

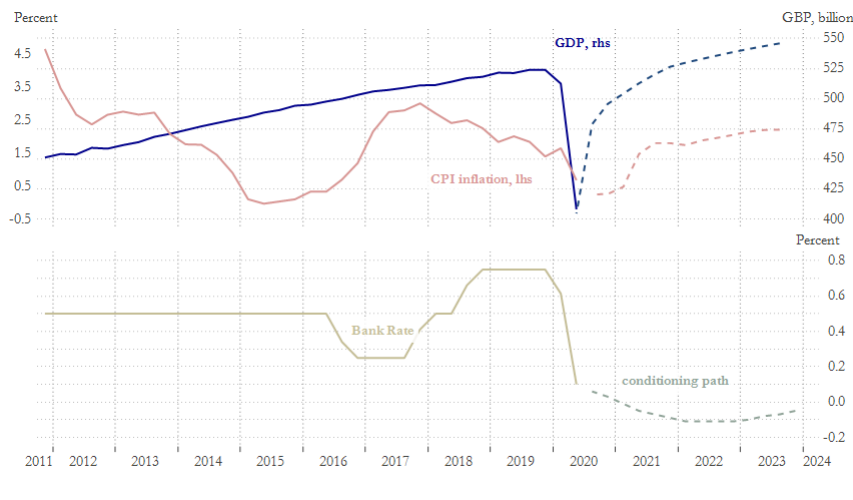
# MONETARY POLICY STRATEGY – HOW THE BOE DOES ‘IT’

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## 1. INTRODUCTION: THE CURRENT OUTLOOK

The BoE currently expects UK GDP to have troughed in Q2 as Covid-19-induced social distancing eased. A robust recovery from the severe, but short-lived, recession is expected to follow, although the rebound is also expected to lose some of its initial momentum within the year. The level of GDP is expected to regain its pre-Covid peak around the end of 2021. Inflation is expected to be weak in the near-term although it rises and almost reaches its 2% target in 2 years’ time. The outlook is ‘unusually uncertain’ and subject to risks that are, on balance, skewed to the downside. This outlook assumes a path for Bank Rate at, or around, current low levels (Figure 1).

FIGURE 1. The BoE’s GDP and Inflation Outlook



Source: BoE *Monetary Policy Report*, August 2020.

*Date:* August 11, 2020.

**The point** In this Note, I assess the link between BoE forecasts for the economy and its interest rate policy. I echo Svensson’s (2020) view of Fed policy and present a view of the BoE as a “forecast targeting” central bank. This implies quite a tight link between forecasts and policy action which is supported by the data.

Covid-19 raises the complexity of setting policy. One view, presented by De Grauwe and Ji (2020), is to eschew a forward-looking approach to policy owing to the crisis – to focus on the present, alone. The view presented here is quite different. A complex juncture demands a robust policy. On the grounds that a first difference rule applied to forecasts of the economy provides such a robust policy, setting policy solely about the present should be resisted.

## 2. IMPLEMENTING CONSTRAINED DISCRETION

**Good times, bad times** Good monetary policy involves a central bank saying what it does (clearly) and then doing what it says (consistently). A central bank communicating and acting in this way steers market interest rates successfully to achieve its remit for achieving price stability while supporting activity and full employment.

Bad policy generally involves the central bank saying one thing and then doing something else, and being time-inconsistent. When financial markets sense this is a serious risk, the central bank fails to steer market rates and achieve its aims. There are several examples of this happening at all central banks with a long history.

**Policy rules** Good monetary policy therefore has a significant *systematic* component to it, one understood by financial markets and the public that leads to effective policy transmission.

