Deficits and Inflation: Beyond the FTPL

George-Marios Angeletos[1] Chen Lian[2] Christian Wolf[3]

[1]Northwestern and NBER

[2]UC Berkeley and NBER

[3]MIT and NBER

May 26, 2024

How do Deficits Affect Inflation?

1. **FTPL**
   - Initial, flexible-price-FTPL: Basetto, Sims, Leeper, Woodford
   - Recent, RANK-FTPL: Cochrane, Bianchi-Ilut, Bianchi-Faccini-Melosi, Smets-Wouters
   - RA/PIH households
2. **OLG-NK/HANK**
   - Breaking Ricardian Equiv. by finite lives/liq. constraints
   - Deficits $\Rightarrow$ AD $\Rightarrow$ Keynesian boom $\Rightarrow$ inflation

How do Deficits Affect Inflation?

1. **FTPL**
   - Initial, flexible-price-FTPL: Basetto, Sims, Leeper, Woodford
   - Recent, RANK-FTPL: Cochrane, Bianchi-Ilut, Bianchi-Faccini-Melosi, Smets-Wouters
   - RA/PIH households
2. **OLG-NK/HANK**
   - Breaking Ricardian Equiv. by finite lives/liq. constraints
   - Deficits $\Rightarrow$ AD $\Rightarrow$ Keynesian boom $\Rightarrow$ inflation

This paper: compare **RANK-FTPL** vs **OLG-NK/HANK**

- Mechanism differences: how deficits drive AD and inflation & how to break Ricardian Equiv.
- Prediction differences on inflation responses to deficits. OLG-NK/HANK has
  1. More **front-loaded** inflation responses
  2. **Lower cumulative** inflation responses
  3. Predictions **robust** to perturbations about far future and assumptions on policy
- Covid Applications

Outline

Households [Based on Angeletos-Lian-Wolf, 2024]

Continuum of **perpetual youth** consumers with survival rate ω [$\omega = 1$: RANK; $\omega < 1$: proxy for HANK]

$$\mathbb{E}_t \left[\sum_{k=0}^{\infty} (\beta \omega)^k \left[u(C_{i,t+k}) - v(L_{i,t+k}) \right] \right]$$

Invests in nominal government bond (+ actuarially fair mortality insurance). Budget in real terms:

$$A_{i,t+1} = \underbrace{\frac{R^{\text{realized}}_{t+1}}{\omega}}_{\text{mortality insurance}} \left(\underbrace{A_{i,t}}_{\text{real wealth}} + \underbrace{W_t L_{i,t} + E_{i,t}}_{\text{income } Y_{i,t}} - C_{i,t} - T_{i,t} + \text{Transfer to Newborns} \right)$$

- Transfer to newborns (constant) $\Longrightarrow$ in steady state, all cohorts have same C & $R^{ss} = 1/\beta$
- Tax and transfer

$$T_{i,t} = \underbrace{\tau_y Y_{i,t}}_{\text{distonary tax to labor and dividend income}} + \underbrace{\mathscr{T}_t}_{\text{lump sum tax/transfer}}$$

Aggregate Demand and Supply

- Log-linearization: a lower case captures log-deviations from steady state
  [with the exception of wealth/fiscal variables, e.g., $a_t = \frac{A_t - A^{ss}}{Y^{ss}}$, to accommodate $A^{ss} = D^{ss} = 0$]

- AD: optimal consumption + aggregation (σ is EIS and $\frac{D^{ss}}{Y^{ss}}$ is SS real wealth/debt to GDP ratio)

$$c_t = \underbrace{(1-\beta\omega)}_{\text{MPC}} \times \Bigg(\underbrace{a_t}_{\text{real wealth}} + \underbrace{\mathbb{E}_t \left[\sum_{k=0}^{\infty} (\beta\omega)^k (y_{t+k} - t_{t+k}) \right]}_{\text{post-tax income}} \Bigg) \tag{1}$$

$$-\beta \left(\sigma\omega - (1-\beta\omega) \frac{D^{ss}}{Y^{ss}} \right) \times \underbrace{\mathbb{E}_t \left[\sum_{k=0}^{\infty} (\beta\omega)^k r_{t+k} \right]}_{\text{expected real rates}},$$

  - $\omega < 1$: (i) elevated MPC; (ii) discounting future y & t, breaking Ricardian Equiv.

