

## Expectations: the key to monetary policy

What comes to mind when you hear the terms monetary policy and central bank? Perhaps they evoke images of serious-looking men<sup>1</sup> in impeccable suits who, armed with statistics and equation systems, establish the tools that will ensure the stability of the economy with mathematical precision? Although there is some truth to this image, it gives the false impression that the economy works like a simple mechanical gear and fails to take account of its key human component: expectations.

### US: Phillips curve for 1948-1969

Inflation (%)



Source: CaixaBank Research, based on data from FRED (Fed of St. Louis).

discovery, monetary policy theorised a trade-off between inflation and unemployment: if inflation could be generated, it could produce a fall in unemployment. However, this theory was based on the assumption that consumers and businesses would not anticipate that the increase in the supply of money would translate to an increase in prices in the long term. In other words, it was assumed that by having more bank notes in their pockets, consumers would spend more, companies would hire more workers and the unemployment rate would fall. However, in the 1970s, another group of economists, who assumed that economic agents adjusted their expectations in a less innocent and more rational manner, came to a completely different conclusion: this type of monetary policy would not reduce unemployment, but rather would only generate more inflation. These economists, led by Milton Friedman, pointed out that when the economy uses all its productive resources (and cannot increase its production any more), issuing more bank notes only reduces the quantity of goods that can be purchased with each one: that is, prices increase. Therefore, consumers and businesses that form their expectations rationally will know that when the central bank puts more money in their pockets, they will not be any richer; rather, they will face higher prices, so they will neither consume nor produce more. In fact, as can be seen in the second chart, in the 1970s, the data questioned the results of Phillips and his peers: in that decade, increases in inflation were accompanied by rises in unemployment.<sup>2</sup>

In fact, the direct impact of the interest rate set by a central bank, its most well-known tool, only affects a small portion of the economy: the short-term liquidity that financial institutions obtain from the central bank. The real power of monetary policy lies in how this tool spreads to the many different interest rates that affect the economy as a whole (mortgages, business credit, bank deposits, the cost of public debt, etc.). This largely happens through expectations about future monetary policy: that is, an interest rate over, say, 10 years reflects the central bank's interest rate that is expected to prevail in the next 10 years.

To begin to understand the role of expectations, let us consider one of the most important correlations in economics: that between inflation and unemployment. This correlation is known as the Phillips curve, in honour of William Phillips who, in 1958, noted that over time a rise in inflation coincides with a reduction in unemployment (see first chart). Following this

### US: Phillips curve for 1970-1979

Inflation (%)



Source: CaixaBank Research, based on data from FRED (Fed of St. Louis).

1. Among the main central banks, only the Swedish Riksbank has achieved gender parity in management positions. In the Fed, the percentage of female managers is no more than 40%, while in the ECB it is barely 25% and in the Bank of Japan it stands at 3.4%.

2. The current consensus is that the Phillips curve has a negative slope and, therefore, there is an inverse correlation between inflation and unemployment, which influences the decisions of the central banks. This is consistent with the idea that consumers and companies form their expectations rationally, because economists have shown that there are nominal rigidities that cause prices to adjust slowly. These rigidities imply that an expansionary monetary policy does not generate inflation immediately, even with rational expectations, and therefore it stimulates economic activity.

Another example of the importance of expectations in the design of monetary policy can be found in the correlation between interest rates and inflation. In general, if the central bank wants to reduce inflation, it must increase its interest rate: in doing so, it encourages saving, discourages consumption and reduces inflationary pressures. However, in a new twist, a group of economists known as neo-Fisherians (in reference to Irving Fisher, an economist who was a contemporary of Keynes) put forward a provocative idea: inflation actually increases when interest rates rise. The idea is inspired by the historical relationship between inflation and nominal interest rates, represented in the third chart.<sup>3</sup> If you think that this reasoning belies common sense, a study by Falck and her co-authors<sup>4</sup> found some evidence in favour of neo-Fisherism. Specifically, during periods of low uncertainty, when all agents in the economy (including the central bank) have access to practically the same information to assess the macroeconomic scenario, Falck *et al.* (2017) showed that the neo-Fisherian prediction does not bear out: a rise in rates reduces inflation. However, in periods of high uncertainty, when private agents may have less information than the central bank, there is evidence in favour of neo-Fisherism: interest rates rises appear to be followed by increases in inflation. The key lies in expectations: when faced with a high degree of uncertainty, the actions of the central bank shed light on the information it has. For instance, in the event of a rise in rates, agents deduce that the central bank foresees an increase in inflation and, therefore, they revise their inflation expectations upwards and set higher prices.

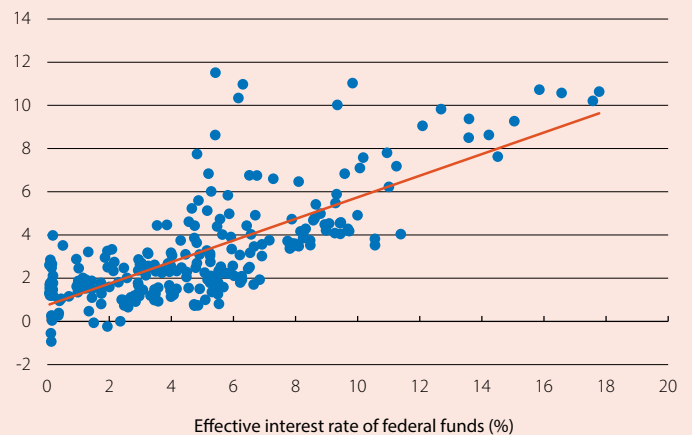
The results found by Falck and her co-authors also indicate that proper transmission of monetary policy becomes complicated in periods of uncertainty. This is why, since the last recession, central banks have supplemented their traditional tool (the reference rate) with intensive communication.<sup>5</sup> For example, between 2015 and 2018, the ECB has constantly reiterated its intention to maintain interest rates at low levels for a long period of time. In doing so, it influences agents' expectations and manages to reduce interest rates across a wider range of assets. In fact, the asset purchase programmes implemented by the major central banks in recent years can also be interpreted as a way to make their intention to keep interest rates low for a long period of time seem more credible (which is why, in the case of the ECB, for example, these programmes are designed to last a long time).

Central banks not only transmit information to economic agents, they also use the market prices of financial instruments to obtain information about the state of the economy. This circular interaction between the central banks and the financial markets, in terms of both managing and, at the same time, gathering expectations, leads us to what Paul Samuelson called the reflection problem. That is, the central bank's influence on the prices of financial instruments can be so great that, to paraphrase Samuelson, the central bank's reaction to signals from the market might end up being similar to that of a monkey reacting to its reflection in a mirror.<sup>6</sup>

Adrià Morron Salmeron  
CaixaBank Research

### US: interest and inflation rates, 1954-2018

The PCE price index (year-on-year change, %)



Source: CaixaBank Research, based on data from FRED (Fed of St. Louis).

3. The conventional interpretation assumes that it is higher inflation which causes higher rates, whereas proponents of neo-Fisherism suggest that we might be getting the direction of causality wrong.

4. E. Falck, M. Hoffmann and P. Hurtgen (2017), «Disagreement and monetary policy», Deutsche Bundesbank Discussion Paper n.º 29/2017.

5. Credibility is another key factor. To strengthen it, it has been fundamental for central banks to be seen as independent institutions that are governed by rules or objectives that can be verified (such as inflation close to, but below, 2%, in the case of the ECB).

6. Quote from S. Morris and H.S. Shin (2018), «Central bank forward guidance and the signal value of market prices», BIS Working Paper, n.º 692.