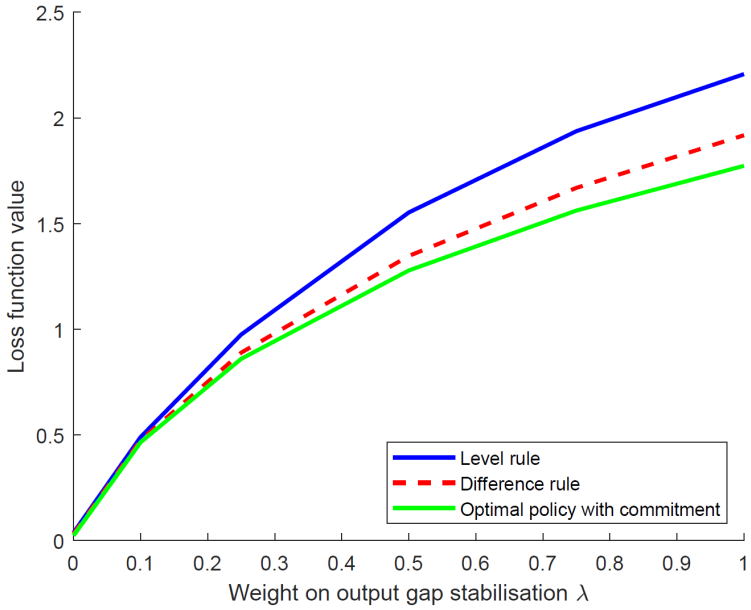
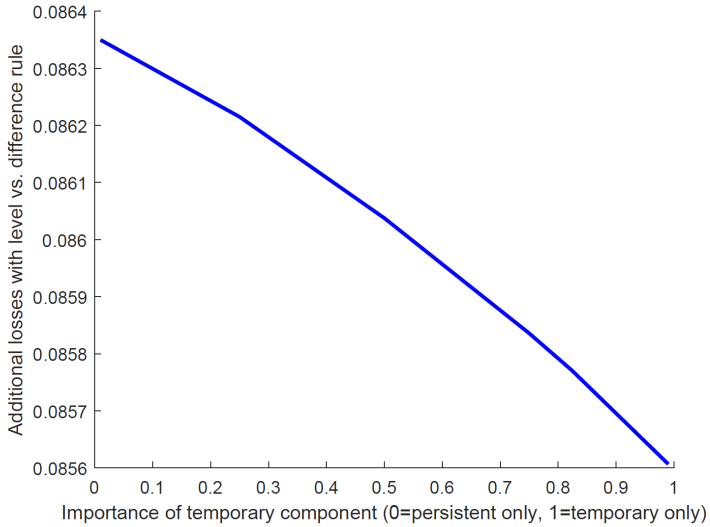
Annex: Charts

Chart 1: The social loss associated with different monetary policy rules under different calibrations of lambda



