The impact of industrialized countries’ monetary policy on emerging economies

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Policy rates in Industrialized Countries

- Canada
- Euro Area
- Japan
- United Kingdom
- United States
- Average
QUESTION

What are the macroeconomic consequences of the lower interest rate policies for Emerging Countries? In particular,

- macroeconomic growth;

- macroeconomic stability.
CONVENTIONAL VIEW

- Lower interest rates in industrialized countries should attract inflows of capital (or reduce outflows) in emerging countries.

- Inflows of capital should reduce domestic interest rates and stimulate economic activity.
CONVENTIONAL VIEW

• Lower interest rates in industrialized countries should attract inflows of capital (or reduce outflows) in emerging countries.

• Inflows of capital should reduce domestic interest rates and stimulate economic activity.

• Is this consistent with the data?
Indeed, capital flows reverted toward emerging countries.
However, no signs of macroeconomic benefits
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Could low interest rates have negative effects?

- The conventional view is based on the idea that low interest rates reduce the cost of capital which encourages investments and economic activity.

- However, low interest rates also discourage savings, which is typically neglected by the conventional view.
1. I study the macroeconomic impact of lower interest rates using a small open economy model representative of emerging countries.

2. The model features uninsurable production risks that lead to precautionary savings.

3. Importantly, because of production risks, macroeconomic activity depends on the financial wealth held by producers.

4. The model also features occasional financial crises that allows me to study macroeconomic stability.
Summary of results

• Lower interest rates
  – reduce the financial wealth held by savers;
  – increase the leverage of borrowers.

• Lower financial wealth held by savers discourages production.

• Higher leverage of borrowers could increase macroeconomic instability.
Two-sector open economy model

1. Production sector (operated by entrepreneurs)

2. Household sector (suppliers of labor)
1. Production sector

- Continuum of entrepreneurs with utility $E_0 \sum_{t=0}^{\infty} \beta^t \ln(c^i_t)$

- Technology $F(z^i_t, h^i_t) = z^i_t h^i_t$

\[ h^i_t = \text{Input of labor} \]
\[ z^i_t = \text{Idiosyncratic shock observed after choosing } h^i_t. \ E z^i_t = \bar{z} \]

- Entrepreneurs hold ‘domestic’ bonds, $b^i_{t+1}$, and ‘foreign’ bonds, $f^i_{t+1}$. Domestic bonds are defaultable with repayment $\tilde{b}^i_{t+1} \leq b^i_{t+1}$.

\[ c^i_t + q^b_t b^i_{t+1} + q^f_t f^i_{t+1} = \tilde{b}^i_t + f^i_t + (z^i_t - w_t) h^i_t \equiv a^i_t \]
Optimal entrepreneur’s policy

\[ h_t^i = \phi(w_t)(\tilde{b}_t^i + f_t^i) \]

\[ c_t^i = (1 - \beta)a_t^i \]

\[ q_t^b b_{t+1}^i + q_t^f f_{t+1}^i = \beta a_t^i \]

Where \( \phi_t \) satisfies \( \mathbb{E}_z \left\{ \frac{z - w_t}{1 + (z - w_t)\phi_t} \right\} = 0. \)
Aggregate demand of labor

\[ H_t = \phi(w_t) \int_i (\tilde{b}_i^t + f_i^t) \]

Financial wealth
2. Household sector

- Continuum of households with utility $\mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t (c_t - Ah_t)$

- Households hold $k_t$ units of houses, available in fixed supply $\overline{K}$, each producing $\alpha$. In normal times houses are traded at price $p_t$.

- Households enter the period with defaultable debt $l_t$.

- With some probability $\lambda$, the recovery rate drops to $\xi < p_t$. 
LOW LEVERAGE (No default)

\[ l_t = \text{Liabilities;} \quad \text{Liquidation value} = \begin{cases} \xi k_t, \\ p_t k_t, \end{cases} \]
HIGH LEVERAGE (Possibility of default)

\[ l_t = \text{Liabilities}; \quad \text{Liquidation value} = \begin{cases} \xi_k t, \\ p_t k_t, \end{cases} \]
2. Household sector (continue)

- First order conditions for labor:

\[ w_t = A \]
2. Household sector (continue)

- First order conditions for labor: $w_t = A$
LABOR MARKET EQUILIBRIUM (Beginning-of-period)

\[ H_t = \begin{cases} \text{Labor supply} \\ w_t = A \end{cases} \]

\[ H_t^D = \phi(w_t)(B_t + F_t) \]
LABOR MARKET EQUILIBRIUM (Beginning-of-period)  
(With a financial crisis)

\[
H_t = A
\]

\[
D_t = \phi(w_t)(B_t + F_t)
\]
Consequences of lower interest rates in industrialized countries

- Producers (entrepreneurs) save less: $B_t + F_t$ drops implying lower production.

- Households borrows more: $B_t$ increases implying greater macroeconomic instability.

- Since $B_t + F_t$ drops while $B_t$ increases, $F_t$ must drops (lower outflows of capital).
Repeated simulations

**Foreign Interest Rate**

**Households' debt**

**Entrepreneur's wealth**

**Net foreign assets**

**Price of houses**

**Output**
CONCLUSION

• Lower interest rates in industrialized countries reverted the outflows of capital from emerging countries.

• However, this does not appear to have generated positive macroeconomic benefits for emerging countries.