Who Pays Attention to Euler?

Edmund Crawley

Interest Rates: For Whom is Inattention Costly?

Main Idea:

- Entirely rational for unconstrained households to ignore interest rates (second order)

- Constrained agents *cannot* ignore interest rates: they directly determine constraints

- Refincing decisions are not ignored: they are first order

Interest Rates: For Whom is Inattention Costly?

Main Idea:

- Entirely rational for unconstrained households to ignore interest rates (second order)
- Constrained agents *cannot* ignore interest rates: they directly determine constraints
- Refincing decisions are not ignored: they are first order

I examine a Two Agent New Keynesian model in which

- Unconstrained agents are inattentive
- Constrained agents are attentive
- Add refinancing a la Greenwald (2018)

Implications

Puzzles resolved:

- No Forward Guidance Puzzle
- Fed has control on long term real rates
- Hump shaped consumption response

Policy Implications:

- Monetary Policy acts through redistribution (and investment)
- Much closer relation to fiscal policy
- Need to think through all implications

Relation to Literature

- Wong (2016), Berger, Milbradt, Tourre, and Vavra (2018), Eichenbaum, Rebelo, and Wong (2018). Partial Equilibrium $\implies$ mortgages play an important role in monetary policy. Rely on long-term real rate changes.

- Greenwald (2018), Garriga, Kydland, and Šustek (2019). General equilibrium New Keynesian $\implies$ Mortgages do not play a role, long real rates don't move.

- Rational Inattention literature $\implies$ hump shape responses BUT no heterogeneity in inattention.

- Attention to refincing, Inattention to intertemporal substitution, can resolve these tensions in the literature.

Evidence for Consumption Intertemporal Substitution

- Macro: Complete failure of relation between real rates and consumption growth
- Micro: No convincing evidence households respond to interest rate incentives
- Sheer size of real interest rate movements: 30 year treasury down almost 2 percentage points since Nov 2018 $\implies$ I should increase consumption byover 10% today (all else equal)
- Evidence from asking financial advisors: when asked interest rates change their saving advice, they look at me like I'm crazy!
- Evidence from default pension saving - people really don't pay attention to this decision! **?**

4

Introduction · · · · Costs of Inattention · · · · Fwd Guidance · NK Model
oooo · · · · · · · · · · · · oooo · · · · · · · · · · · · o · · · · · · · · · ooo

Consider a two period model with consumer maximizing:

$$\log(C_1) + \log(C_2)$$

$R = 1$ and income $Y_1 = Y_2 = Y$. Solution is $C_1 = C_2 = Y$

Costs of Inattention: A Two-Period Example

Consider a two period model with consumer maximizing:

$$\log(C_1) + \log(C_2)$$

$R = 1$ and income $Y_1 = Y_2 = Y$. Solution is $C_1 = C_2 = Y$ Now R

is increased to $1 + r$. (Linearized) Solution is:

$$C_1 = (1 - \frac{r}{2})Y$$
$$C_2 = (1 + \frac{r}{2})Y$$

Costs of Inattention: A Two-Period Example

Consider a two period model with consumer maximizing:

$$\log(C_1) + \log(C_2)$$

$R = 1$ and income $Y_1 = Y_2 = Y$. Solution is $C_1 = C_2 = Y$ Now R

is increased to $1 + r$. (Linearized) Solution is:

$$C_1 = (1 - \frac{r}{2})Y$$
$$C_2 = (1 + \frac{r}{2})Y$$

Suppose you didn't pay attention and consumed $C_1 = C_2 = Y$ as

before. **Loss of utility would be second order.**

Costs of Inattention: An Example with Refinancing

- Now assume you start owing a debt of D in period 2, with an offsetting income of D in period 2.
- You have the option to refinance at a face value of D.
- Suppose debt is equal to income, $D = Y$

If R goes up, you will not refinance - problem is identical to the above:

$$C_1 = (1 - \frac{r}{2})Y$$
$$C_2 = (1 + \frac{r}{2})Y$$

However, if R goes down, you can refinance and only pay $(1 + r)D$ next period

$$C_1 = (1 - r)Y$$
$$C_2 = Y$$

If you didn't notice this, loss to utility would be **first order**.

