary pressures and expectations for businesses, also mentions fears related to the tariff hikes. It also has other findings, like the greater pressures on inputs than on outputs.

All these factors suggest that businesses are feeling more inflationary pressures. But can they afford to pass on these increases to their customers? In the short term, this could be difficult. A growing trend could eventually affect households, however. Part 2 of this analysis will look at the latter’s inflation expectations.

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