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BANK-DEPENDENT HOUSEHOLDS AND THE UNEQUAL COSTS OF INFLATION

EUROPEAN CENTRAL BANK

EUROSYSTEM

Bank-Dependent Households and the Unequal Costs of Inflation

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Introduction

Study **welfare costs of inflation** from an understudied channel:

→ **Inflation impairs households' ability to save for unexpected events**

→ Unequally across the wealth distribution

Mechanism: higher inflation → lower real returns on assets → saving is more costly

Motivated by two observations in US data:

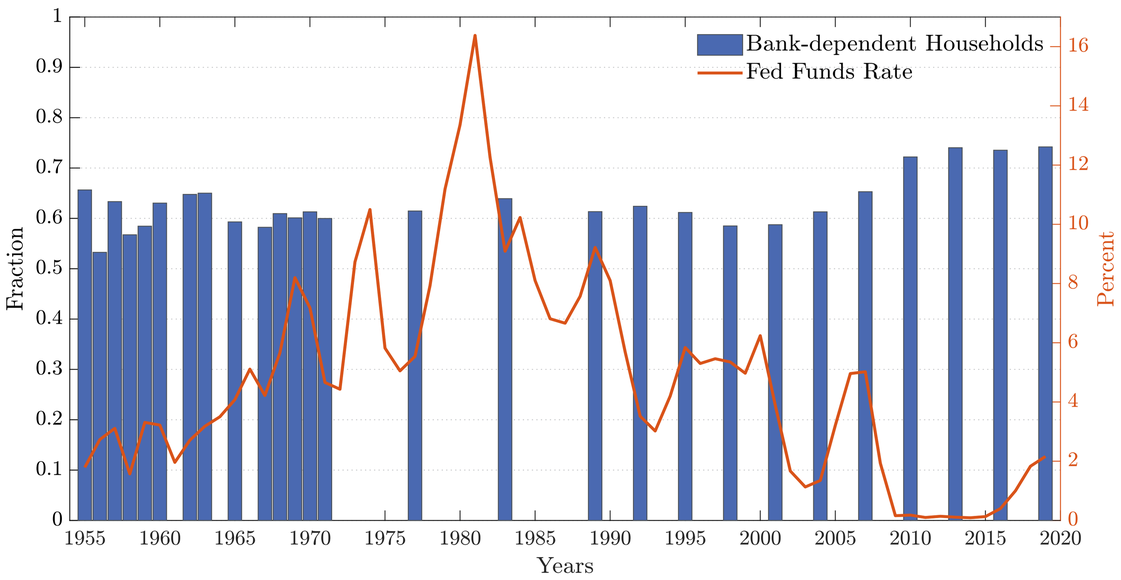
Households: 65% of U.S. households hold all their liquid assets in bank deposits

Deposit rates: banks keep deposit rates low during high inflation episodes

Paper: Evidence and model to quantify the cost of an increase in inflation

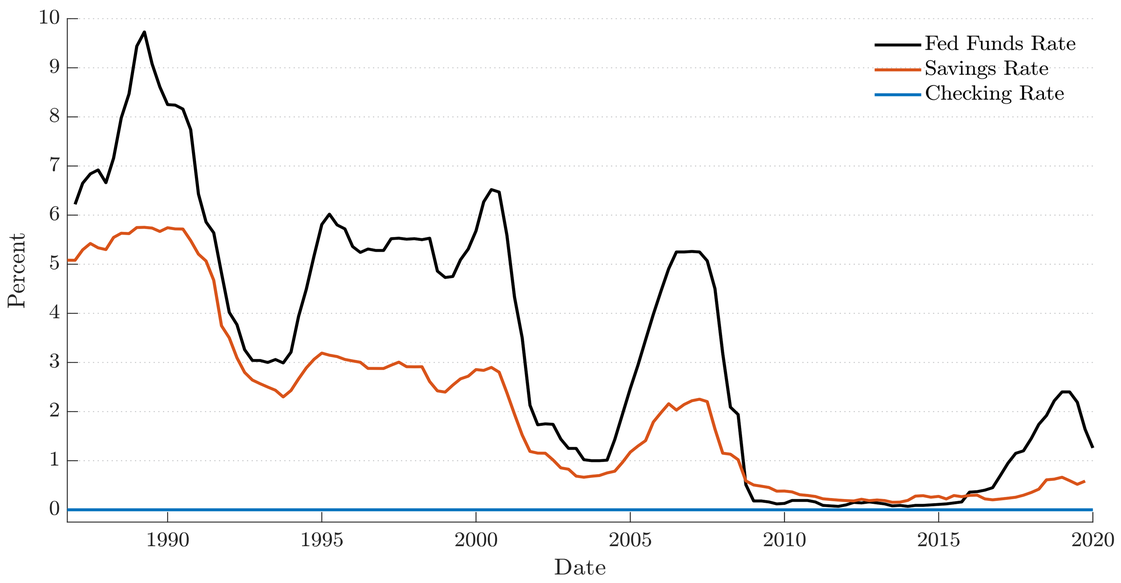
Bank-Dependent Households

- **Bank-Dependent households**: those with **all** their liquid assets in bank deposits
- High market rate/inflation episodes → Deposits are still the only liq. asset for most HH