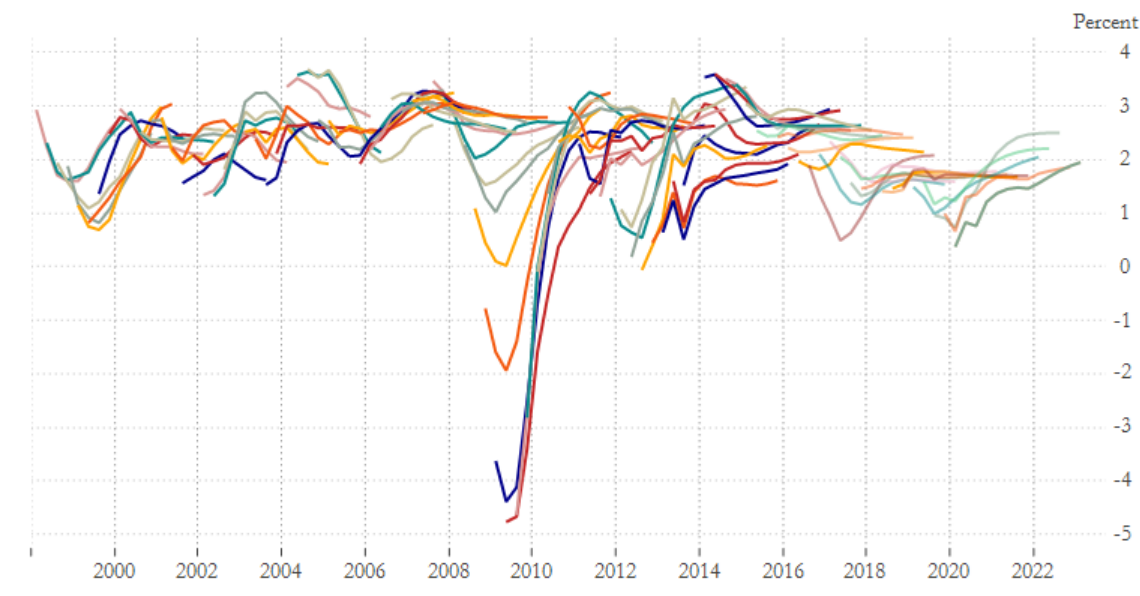
Policy rules summarise how this systematic component of monetary policy is related to macro data. Market participants aim to profit from understanding the rule, as well as necessary deviations from it as policy-makers implement their ‘constrained discretion’.

The BoE has described its own remit as flexible inflation targeting (IT) and constrained discretion (King, 2000). But how does the BoE do IT? While Taylor rules have a long history, it has proved difficult to summarise policy in a way that is robust to some of the key macro developments of the past few decades. Notably, that includes falling neutral interest rates and other structural changes in the economy. The succession of GDP forecasts (Figure 2) capture some of these structural changes. An effective policy rule needs to be robust to these and to the drift lower in neutral interest rates.

What to do? To operationalise the forecast targeting view of the BoE, I estimate first difference policy rules applied to the BoE’s own published forecasts. Past research suggests the first difference rule for interest rate changes is more robust to structural changes including a falling neutral rate.

Results shown below reflect and reinforce the need for the BoE to motivate and justify its own forecasts effectively; For market participants, results motivate a need to mark to market the latest interpretation of macro data in a way that brings together (i) the policy rule (ii) the signal from the latest data to the outlook and (iii) broader communications that signal a departure from the rule when the central bank employs (constrained) discretion.

FIGURE 2. Successive BoE Forecasts for GDP Growth

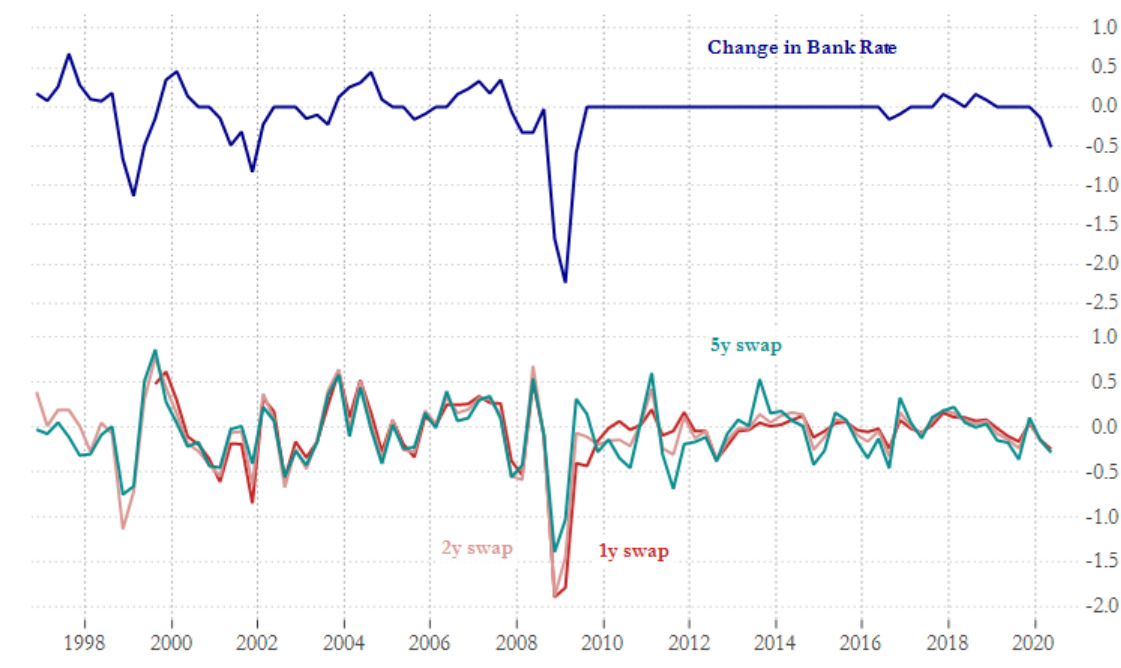


Source: BoE.

