EDITORIAL

UNDER THE BONNET: THE ECB'S REACTION FUNCTION

> Following the first rate cut at the June meeting of the ECB, the focus has now shifted to the timing and speed of further reductions in the deposit rate. The guidance is vague: decisions will be data-dependent. For investors, estimating policy rules -the relationship between past decisions and inflation and other relevant variables- has merits to get a better understanding. Such a rule shows the key role played by the difference between observed inflation and the inflation target. However, there are important caveats. The estimated rule implies a very slow adjustment of the deposit rate, which is difficult to justify when the ECB is in easing mode. Reading between the lines of Governing Council members' speeches is crucially important in order to override the inertia embedded in the estimated policy rule. In theory, past policy easing can offer insights but since the start of the euro we only have one genuine reference point.

Since the first rate cut at the June meeting of the ECB, the focus of households, companies and financial markets has now shifted to the timing and speed of further reductions in the deposit rate. The official line is that decisions will be data-dependent, but this begs the question how the Governing Council will react to the incoming data. On many occasions in recent months, its members have insisted that three factors are key -the strength of monetary transmission, the recent underlying dynamics of inflation and the inflation outlook-, but what we can expect in terms of decisions remains a mystery. The data that will drive them still need to be released and, in addition, the parameters of the reaction function are not clear. For a central bank, remaining vague about the latter is perfectly rational -otherwise it would commit to a strict policy rule, thereby reducing its policy flexibility-, but investors will complain about the ambiguity that goes with it.

This is where econometric models come, to a certain degree, to the rescue. They simulate the reaction of activity, demand, inflation to exogenous shocks -assumptions about discretionary changes in monetary and fiscal policy, oil prices, foreign variables- and to this end, monetary policy is endogenous: it reacts to the evolution of inflation, growth, the unemployment rate, etc. For the Eurozone, a recent ECB working paper on the central bank's new area-wide model provides an estimate of an interest rate rule, which, according to the authors tracks well actual policy[1]. The explanatory variables that go into the policy rule equation (exhibit 1) are the inflation gap -the difference between observed and target inflation-, the change in this gap, the output gap, the change in the output gap as well as an assumption about the neutral rate and the inflation target. The equation also has an estimated 'inertia coefficient', which captures the fact that the policy rate in each quarter will be largely dependent on its value in the previous quarter considering that, most of the time, the policy rate is either stable or only evolves gradually.

Based on this policy rule and the inflation and growth forecasts in the June ECB Staff Forecasts, a projection for the ECB deposit rate can be made[2] (table 1). As shown in chart 1, a decline is projected based on further progress in terms of disinflation, with inflation dropping just below target as of the first quarter of 2026. Although the output gap improves, it remains negative, which is also weighing on the estimated policy rate, although only slightly so given the small coefficient of this variable.