Deposit Rates: Imperfect Passthrough

- Banks keep deposit rates low and insensitive to Central Bank rate movements!



Quantitative Model

Heterogeneous agents model ⟶ smooth income shocks using liquid safe assets

Two novel ingredients give households heterogeneous exposure to inflation:

1 - Portfolio choice: between multiple bank deposits and financial market assets

2 - Non-competitive banking: set deposit rates on multiple products

Rest of the model is kept standard: supply-side & government

Monopolistic Banks

- Each period, banks monopolize a small random sample of the population
- Set rates on two accounts: checking and savings. Invest funds in government bonds

$$\max_{\{r_{\mathcal{C}}, r_{\mathcal{S}}\}} \; \mathcal{C}\left(r_{\mathcal{C}}, r_{\mathcal{S}}\right) \cdot \left(r - r_{\mathcal{C}}\right) + \mathcal{S}\left(r_{\mathcal{C}}, r_{\mathcal{S}}\right) \cdot \left(r - r_{\mathcal{S}}\right)$$

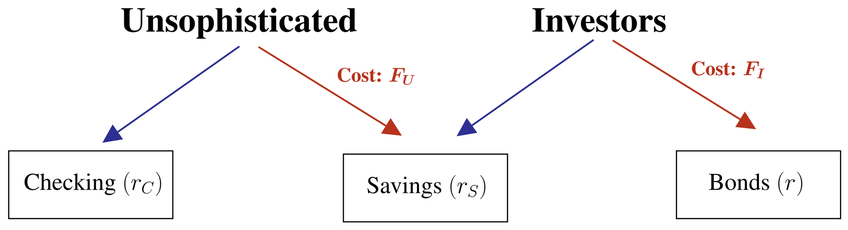
subject to,

$$i_{\mathcal{C}}, i_{\mathcal{S}} \geq 0 \quad \rightarrow \quad r_{\mathcal{C}}, r_{\mathcal{S}} \geq -\pi'$$

Households: Bewley with a Portfolio Choice

Assets: no role for transaction → all funds in the asset with highest return

Households of group $g = \{\text{U,I}\}$ periodically choose between a **low** and a **high** return asset



$$V\left(s, a, F_g\right) = \max_{\{\text{Low}_g, \text{High}_g\}} \left\{ v_L\left(s, a\right), \; v_H\left(s, a\right) - F_g \right\} \quad \text{where } F_g \overset{\text{iid}}{\sim} \text{Logistic}(\mathcal{F}_g, \sigma_F)$$

with,

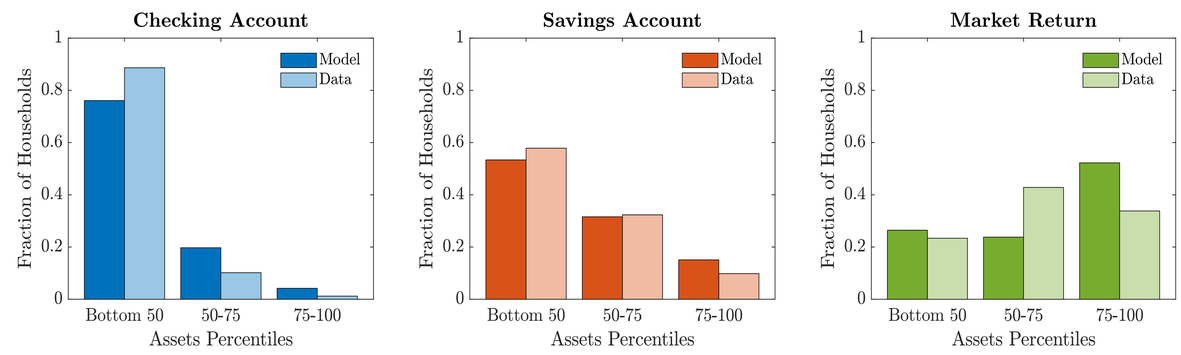
$$v_j\left(s, a\right) = \max_{c, a'} \; u\left(c\right) - \nu\left(n\right) + \beta \, \mathbb{E}_{F', s'} \left[V\left(s', a', F_g'\right) \right]$$

subject to,

$$c + \frac{a'}{(1 + r_j)} = a + (1 - \tau) \cdot w \cdot n \cdot s, \quad a' \geq 0$$