- AS (standard log-linearized NKPC):

$$\pi_t = \kappa y_t + \beta \mathbb{E}_t [\pi_{t+1}]$$

Asset Market and Government Budget details

- Riskless **nominal government bond** with maturity δ [pays \$1 at t, \$$\delta$ at $t+1$, \$$\delta^2$ at $t+2$]
- Let d_t denote real value of government debt. Its evolution [in logs]:

$$d_{t+1} = \underbrace{\frac{1}{\beta}(d_t - t_t) + \frac{D^{ss}}{Y^{ss}} r_t}_{\text{expected debt burden tomorrow}} - \underbrace{\frac{D^{ss}}{Y^{ss}}\left(\pi^{\delta}_{t+1} - \mathbb{E}_t\left[\pi^{\delta}_{t+1}\right]\right)}_{\text{debt erosion due to inflation surprise}} - \underbrace{\frac{D^{ss}}{Y^{ss}}\left(r^{\delta}_{t+1} - \mathbb{E}_t\left[r^{\delta}_{t+1}\right]\right)}_{\text{debt erosion due to real rate surprises}} \tag{2}$$

where

$$\pi^{\delta}_t \equiv \mathbb{E}_t\left[\sum_{k=0}^{\infty} (\beta\delta)^k \pi_{t+k}\right] \quad \text{and} \quad r^{\delta}_t \equiv \mathbb{E}_t\left[\sum_{k=0}^{\infty} (\beta\delta)^k r_{t+k}\right]$$

Monetary Policy

- **Today**: **constant expected real rates**

$$r_t = 0 \Longleftrightarrow i_t = \mathbb{E}_t [\pi_{t+1}]$$

  - Tractable benchmark, e.g. Barro & Bianchi; Woodford; Auclert-Rognlie-Straub

- **Extension** (Taylor-like): $\psi < 0$ ("accommodative MP") and $\psi > 0$ ("hawkish MP")

$$r_t = \psi \pi_t \Longleftrightarrow i_t = \mathbb{E}_t [\pi_{t+1}] + \psi \pi_t \tag{3}$$

Fiscal Policy

- **Fiscal Policy**: extension of Leeper (1991), common in literature

$$t_t = \underbrace{\tau_d(d_t + \varepsilon_t)}_{\text{fiscal adjustment}} + \underbrace{\tau_y y_t}_{\text{tax base adjustment}} - \underbrace{\varepsilon_t}_{\text{deficit shock}} \tag{4}$$

  - $\tau_d \in [0,1]$: fiscal adjustment (lump sum)
  - $\tau_y > 0$: adjustment in tax base (from distortionary income tax, natural in OLG-NK/HANK)
  - no G for simplicity

- Compare inflation responses
  - **RANK-FTPL**: $\omega = 1,\ \tau_y = 0,\ \tau_d \in [0, 1-\beta)$ (exogenous tax or active FP à la Leeper),
  - **OLG-NK/HANK**: $\omega < 1,\ \tau_y > 0,\ \tau_d \in [0,1]$

- Now: **mechanism differences** (RANK-FTPL vs OLG-NK/HANK)
  - How deficits drive AD and inflation & how to break Ricardian Equiv.

Outline

How do Deficits Drive Inflation

- Inflation uniquely pinned down by AD/output via NKPC

$$\pi_t = \kappa \sum_{k=0}^{\infty} \beta^k \mathbb{E}_t \left[y_{t+k} \right]$$

- How deficits drive inflation depends on how **deficits drive AD**

How do Deficits Drive Inflation? OLG-NK/HANK ($\omega < 1$) IKC leeper

Lemma

In OLG-NK with $\omega < 1$, $\tau_y > 0$, $\tau_d \in [0,1]$. There exists ***unique bounded eq'm.*** *[Extends ALW 24].*

- Deficit shock ε_t increases AD due to failure of Ricardian Equiv. from finite lives/liq. constraints
- IKC: market clearing ($c_t = y_t$ & $a_t = d_t$) & intertemporal gov budget & fixed real rates in AD (1)

$$y_t \uparrow \;=\; \underbrace{(1-\beta\omega)\sum_{k=0}^{\infty}\beta^k\left(1-\omega^k\right)\mathbb{E}_t\left[t_{t+k}\right]}_{\text{direct effect of fiscal policy } (\omega<1)\uparrow \text{ after deficit shock}\uparrow} + \underbrace{(1-\beta\omega)\sum_{k=0}^{\infty}(\beta\omega)^k\,\mathbb{E}_t\left[y_{t+k}\right]}_{\text{GE feedback}} \qquad (5)$$

- Deficit-driven increase in AD leads to inflation $\pi_t \uparrow$ via NKPC

How do Deficits Drive Inflation? RANK-FTPL ($\omega = 1$) passive fix nominal rates maturity

- To illustrate, one-period nominal bond $\delta = 0$ + unexpected deficit $\varepsilon_0 \uparrow$ at 0 + exogenous revenue
- A unique eq'm where debt erosion from **inflation surprises fully finances deficit shock**

$$\underbrace{B^{ss}}_{\text{nominal outstanding debt}} / (P_0 \uparrow) = \underbrace{-(\mathscr{E}_0 \uparrow)}_{\text{deficit shock}} + \underbrace{\sum_{k=0}^{+\infty} (R^{ss})^{-k} T^{ss}}_{\text{exogenous tax revenue}} \implies \pi_0 \uparrow = \frac{Y^{ss}}{D^{ss}} \varepsilon_0$$