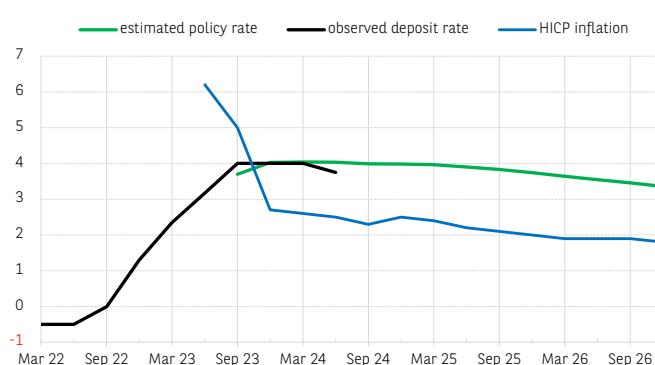ECB DEPOSIT RATE PROJECTION AND ECB STAFF INFLATION FORECAST

CHART 1

SOURCE: ECB, BNP PARIBAS

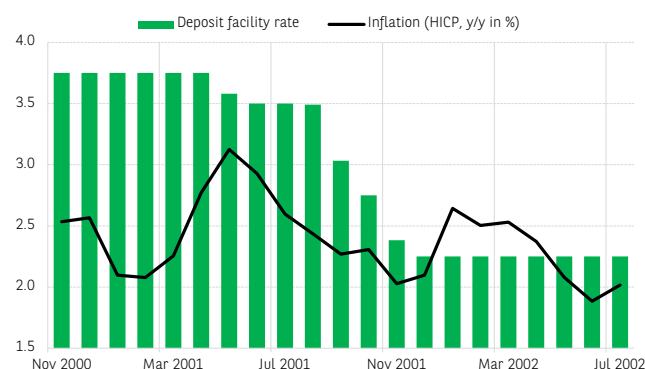ECB DEPOSIT RATE AND INFLATION

CHART 2

SOURCE: ECB, BNP PARIBAS

Indeed, the key driver is the inflation projection, which has a coefficient that is a multiple of the other coefficients. However, the impact of the disinflation is muted by the high degree of inertia that has been observed in the past, with the latter's coefficient having a value of 0.93.

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This means that the policy rule is of little help in making interest rate forecasts when inflation is declining whilst monetary policy is still restrictive. Due to the inertia, the estimated deposit rate would, in real terms, remain unjustifiably high considering that in the meantime inflation would have completely converged to target. Despite this important caveat, it is a useful tool for other purposes. Firstly, on a conceptual note, it reminds us that the nominal neutral rate -the sum of the neutral rate, which is a real rate, and target inflation- is the anchor for monetary policy. When all transitory dynamics have played out, the official interest rate should correspond to the nominal neutral rate. Secondly, it allows to simulate the sensitivity of the estimated policy rate to different economic assumption. As mentioned above, what matters above all is the inflation forecast, whereas the output gap path is of minor importance.

This leads to the conclusion that forecasting short-term interest rates in the Eurozone is a story of producing good inflation forecasts and doing ECB watching, the purpose of the latter being to override the inertia embedded in the estimated policy rule. Past policy easing can offer some guidance, but since the start of the euro we only have one reference point, which is the policy easing in 2001 (chart 2)[3]. As inflation was dropping from 3.1% in May 2001 to 2.0% in November of that year, the ECB quickly reduced the deposit rate from 3.75% in April to 2.25% in November. Drawing general conclusions from one observation would be dangerous.

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3 Other policy easings were either small and starting from an already low level of the deposit rate or important and very quick during the global financial crisis.

INTEREST RATE RULE: ECONOMIC INPUTS							
	neutral rate	inflation target	HICP y/y	inflation gap	change in inflation	output gap	change in output gap
coefficient				2.9334	0.0361	0.032	0.092
2024Q2	0.5	2	2.5	0.5	-0.1	-1.0	0.08
2024Q3	0.5	2	2.3	0.3	-0.2	-1.0	0.08
2024Q4	0.5	2	2.5	0.5	0.2	-0.9	0.08
2025Q1	0.5	2	2.4	0.4	-0.1	-0.9	-0.03
2025Q2	0.5	2	2.2	0.2	-0.2	-0.9	-0.03
2025Q3	0.5	2	2.1	0.1	-0.1	-0.9	0.08
2025Q4	0.5	2	2	0	-0.1	-0.8	0.08
2026Q1	0.5	2	1.9	-0.1	-0.1	-0.7	0.08
2026Q2	0.5	2	1.9	-0.1	0	-0.6	0.08
2026Q3	0.5	2	1.9	-0.1	0	-0.6	0.08
2026Q4	0.5	2	1.8	-0.2	-0.1	-0.5	0.08

TABLE 1

Source: coefficient estimates from *Monetary policy strategies to navigate post-pandemic inflation: an assessment using the ECB's New Area-Wide Model,* ECB working paper 2935, April 2024. *Inflation and real GDP growth forecasts:* ECB Staff Forecasts, June 2024. *Historical data on output gap:* Oxford Economics. Output gap projections based on author's assumption of potential real GDP growth and ECB growth forecasts. Neutral rate of interest: author's assumption. Other historical observations: Federal Reserve Bank of St Louis.

ECB: ESTIMATED INTEREST RATE RULE

Deposit rate = 0.9346*deposit rate in previous period + (1-0.9346)*(neutral rate + inflation target + 2.9334*inflation gap + 0.0361*change in inflation + 0.032*output gap + 0.092*change in output gap) + error term

EXHIBIT 1   Source: ECB working paper 2935, April 2024

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