The benefit of being a forecast targeting central bank is that it is a remarkably concise yet flexible approach to policy-making. After all, it admits all the information that goes into generating an updated forecast.

### 3. RULE-BASED ISN'T RULE-BOUND

FIGURE 3. Policy Rates and Steering Market Interest Rates



Source: BoE.

The BoE's Bank Rate and market interest rates that the BoE aims to steer react jointly to changes in the data and the economic outlook (Figure 3). Through its influence on these market rates, the BoE influences the spectrum of retail rates including fixed rate mortgages and business lending rates, all key parts its policy transmission. This process would be especially smooth if the BoE's policy rule is well-understood by financial markets.

**A sample of forecasts** Consider a sample of BoE forecasts since November 2004 (when the BoE began publishing 3-year forecasts). There are 64 quarterly forecasts up to and including the February 2020 Forecast, approximately when Covid-19 struck. These various forecasts recall the varied shocks and structural developments shaping the UK outlook through this period.

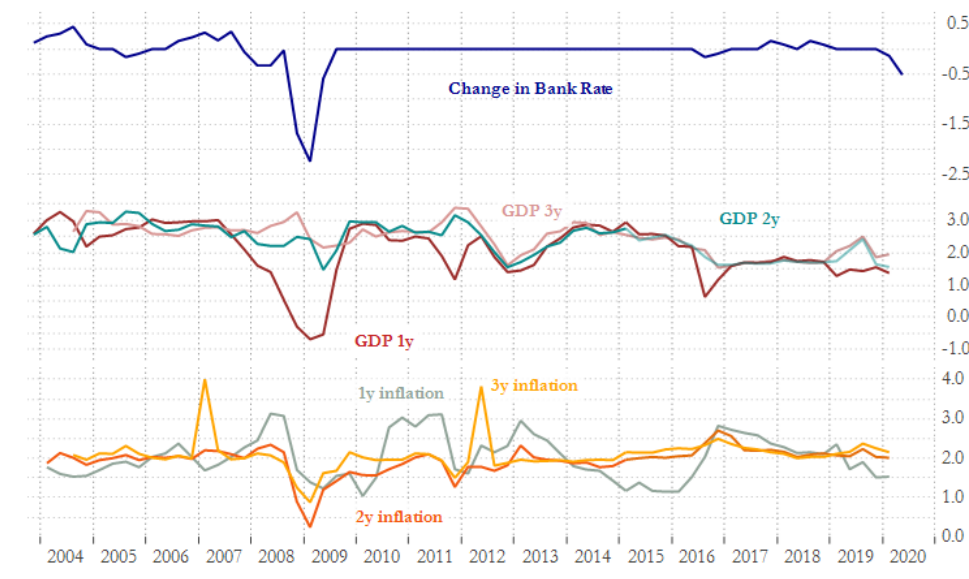
How did interest rate changes relate to the evolving views of the BoE? In the raw data, interest rate rises in 2004 followed an upgrade to 1y GDP growth outlook. A 2005 rate cut appeared not to be associated with much change to the growth

or inflation outlook. The 2007 rate hike was associated with a stronger inflation forecast, without much of a change in the growth outlook.

The great financial crisis and its aftermath dominate much of the period. The sharp interest rate cuts in 2008 and 2009 were associated with marked downgrades to the GDP growth outlook 1y and 2y ahead, as well as a weaker inflation outlook. A varied range of shocks are embodied in these forecast changes but they share the common feature of being a concise way of summarising a large amount of detail.

Since the Great Recession, policy went through a lengthy period of Bank Rate being unchanged; several incarnations of forward guidance were employed. Unconventional policy was an ongoing feature that we neglect in order to focus on changes in Bank Rate in this exercise. The lower bound to Bank Rate had been assumed to be 0.5% until the aftermath of the Brexit vote in June 2016 when the BoE implemented a rate cut alongside unconventional policy.

FIGURE 4. BoE fixed horizon GDP and Inflation forecasts



Source: BoE.

The BoE’s forecasts can be thought of as encapsulating all of the information available to the BoE at the time they were set. They are also conditional on money market rates at the same time - an important feature in communicating policy messages to financial markets discussed more below.