- In NK, inflation comes from **output boom**, which is **persistent** from Euler

$$y_0 = \mathbb{E}_0 [y_t] = \cdots = \frac{(1-\beta)}{\kappa \frac{D^{ss}}{Y^{ss}}} \varepsilon_0$$

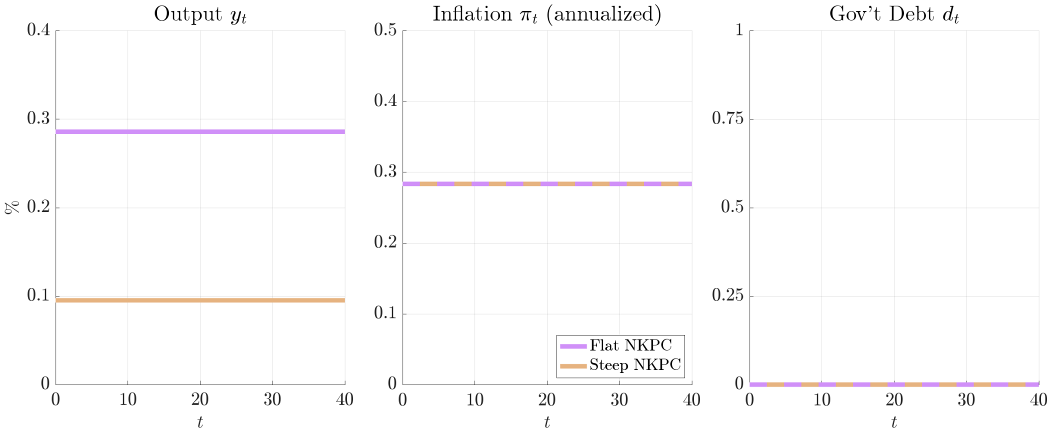
- From NKPC and because $y_0 = \mathbb{E}_0 [y_t]$ for all t, **inflation** is **persistent** too

$$\pi_0 = \mathbb{E}_0 [\pi_t] = \cdots = \frac{Y^{ss}}{D^{ss}} \varepsilon_0$$

- **Different from flexible-price FTPL**: initial price jump, no booms

How do Deficits Drive Inflation? RANK-FTPL ($\omega = 1$)

- RANK-FTPL: persistent responses independent of price stickiness



RANK-FTPL ($\omega = 1$): How do Deficits Affect AD?

- How do deficits drive AD and inflation in RANK-FTPL?
  - RA/PIH households, Ricardian Equiv. should hold à la Barro 74?

- Find the RANK-IKC ((5) when $\omega = 1$):

$$y_t = \underbrace{0}_{\text{direct effect of fiscal policy}} + \underbrace{(1-\beta)\sum_{k=0}^{\infty}\beta^k \mathbb{E}_t\left[y_{t+k}\right]}_{\text{GE feedback}} \qquad \left(\Leftrightarrow \; y_t = \mathbb{E}_t\left[y_{t+1}\right] \right) \tag{6}$$

  - **Fiscal policy/debt/deficits do not directly enter AD** à la Barro 74
  - But deficits lead to **boom**, sustained by **self-fulfilling GE feedback** ($y_0 = \mathbb{E}_0\left[y_t\right] = \cdots = y$)
    [related to multiplicity in NK when monetary policy is passive & fiscal policy is passive (no FTPL)]

Robustness: OLG-NK/HANK vs RANK-FTPL

How do deficits affect AD and inflation?

- OLG-NK/HANK: Breaking Ric. Equiv. by **finite lives/liq. constraints**
- RANK-FTPL: PIH households, break Ric. Equiv. through **self-fulfilling GE feedback**

Robustness: OLG-NK/HANK vs RANK-FTPL

How do deficits affect AD and inflation?

- OLG-NK/HANK: Breaking Ric. Equiv. by **finite lives/liq. constraints**
- RANK-FTPL: PIH households, break Ric. Equiv. through **self-fulfilling GE feedback**

OLG-NK/HANK robust to perturbations **about the far future** that stops the feedback

Proposition

Consider the case that y_t reverts to steady state $y_t = 0$ for $t \geq H$.

[$t \geq H$: fiscal policy switches to $t_t = d_t$ (lump sum tax returns d_t to SS) & monetary policy switches to Taylor principle]

[$t < H$: fiscal policy & monetary policy follow the same rules as above]

1. *When $\omega = 1$ (RANK): for any $t \geq 0$, $y_t = \pi_t = 0$.*
2. *When $\omega < 1$ (OLG-NK/HANK): for any $t \geq 0$, as $H \to \infty$, y_t, π_t* ***converges to their value in the eq'm above.***

- RANK-FTPL **not continuous** with perturbation about the far future that stops the feedback
  - Directly from the Euler Equation $y_t = \cdots = \mathbb{E}_t[y_H] = 0$

Taking Stock: Mechanism Differences

Next: compare differences in **predictions** on inflation responses to the deficit shock ε_0

In OLG-NK/HANK,

1. Inflation responses are more **front-loaded**
2. Cumulative inflation responses are **dampened**
3. Robustness w.r.t. policy: **continuity** w.r.t. monetary and fiscal policy parameters

Outline

OLG-NK ($\omega < 1$): Front-loaded Inflation Responses

Proposition

Let $\omega < 1$, $\tau_y > 0$, and $\psi = 0$. Define the ***front-loadedness*** *of the inflation response as:*

$$\pi^{\dagger} \equiv \frac{\pi_{\varepsilon,0}}{\sum_{k=0}^{\infty} \beta^k \pi_{\varepsilon,k}}, \tag{7}$$

where $\pi_{\varepsilon,k} \equiv \frac{d\pi_k}{d\varepsilon_0}$ $(k \geq 0)$ captures the response of π_k to the deficit shock.

