Printing Away the Mortgages: Fiscal Inflation and the Post-Covid Housing Boom

William Diamond **Tim Landvoigt** **Germán Sánchez**

Discussion by

Cameron LaPoint

Yale SOM

SFS Cavalcade North America

University of Texas at Austin

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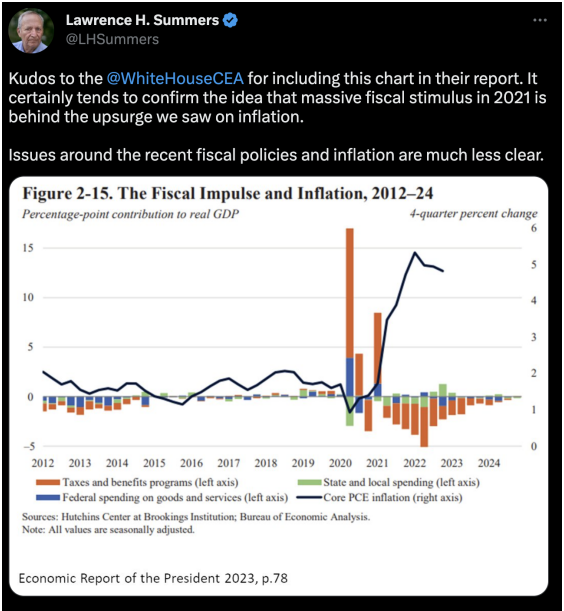
This paper: new results on fiscal × monetary policy

- **Question:** did the combo of active fiscal (AF) + passive monetary policy (PM) generate a post-COVID housing boom?
- **Method:** simulate COVID bust-boom (2020-22) via state-of-the-art HANK model
  - Intermediary sector: bank supplies deposits, invests in reserves + mortgages
  - Rich HH balance sheet structure (mortgages, default, idiosyncratic shocks)
  - Lump-sum transfers + temporary departure from Taylor rule (PM)
- **Two main results:**
  1. Transfers + AF/PM $\implies$ short-term housing boom and much faster recovery
  2. **General principle:** issuing govt. debt to dig ourselves out of acute consumption crisis without future tax ↑ will generate inflation
- My comments: are the model's mechanisms specific to COVID-era **housing market?**

Timely paper given finger pointing over inflation



Timely paper given finger pointing over inflation

Skeleton of models in the paper

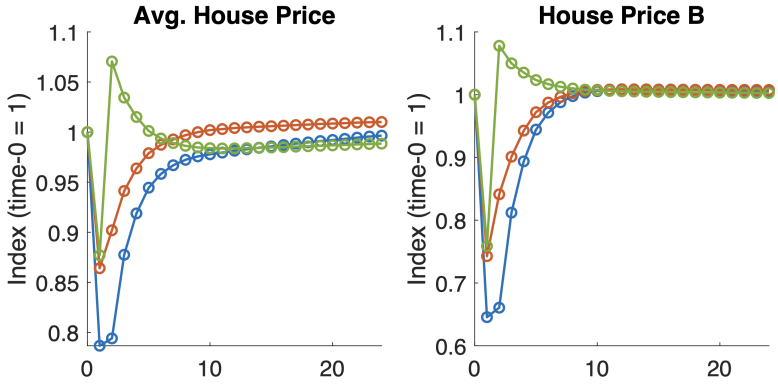
1. Toy model with flexible prices to fix ideas
   - "Fiscal Theory of the Price Level meets Monetarism"
   - Equilibria indexed by ratio of steady state tax revenues to govt. debt supply

2. **Add in nominal rigidities** ($\implies$ unemployment) + fiscal stimulus
   - MPC heterogeneity channel: stimulus effective if redistribute towards "borrowers"
   - Show direction of IRFs as economy moves from DNWR regime to flexible prices

3. **Fully-fledged HANK model** calibrated to HH balance sheet data (SCF)
   - Borrowers face idiosyncratic income risk and losses if they default
   - Defaults result from distress rather than strategic behavior (Ganong & Noel 2022)
   - Technical contribution: liquidity-in-advance constraint

- Note on exposition: models don't fully nest each other – do we need all three?

