

1 Results

In this section, the Impulse Response Functions of each variable of the model is presented and their reaction to the monetary policy shock is discussed.

Figures (??) and (??) depict a 1% monetary policy shock, initiating a response in the economy by elevating the interest rate by the same percentage. The revised interest rate, also representing the price of capital rent, prompts households to reevaluate their consumption decisions. It becomes more advantageous to save now through investment and consume more in the future. This choice leads to an increase in investment and a decrease in demand.

However, despite the higher capital rent, both the supply of capital and the demand for increased production rise, prompting firms to decide to produce more. While firms now require more labor, households willingly supply more labor, seeking higher income for additional investments. As wages decrease, it is reasonable to assume that supply exceeds demand. Wages will rise, but less than the price of capital. As households demand more products for transformation into investments, production increases. Although capital rent is higher, lower wages lead to a decline in marginal costs.

Consumer and firm price levels initially rise and then fall as the effects of the monetary shock progress towards stabilizing the economy. In the new equilibrium, there is a decrease in nominal levels, indicating a successful monetary shock. Investment, capital, labor, and production are now at higher levels, while consumption is at a lower level, reflecting a positive outcome of the monetary policy shock. The outcome described can be synthesized in the flow on (1.2).

$$\begin{array}{cccc}
 1 & 2 & 3 & 4 \\
 1 & 2 & 3 & 4 \\
 1 & 2 & 3 & 4
 \end{array} \tag{1.1}$$

$$\begin{array}{llll}
 \hat{Z}_M \uparrow \implies \hat{R} \uparrow & \implies \hat{I}_\eta^D \uparrow \implies \hat{C}_\eta \downarrow & \implies & \\
 \hat{K}_\eta \downarrow \implies \hat{L}_\eta^S \uparrow > \hat{L}_\eta^D \uparrow & \implies \hat{W}_\eta \downarrow \implies & \implies & \\
 \hat{Y}_\eta \uparrow \implies \hat{\lambda}_\eta \downarrow & \implies \hat{Q}_\eta \uparrow \downarrow; \hat{P}_\eta \uparrow \downarrow & & (1.2)
 \end{array}$$

$$\begin{aligned}
\hat{Z}_M \uparrow &\implies \hat{R} \uparrow && \implies \hat{I}_\eta^D \uparrow \implies \hat{C}_\eta \downarrow \implies \\
\hat{K}_\eta \downarrow &\implies \hat{L}_\eta^S \uparrow > \hat{L}_\eta^D \uparrow && \implies \hat{W}_\eta \downarrow \implies \\
\hat{Y}_\eta \uparrow &\implies \hat{\lambda}_\eta \downarrow && \implies \hat{Q}_\eta \uparrow \downarrow; \hat{P}_\eta \uparrow \downarrow
\end{aligned} \tag{1.3}$$

From a regional perspective, variables indicate that the monetary policy shock will elicit diverse reactions across structurally distinct regions, aligning with the initial hypothesis. Observing Figures (??) and (??), it becomes evident that production growth in Region 1 surpasses that in Region 2. This difference can be attributed to the fact that Region 1 is more capital-intensive. As households opt for investment in the present and consumption in the future, the demand for production and subsequent supply of capital benefit firms in Region 1 more than in Region 2, which is more labor-intensive. This leads to a comparatively lower impact from changes in interest rates in Region 2, resulting in a less pronounced reaction in its production.