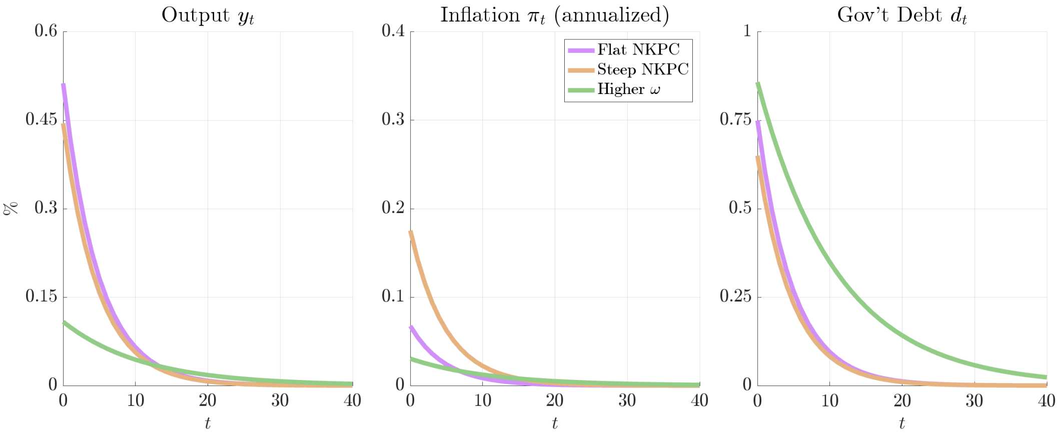
- *Inflation response is* ***more front-loaded*** *(higher $\pi^{\dagger}$), the larger the departure from RA (smaller ω).*
- *$\pi^{\dagger}$ is* ***bounded below*** *by its FTPL analogue,*

$$\pi^{\dagger} > \pi^{FTPL,\dagger} = 1 - \beta$$

with $\lim_{\omega \to 1} \pi^{\dagger} = \pi^{FTPL,\dagger}$.

OLG-NK ($\omega < 1$): Front-loaded Inflation Responses

- OLG-NK/HANK: front-loaded responses from front-loaded iMPCs



OLG-NK ($\omega < 1$): Lower Cumulative Inflation Responses

Proposition

Let $\omega < 1$, $\tau_y > 0$, and $\psi = 0$. The debt-erosion relevant, maturity-discounted, ***cumulative inflation response*** *to deficits $NPV_\pi^\delta \equiv \frac{d\pi_0^\delta}{d\varepsilon_0}$ satisfies:* [$\pi_0^\delta \equiv \sum_{k=0}^{\infty} (\beta\delta)^k \pi_t$]

- *NPV_π^δ, is* ***bounded above by its FTPL analogue****:*

$$NPV_\pi^\delta < NPV_\pi^{\delta,FTPL} = \frac{Y^{ss}}{D^{ss}},$$

  where the distance between the two vanishes only when $\kappa \to \infty$ or $(\tau_d, \tau_y) \to 0$

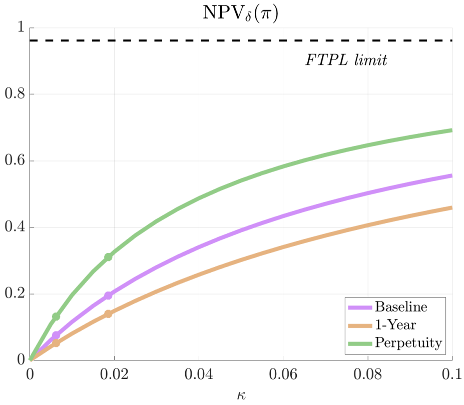
- *NPV_π^δ* ***decreases in price rigidity*** *(increase in NKPC slope κ)*
- *NPV_π^δ* ***decreases in the strength of alternatives to finance deficits*** *(decreases in τ_d, τ_y)*

Results reflect split between three sources of financing in OLG-NK/HANK

- Debt erosion through inflation surprises; fiscal adjustment τ_d; tax base adjustment τ_y

OLG-NK ($\omega < 1$): Lower Cumulative Inflation Responses

- In practice, cumulative inflation responses in OLG-NK/HANK are **dampened** because
  - **Flat** NKPC (flat NKPC $\kappa \leq 0.1$)
  - Existence of **alternative sources of financing** ($\tau_y \approx 0.3$)

