Macro

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Overview

The macro block follows the standard blueprint of Quarterly Projection Model (QPM), widely used by central banks for monetary policy analysis and forecast.

We present only the important deviations from the standard blueprint.

The macro block can be tailored to fit already existing macro models.

Aggregate demand

Output (GDP) decomposition

$$y_t = \bar{y}_t \cdot \hat{y}_t$$

Extra effect of lending conditions (price and non-price) on the output gap

$$\log \hat{y}_t = \ldots$$

$$- c_3 \, \hat{r}_t^{\Delta \text{full}}$$

$$+ \ldots$$

Aggregate supply

Possible **hysteresis** effect of the output gap on potential output

$$\Delta \log \bar{y}_t = c_0 \, \Delta \log \bar{y}_{t-1} + (1 - c_0) \, \log y_{\text{ss}}^{\text{roc}} + c_1 \, \log \hat{y}_t + \epsilon_{\bar{y},t}$$

Forward sum of discounted real income

Capture long-term expectations of real income (GDP), sensitive to lending conditions

$$y_t^{\text{fws}} = \left(1 - \frac{1}{c_0}\right) \left[y_t + \frac{1}{(c_0 + c_1\, \hat{r}_t^{\Delta\text{full}})\, y_{\text{ss}}^{\text{roc}}}\; y_{t+1} + \cdots \right]$$

Normalize for analytical convenience so that

$$y_{\text{ss}}^{\text{fws}} = y_{\text{ss}}$$

Exchange rate and country premium

Risk-adjusted interest parity

$$1 + rs_t^{\text{lcy}} = (1 + rs_t^{\text{fcy}}) \, \frac{e_{t+1}}{e_t} \, (1 + prem_t) \, \exp \epsilon_{e,t}$$

Country premium sensitive to lending conditions

$$prem_t = \overline{prem} \; + \; c_1 \, \hat{r}_t^{\Delta\text{full}} \; + \; \epsilon_{prem,t}$$