#### 4. ESTIMATING A FORECAST-TARGETING POLICY RULE

I eschew a Taylor rule in favour of a first difference rule that has been shown to be more robust to a range of structural changes in the economy. Crucially, the first difference rule is more robust to the key drift lower in neutral rates which has been such a key feature of the environment faced by central banks worldwide (Orphanides and Wieland, 2013).

**Results** Table 1 contains the key results. A simple inflation forecasting targeting rule (with no weight attached to GDP growth forecasts) finds some support for the 2y and 3y inflation forecast (and their deviations from the 2% CPI inflation target) playing a role in influencing policy (column 1). This estimated rule accounts for just over 50% of the variation in the policy rate. That still leaves a significant role for other factors beyond those captured by the inflation forecast. Adding forecast changes to that inflation forecast rule raises the R-squared somewhat further.

The BoE's interest rate policy also responds to its GDP growth forecasts. Without controlling separately for the inflation forecast, GDP growth forecasts (both level and forecast changes from the previous forecast) account for 69% of the variation in the policy rate.

An alternative specification, recommended by Orphanides (2003), is to consider deviations of forecast growth from the estimated rate of growth of potential output. Together with the inflation forecasts, in the most general specification, this accounts for 80% of the changes in policy. This goes a long way towards justifying the description of the BoE as a forecasting targeting central bank.

In the stripped-down specification (column 8), the policy rule estimates a coefficient on the 2y inflation forecast of 0.30 and a coefficient on 1y GDP growth at 0.35. One prominent version of the Orphanides rule considered for the Fed has coefficients on these two terms of 0.5.

#### 5. EXTRACTING A POLICY SIGNAL

**A macro perspective** If the BoE is effectively a forecast targeting central bank, as we suggest, then it makes the BoE's justification of its forecasts all the more important if it is to be successful in steering market rates. Without that forecast credibility markets might simply assume that whatever has been assumed this quarter could be easily reversed if the BoE needs to correct a forecast mistake. And if the central bank is to steer market rates, the process of basing interest rate changes on forecast changes cannot simply be a charade.

TABLE 1. Estimated policy rules for BoE forecast targeting

$\Delta$ Bank Rate	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
$E(\Pi_{t+1} - \Pi^*)$	[*]		[*]				[*]	
$E(\Pi_{t+2} - \Pi^*)$	***		***				[*]	***
$E(\Pi_{t+3} - \Pi^*)$	*		*				*	
$\Delta E(\Pi_{t+1})$			[*]				*	
$\Delta E(\Pi_{t+2})$			**				***	***
$\Delta E(\Pi_{t+2})$			[*]					
$E(y_{t+1})$		***		[*]			*	
$E(y_{t+2})$		***		***			***	
$E(y_{t+3})$		*		***				
$\Delta y_{t+1}$				[*]		*		**
$\Delta y_{t+2}$				[*]		[*]		***
$\Delta y_{t+3}$				**		[*]		
$E(y - y^*)_{t+1}$					[*]	[*]	***	
$E(y - y^*)_{t+2}$					***	***	*	***
$E(y - y^*)_{t+3}$					***	***	[*]	***
Durbin-Watson	0.83	1.61	1.05	1.63	1.59	1.61	1.71	1.73
R-squared	0.53	0.66	0.57	0.69	0.65	0.69	0.80	0.77
Obs.	64	64	64	64	64	64	64	64

Note: [\*] denotes included but insignificant; \* significant at 90%; \*\* significant at 95%; \*\*\* significant at 99% level.

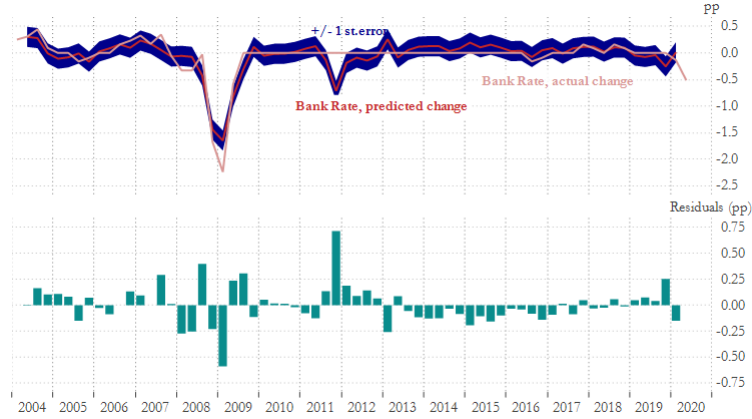
Note:  $E(\Pi_{t+i} - \Pi^*)$  is deviation of forecast inflation from target in year  $t+i$ ;  $E(y_{t+i})$  is forecast GDP growth in year  $t+i$ ;  $E(y - y^*)_{t+i}$  is deviation of forecast growth in year  $t+i$  from the rate of growth of potential output.