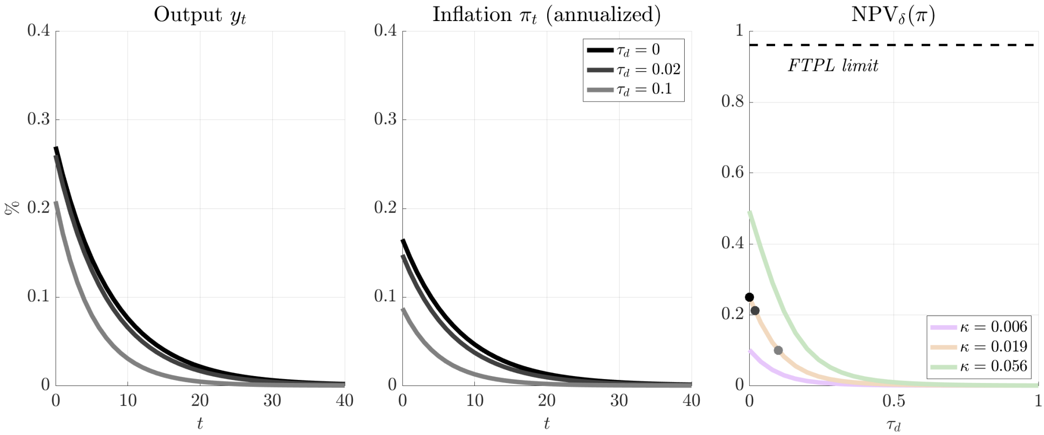


OLG-NK/HANK: Continuity w.r.t. Monetary & Fiscal Policy Parameters

OLG-NK/HANK less sensitive to hard-to-test assumptions about FP & MP

- OLG-NK/HANK **continuous around** $\tau_d = 1 - \beta$ (active vs passive FP à la Leeper)
- RANK-FTPL requires $\tau_d < 1 - \beta$ (active FP)
- Similarly, OLG-NK/HANK continuous around $\psi = 1$ (active vs passive MP à la Leeper)
- RANK-FTPL requires $\psi \leq 1$ (passive MP)

OLG-NK/HANK: Continuous around $\tau_d = 1 - \beta$ (Active vs Passive FP)



OLG-NK/HANK: Continuity w.r.t. Monetary & Fiscal Policy Parameters

OLG-NK/HANK less sensitive to hard-to-test assumptions about FP & MP

- OLG-NK/HANK continuous around $\tau_d = 1 - \beta$ (active vs passive FP à la Leeper)
- RANK-FTPL requires $\tau_d < 1 - \beta$ (active FP)
- Similarly, OLG-NK/HANK **continuous around $\psi = 0$** (active vs passive MP à la Leeper)
- RANK-FTPL requires $\psi \leq 0$ (passive MP)

Extensions active

Results on dampening, front-loading, and robustness remain true with

- Active monetary policy
- Hybrid NKPC
- Supply side effects of tax distortions
- Heterogeneity in MPCs, wealth, incidence of debt erosion

Outline

Model & Calibration Strategy parameter

- **Consumers:** three types of households with heterogenous survival probabilities
  - Match evidence on iMPCs [Auclert-Rognlie-Straub; Fagereng-Holm-Natvik]
  - Wealth shares matching the skewness of the U.S. wealth distribution, capturing heterogeneous incidence of debt erosion
  - Transfer receipts more concentrated at the bottom
  - Full-blown HANK soon

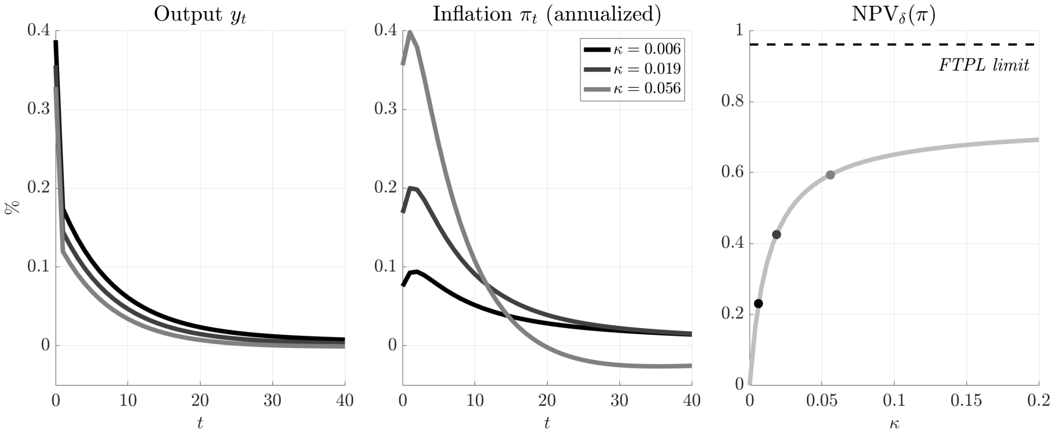
- **Nominal rigidities:** Hybrid NKPC
  - slope $\kappa = \{0.006, 0.019, 0.056\}$ & backward-lookingness $\xi = 0.29$

$$\pi_t = \kappa y_t + \xi \beta \pi_{t-1} + (1-\xi)\beta \mathbb{E}_t[\pi_{t+1}] \tag{8}$$