Model Reproduces Portfolio Allocation

Poor households' highest return is checking, mid-wealth is savings, and wealthy bond rate



Also Interest Rates Levels and Short-run Dynamics

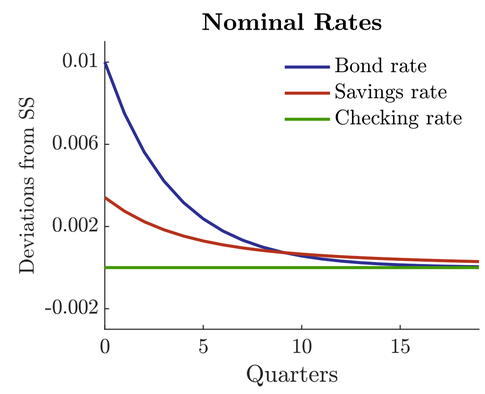
- Model is calibrated to steady state spreads

Key: **reproduces short-run dynamics**

- Imperfect passthrough to deposit rates

Banks' optimal response:

- Higher CB rate → larger markup!



Higher Inflation Target: Who bears the cost?

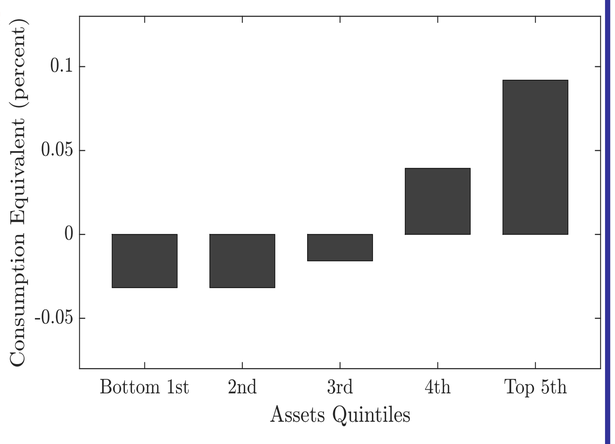
Inflation harms low- and mid-wealth HHs

Why? inflation lowers real return on assets

But on assets commonly held by the poor!

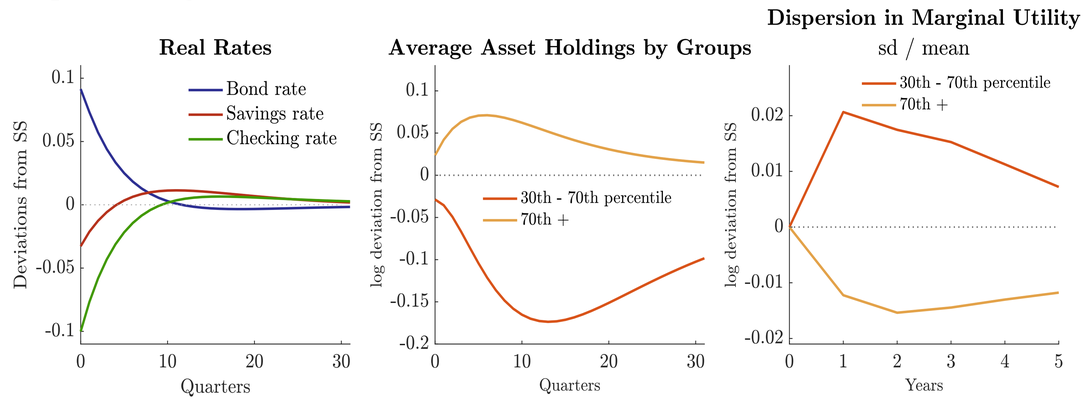
Compare: $\overline{\pi} = 3\% \rightarrow \overline{\pi} = 6\%$

	Benchmark	High-inflation
Bonds (r)	3%	3%
Savings dep. ($r_{\mathcal{S}}$)	0%	0.5%
Checking dep. ($r_{\mathcal{C}}$)	-3%	-6%



Inflation Surprises: Unequal Exposure

Unexpected surge in inflation:



- Banks partially passthrough bond rate increases to deposits → HH face lower real rates
- Strong incentives to lower savings → additional exposure to future income fluctuations
- Bondholders are isolated from inflation thanks to Central Bank's actions