This all helps rationalise why the BoE devotes such time and effort to justify its outlook for policy via its forecasts. Being a forecast targeting central bank means credibility rests on the believability of the itself.

**A financial market perspective** The BoE’s forecasts are conditional on an assumed path for interest rates based on market pricing. This is a key part of central bank communication. For example, if taking everything into account, the BoE forecasts inflation in 2 years’ time to be above target and rising in a forecast that is conditional on market interest rates then it signals to markets that the money market curve implies policy that is a little ‘too easy’ over the next 2-3 years. The BoE would be encouraging a higher average policy rate path. This may or may not coincide with a policy rate change in that quarter, although empirically we find that there is a significant link.

If the BoE publishes a forecast with GDP growth around trend and inflation at target especially around the 2-year horizon when policy has its greatest effect on inflation, then the outlook would look ‘about right’. By implication, the existing money market path for rates (on which that forecast is conditioned) would also be ‘about right’. That could still coincide with a rate change if markets had priced in a rate change that quarter or very soon.

FIGURE 5. An Estimated First Difference Policy Rule



Source: Author’s calculations.

Svensson (2020) argues rightly that greater transparency obtains when forecasts are conditional on the policy-maker’s preferred path for policy rates and discusses how different forecasts would apply if a different policy rate path were assumed.

Two-way interactions are therefore a key part of communicating with financial markets and steering market interest rates. We shed some light on this point by assessing the links between swap rates and the estimated policy surprise from our policy rule in the final column of Table 1. Results indicate that policy surprises have a significant impact on the very short-end of the money market curve, although this weakens quite quickly along the money market curve.

The ‘t-ratio’ of changes in average swap rates on residuals from the policy forecast is 2.9 for 1y swap rates, indicating a significant link. This falls, however, to 2.4 for 2y and then -0.4 for 3y swap rates. For 5y swap rates the estimated ‘t-ratio’ is 0.9, as policy surprises lose their significance. Policy surprises appear to only have a significant link with 1-2y rates. As we showed in Figure 3, policy changes overall, including through the systematic component of policy affect rates out to 5years, reinforcing the need for a rule-based systematic component of policy.



## 6. POLICY IN THE TIME OF COVID-19

Do our pre-Covid results shed any light on the right response during a crisis? De Grauwe and Ji (2020) contend that the Covid-19 crisis is a time for central banks to eschew responding to forecasts about the future and instead focus exclusively on the present.

The view presented here is quite different. A crisis makes policy-making complex, above all about the risks of model misspecification and mismeasurement about the quickly-evolving state of the economy. These are conditions that require a **robust** policy, exactly as Orphanides and Wieland (2013) argue. Moreover, they find concretely that the first difference rule applied to forecasts about the economy in a range of different model specifications provides such a robust policy. Maintaining a large systematic component to how policy responds to the outlook will continue to be important. Setting policy solely about the present as De Grauwe and Ji (2020) suggest should be resisted.

## 7. CONCLUDING REMARKS

I present a view of the Bank of England and its interest rate policy as forecast targeting. Drawing on BoE published forecasts, estimates of a first difference policy rule generally support the view of the BoE implementing a rule-based/constrained discretion approach via forecast targeting.

The results see the ongoing policy challenge for the BoE (and other central banks) as being one of steering market interest rates to achieve its remit. Doing so as a forecast targeting central bank places a premium on the BoE convincing markets and the public of the veracity of its outlook for the economy, so that markets ‘buy-into’ its outlook. That outlook will inevitably evolve, and perhaps quickly, as shocks buffet the economy. A first difference rule for policy rate changes has emerged as a robust expression of how policy should, and largely does, change with the economic outlook.

For market participants, the results of this exercise motivate a need to mark to market the latest interpretation of macro data in a way that brings together (i) the policy rule (ii) the signal from the latest data about the updated outlook and (iii) broader communications signalling a departure from the rule when the central bank employs (constrained) discretion.

## REFERENCES

- De Grauwe, P and Ji, Y. (2020), ‘Central bankers should not be forward-looking in times of crisis’, Posting at VoxEU.org.
- King, M.A.(2000), ‘Monetary policy: Theory in practice’, speech given on January 7.
- Orphanides, A. and Wieland, V. (2013), ‘Complexity and monetary policy’, *International Journal of Central Banking*, 167-203.
- Svensson, L. (2020), ‘Monetary policy strategies for the Federal Reserve’, *International Journal of Central Banking*, 1-62.