[Hazell et al. (22); Cerrato and Gitti (22); Barnichon and Mesters (20)]

- **Policy:**
  - Fiscal: $\tau_y = 0.33$ (avg labor tax); $\tau_d = 0$ (legislation of Covid stimulus)
  - Monetary: fixed real rates

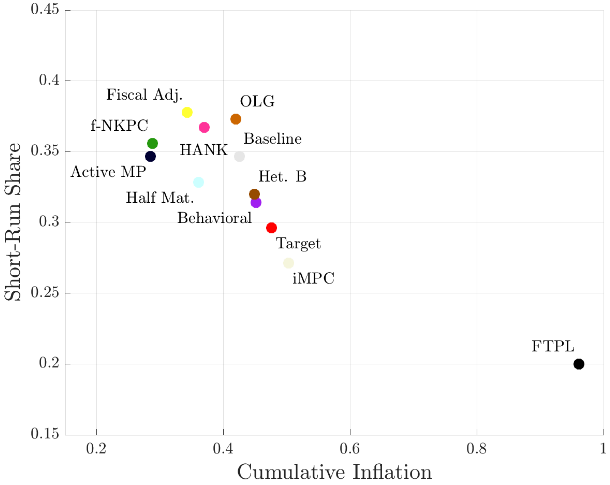
Benchmark: Front-loading and Dampening



Model Comparison

- **Consumers:**
  - No heterogeneity in bond holdings and dividend receipts (“iMPC”)
  - Heterogeneity only in bond holdings (“Het. B”)
  - Heterogeneity only in transfer receipts (“Target”)
  - Sticky information (“Behavioral”)
  - Full-blown one-asset HANK (“HANK”)
- **Nominal rigidities:**
  - Simple textbook forward-looking one (“f-NKPC”).
- **Policy:**
  - Active monetary policy (“Active MP”)
  - With gradual fiscal adjustment (“Fiscal Adjustment”).
  - Government debt maturity is halved (“Half Mat.”).

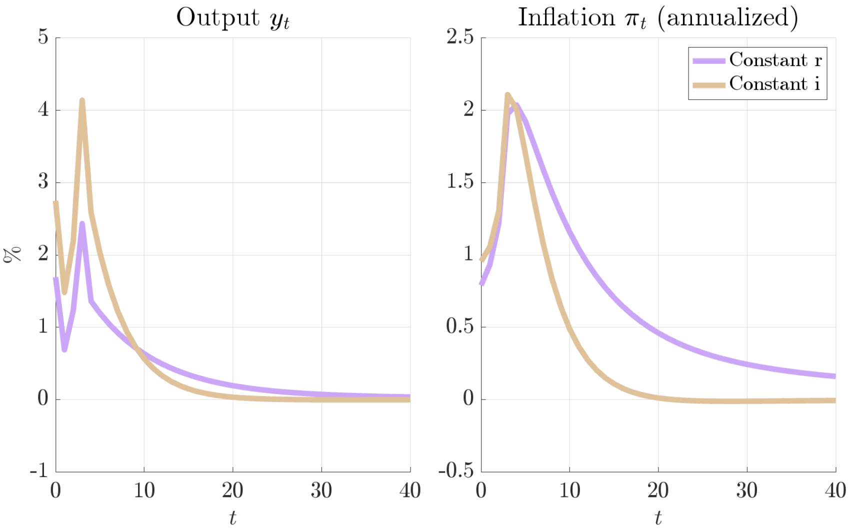
Model Comparison



Post-covid Inflation Dynamics

- Consider deficit shocks proximate **three rounds of stimulus checks**
- Constant r (to isolate causal effect of deficits) or constant i (useful alternative)
- Cumulative contribution to inflation: FTPL $=$ 11% vs OLG-NK/HANK $=$ 4%
  - but OLG-NK/HANK generates significant front-loaded π responses

Post-covid Inflation Dynamics (Unanticipated Stimuli) foresight



Outline

Conclusion

- OLG-NK/HANK: an alternative to RANK-FTPL to understand deficits $\implies$ inflation
- The mechanisms of deficits $\implies$ inflation are different
- The mapping from deficits $\implies$ inflation are different. OLG-NK/HANK
  - More **front-loaded** inflation responses
  - **Lower cumulative** inflation responses
  - Predictions **robust** to perturbations about far future and assumptions on policy
- **Post-covid application:** significant front-loaded π responses, but $\approx$1/3 of FTPL in $\text{NPV}_{\pi}^{\delta}$