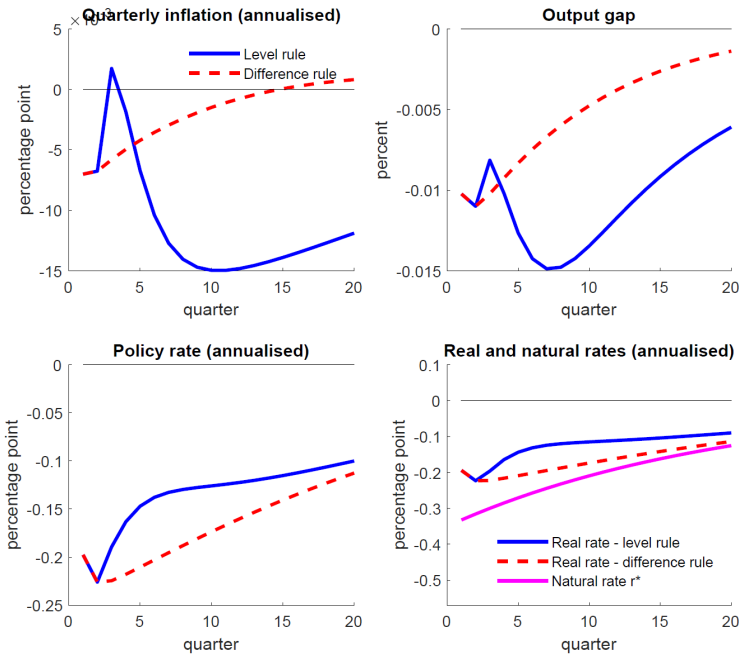
Source: Bank calculations

Chart 2: The relative performance of level-based and difference-based rules under different relative importance of persistent vs temporary shocks



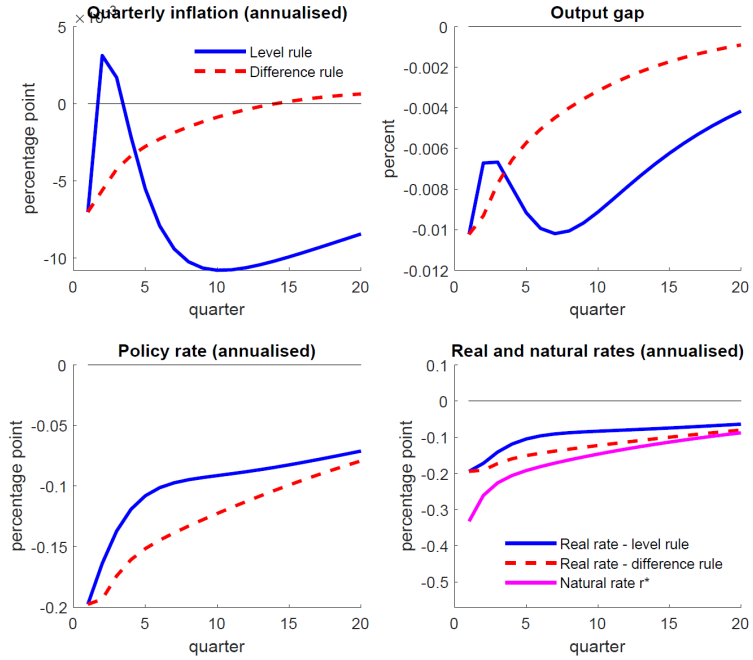
Source: Bank calculations

Chart 3: Impact of a persistent risk premium shock that is misjudged to be temporary



Source: Bank calculation

Chart 4: Impact of simultaneous persistent and temporary risk premium shocks (relative weight 2.3 times)



Source: Bank calculations

Annex: Model specification

BANK OF ENGLAND

This model is based on a variant of a model developed by Harrison, Seneca and Waldron. It consists of 5 basic equations.

IS curve:

$$\tilde{y}_t = A\tilde{y}_{t-1} + B\mathbb{E}_t\tilde{y}_{t+1} - C(i_t - \mathbb{E}_t\pi_{t+1} - r_t^*)$$

Phillips curve:

$$\pi_t = D\pi_{t-1} + F\mathbb{E}_t\pi_{t+1} + G[H(\tilde{y}_t + y_t^*) + J(\tilde{y}_{t-1} + y_{t-1}^*) - Kz_t] + u_t$$

Potential output y_t^*:

$$y_t^* = Lz_t + My_{t-1}^*$$

Natural rate r_t^*:

$$r_t^* = Ny_{t-1}^* + Qy_t^* + S\mathbb{E}_t y_{t+1}^* - v_t$$

where all capital letters denote functions of underlying parameters, $\tilde{y}_t$ is the output gap, and the risk premium v_t, the cost-push disturbance u_t and productivity z_t follow exogenous autoregressive processes.

The model is closed by either a level rule

$$i_t = \rho_i i_{t-1} + \varphi_\pi\pi_t + \varphi_y\tilde{y}_t$$

or a difference rule

$$\Delta i_t = \varphi_\pi\pi_t + \varphi_{\Delta y}(\tilde{y}_t - \tilde{y}_{t-1})$$