Costs of Inattention: A Numerical Example

Model:

- 40 years of life
- Consumption and Income constant in baseline ($\beta = 1/R$)
- Consumer has a mortgage, face value one year of income, fixed installments for 20 years.
- Experiment: Shock real rate - exponentially decaying shock with half life 2.5 years (5 year rates moves 0.5x size of shock

Costs of Inattention: A Numerical Example

Model:

- 40 years of life
- Consumption and Income constant in baseline ($\beta = 1/R$)
- Consumer has a mortgage, face value one year of income, fixed installments for 20 years.
- Experiment: Shock real rate - exponentially decaying shock with half life 2.5 years (5 year rates moves 0.5x size of shock

What are the costs of in inattention to the interest rate shock with regards to:

- Intertemporal Substitution
- Mortgage Refinancing
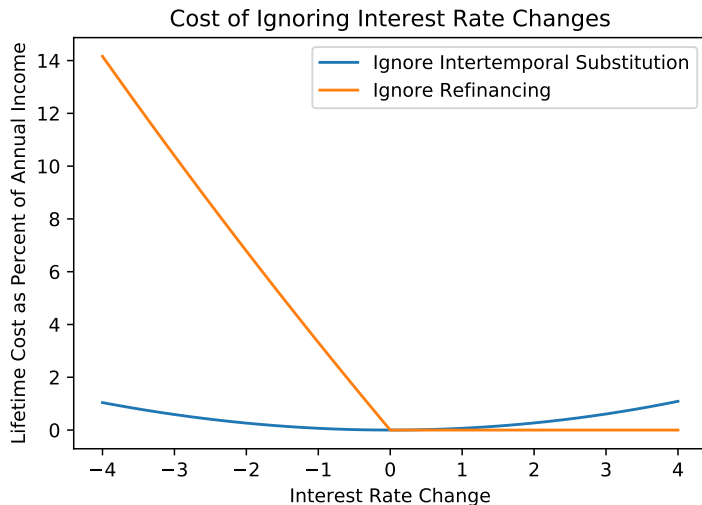
What is the effect of a shock to the short-term real rate 5 years in the future?

Forward Guidance

What is the effect of a shock to the short-term real rate 5 years in the future?

Intertemporal Substitution: Spending up for 5 years, then down thereafter. In general equilbrium $\implies$ positive output gap for 5 years $\implies$ huge inflation!
Effect is MUCH greater than a shock to the short-term rate today

Refinancing: Spending up today, but short-lived effect.
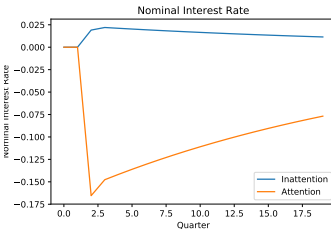Effect is similar size (or smaller) than a shock to the short-term rate today

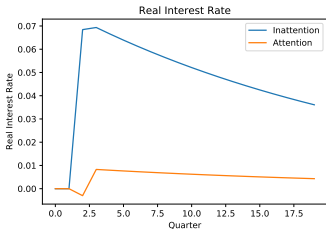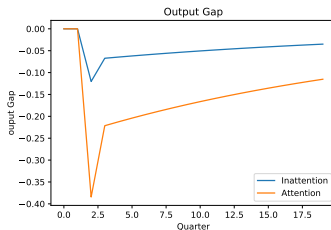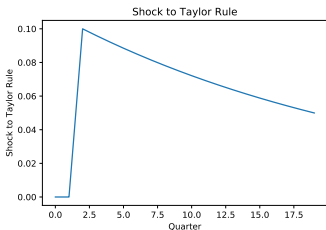# A Two-Agent NK model with Debt

Two agents:

1 Standard unconstrained, forward-looking agent

2 Hand-to-mouth agent, able to borrow, subject to borrowing constraint on income

Shock to Taylor Rule is VERY persistent

Implulse Respnse Functions

Implulse Respnse Functions