Asset Market and Government Budget main

- **Nominal government bond** with maturity δ [pays \$1 at t, \$$\delta$ at $t+1$, \$$\delta^2$ at $t+2$]

- Let $D_t = \frac{B_t}{P_t}$ denote its real value, Q_t denote its nominal unit price, J_{ss} denote # of bond outstanding

$$D_0 = \frac{Q_0}{P_0} J_{ss}$$

- Log-linearize

$$d_0 = \underbrace{-\frac{D^{ss}}{Y^{ss}} \pi_0}_{\text{debt erosion due to inflation surprise}} + \underbrace{\beta\delta \frac{D^{ss}}{Y^{ss}} q_0}_{\text{debt erosion due to bond price surprise}} \tag{9}$$

where

$$q_0 = -\sum_{k=0}^{\infty} (\beta\delta)^k \pi_{k+1}. \tag{10}$$

RANK-FTPL ($\omega = 1$): Fix Nominal Rates main

- Consider the case with fixed nominal rates $i_t = 0$ & static PC $\pi_t = \kappa y_t$ & one-period bond $\delta = 0$

$$r_{t+1} = -\pi_{t+1} = -\kappa y_{t+1}$$

- From Euler Equation:

$$y_t = -\sigma r_{t+1} + y_{t+1} \iff y_k = \left(\frac{1}{\sigma\kappa + 1}\right)^k y_0$$

- Unique FTPL eq'm, initial inflation surprise fully finances the deficit $\frac{D^{ss}}{Y^{ss}}\pi_0 = \varepsilon_0$

$$y_k = \frac{1}{\kappa}\left(\frac{1}{\sigma\kappa + 1}\right)^k \frac{Y^{ss}}{D^{ss}}\varepsilon_0 \quad \text{and} \quad \pi_k = \left(\frac{1}{\sigma\kappa + 1}\right)^k \frac{Y^{ss}}{D^{ss}}\varepsilon_0.$$

RANK-FTPL ($\omega = 1$): Maturity $\delta > 0$ main

- A unique eq'm where debt erosion from **inflation surprises fully finances deficit shock**

$$\pi_0^\delta = \frac{Y^{ss}}{D^{ss}} \varepsilon_0$$

- In NK, inflation comes from **output boom**, which is **persistent** from Euler

$$y_0 = \mathbb{E}_0 [y_t] = \cdots = \frac{(1-\beta)(1-\beta\delta)}{\kappa \frac{D^{ss}}{Y^{ss}}} \varepsilon_t$$

- From NKPC and because $y_0 = \mathbb{E}_0 [y_t]$ for all t, **inflation** is **persistent** too

$$\pi_0 = \mathbb{E}_0 [\pi_t] = \cdots = (1-\beta\delta) \frac{Y^{ss}}{D^{ss}} \varepsilon_t$$

IKC Derivation main

- Impose $r_t = 0$ and market clearing ($c_t = y_t$ & $a_t = d_t$)

$$y_t = \underbrace{(1-\beta\omega)}_{\text{MPC}} \times \left(\underbrace{d_t}_{\text{real wealth}} + \underbrace{\sum_{k=0}^{\infty} (\beta\omega)^k (y_{t+k} - t_{t+k})}_{\text{post-tax income}} \right) \tag{11}$$

- Together with intertemporal gov budget ($r_t = 0$)

$$d_t = \sum_{k=0}^{\infty} \beta^k t_{t+k}.$$

- We arrive at IKC (5)

$$y_t = \underbrace{(1-\beta\omega) \sum_{k=0}^{\infty} \beta^k \left(1-\omega^k\right) t_{t+k}}_{\text{PE effect of fiscal policy}} + \underbrace{(1-\beta\omega) \sum_{k=0}^{\infty} (\beta\omega)^k y_{t+k}}_{\text{GE feedback}}$$

RANK: Equilibrium Characterization main

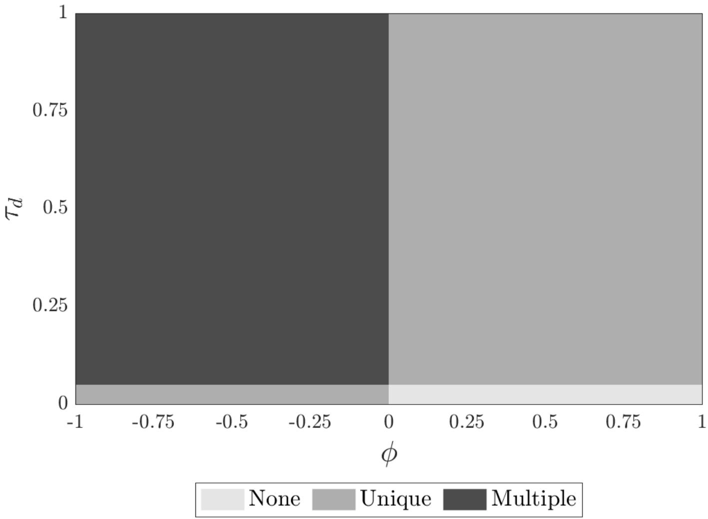
Proposition

Suppose $\omega = 1$ *(RANK),* $\psi = 0$ *(fixed rates), and* $\tau_y = 0$.

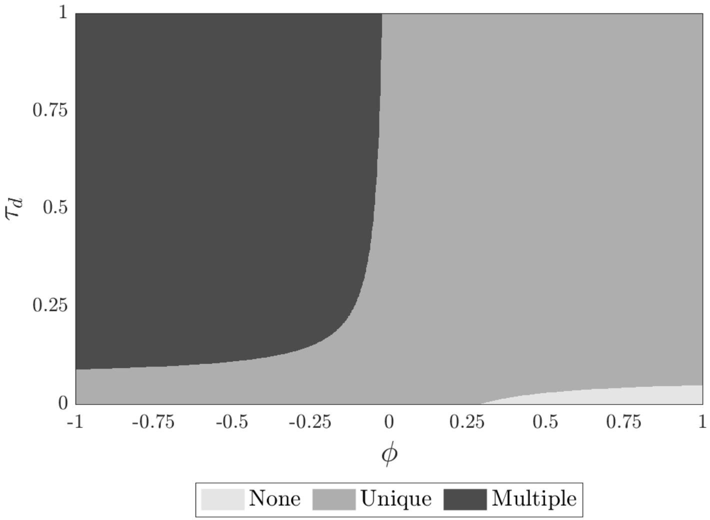
1. $\tau_d > 1 - \beta$ *(**passive FP** à la Leeper)* $\Rightarrow$ *continuum of eq'm= set of solutions to IKC* (6)
2. $\tau_d < 1 - \beta$ *(**FTPL**/active FP a la Leeper)* $\Rightarrow$ *unique eq'm = only solution to IKC* (6) *where inflation from the boom exactly offsets the deficit shock.*

$$\frac{D^{ss}}{Y^{ss}} \pi_0^{\delta} = \varepsilon_0,$$

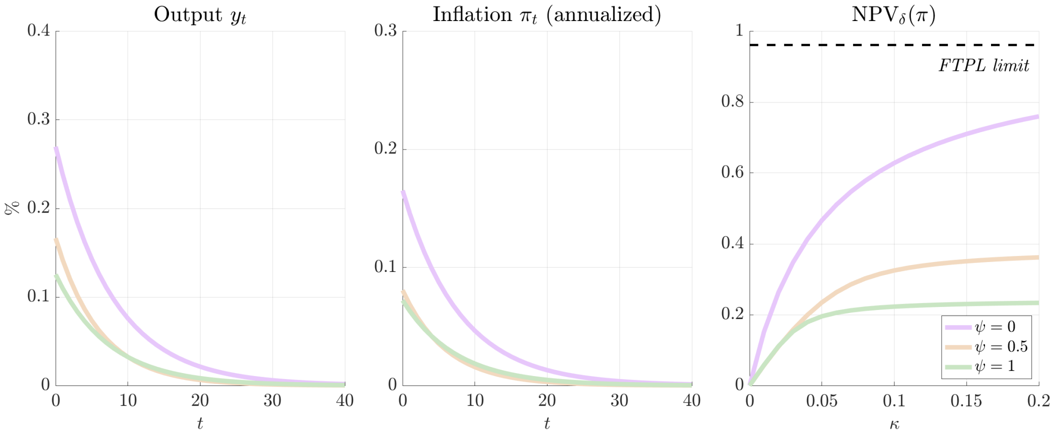
Leeper Regions $r_{t+1} = \phi y_t$ main



Leeper Regions $r_{t+1} = \phi y_t$ main



Active Monetary Policy $r_{t+1} = \psi y_t$ main



Calibration Parameters main

Parameter	**Description**	**Value**	**Target**
Demand Block			
χ_i	Population shares	$\{0.218, 0.629, 0.153\}$	Fagereng et al.
ω_i	Survival rates	$\{0.972, 0.833, 0\}$	Fagereng et al.
D_i^{SS}	Wealth shares	$\{0.6, 0.4, 0\} \times D^{SS}$	See text
ε_i	Transfer receipt	$\{0.122, 0.706, 0.172\} \times \varepsilon$	See text
σ	EIS	1	Standard
β	Discount factor	0.998	Annual real rate
Supply Block			
κ	Slope of Hybrid NKPC	$\{0.006, 0.019, 0.056\}$	Hazell et al.; Cerrato and Gitti
ξ	Backward-lookingness	0.288	Barnichon and Mesters
Policy			
τ_y	Tax rate	0.33	Average Labor Tax
D^{ss}/Y^{ss}	Gov't debt level	1.04	Liq. wealth holdings
δ	Gov't debt maturity	0.95	Av'g debt maturity
τ_d	Tax feedback	0	Anderson and Leeper

Table: Quantitative model calibration

Post-covid Inflation Dynamics (Perfect Foresight) main