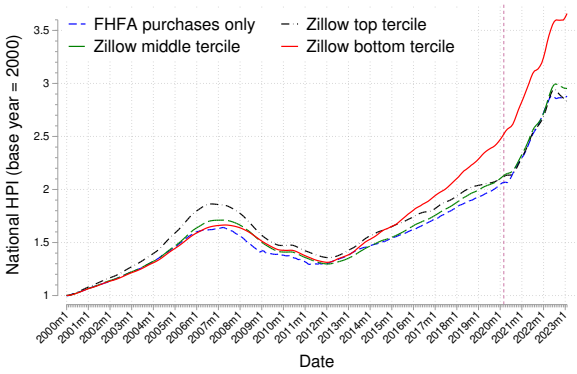
Comment #1: persistence of post-COVID housing boom



- When authors first wrote the paper (Dec. 2021), counterfactual results were forecasting behavior of housing markets at the end of COVID!
- But, now we know that housing markets have still not fully cooled off

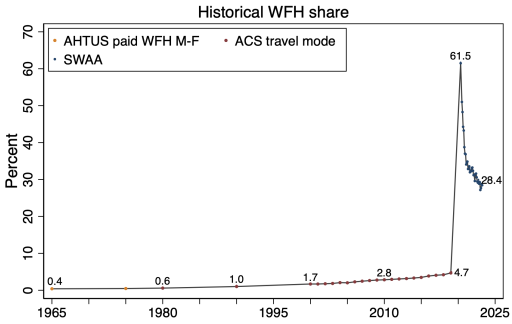
Post-COVID house prices: model vs. data

- **Model:** prices revert to trend after about 8 quarters
- **Data:** price growth moderating in many places, but not back to trend
  - Depends on market segment: "borrower" (low/mid tier) vs. "saver" (high tier) segments
- Small point: with housing in utility function, we should compare model HP to an "ideal" index like a Fisher index
  - Price comes from optimization problem rather than through exogenous market conditions



Elephant in the room: WFH shocks

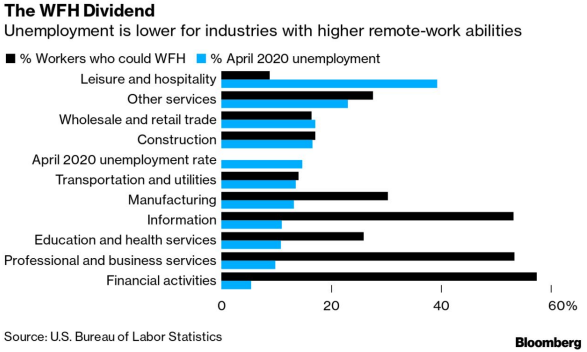
- Could persistence of HP growth not captured in the model be due to **WFH shocks?**
  - Half of HP boom since late 2019 due to remote work (Mondragon & Wieland 2022)



Source: Barrero et al. (May 2023)

- Also, outside of major city centers (NYC, SF), house prices did not fall at crisis onset
  - Model: avg. HP falls by $\approx 12\%$ in the COVID regime with transfers + AF/PM
- Other sources of demand shocks:
  - Millennials + demographics/baby boom argument (Mankiw & Weil 1989, 91)
  - **Search-for-yield** investors account for 25% of transactions (CoreLogic, March 2023)

Labor market inequality during COVID: model vs. data



- Ability to WFH important dimension of labor market inequality during early COVID era (Dingel & Neiman 2020)

- Model: borrowers **inelastically** supply labor $\implies$ all involuntary unemployment due to DNWR would be borne by savers
  - Done so each type has 4 endogenous state variables

- Both types **"share"** unemployment:

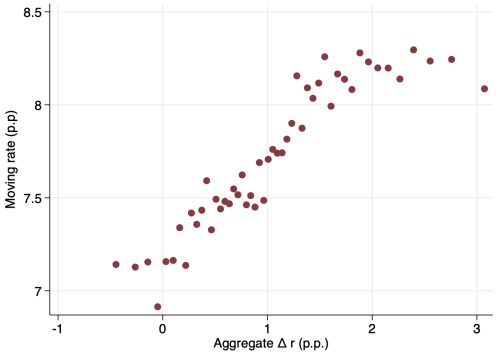
$$\widetilde{N}_t^B = \overline{N}^B - \upsilon^B \cdot (N_t^{des} - N_t^f)$$

$$\widetilde{N}_t^S = N_t^S - \upsilon^S \cdot \underbrace{(N_t^{des} - N_t^f)}_{\text{invol. unemp.}}$$

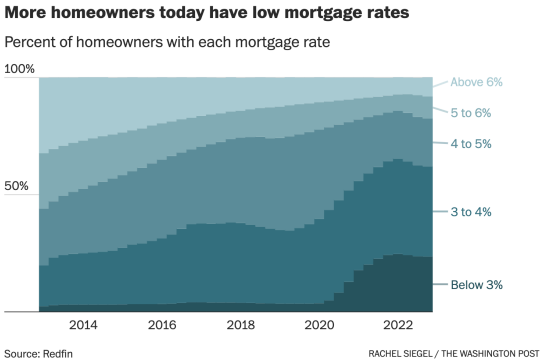
- (υ^B, υ^S) can then be used to calibrate to unemp. differences due to WFH

Other elephant in the room: mortgage lock-in effects

Figure 2: Moving Rates and Aggregate Mortgage Rate Deltas



Source: Fonseca & Liu: "Mortgage Lock-In, Mobility, and Labor Reallocation"



Source: https://www.washingtonpost.com/business/2023/05/14/mortgage-rates-housing-supply/ (May 14, 2023)

- Widening gap between origination and market rate (Δr) $\implies$ less mobility
- Even post-COVID, demand $>$ supply due to declining housing inventory

Can these demand-side features be captured in the model?

1. **Recalibrate model to match moments specific to WFH**
   - Right now model can match aggregate bust-boom w/o WFH
   - On bust side, loosely incorporate WFH through labor (υ^B, υ^S)
   - Could also try to match SDF to WFH SDF in Gupta, Mittal, Van Nieuwerburgh (2022)
   - Validate how much of HP inflation is due to WFH vs. AF/PM + stimulus regime

2. **Incorporating mortgage rate pass through**
   - Housing in fixed supply within each HH type in the model (segmented market)
   - Right now no floating contract rate
   - HH owes mortgage debt: $(\iota + \delta^m \cdot \bar{q}^m) \cdot m_{t-1}$
   - Set loan amortization to match average spread between mortgage rate and Treasuries (roughly constant) $\neq$ **the spread between new vs. existing loans**

Comment #2: is this only a COVID economics model?

- **Abstract:** general statements about what happens in a HANK model recession with a temporary departure from the Taylor rule
  - Not entirely clear this model could generate dynamics of Great Recession
  - **MPC heterogeneity channel** here which was quantitatively relevant during that episode (Kaplan & Violante 2014; Auclert 2019)
- **Simulate the 2008-12 period and see what happens**
  - Not as acute as COVID recession but slower recovery $\longrightarrow$ role of AF/PM policy?
  - EUC/extended benefits + stimulus checks during 2008 recession
- HH balance sheet block of model rich enough to pick up foreclosure wave
  - Minor point: bank foreclosure loss of $\zeta = 35\%$ seems high given $\approx 20\%$ auction haircut in literature (Harding, Rosenblatt, Yao 2012)

Not all fiscal stimuli are created equal

- **Lump-sum** tax/transfer regime in all versions of the model
- Language in the paper suggests authors believe **unemployment insurance (UI)** most important stimulus policy for propping up consumption
  - Arguably, UI biggest in spending [$675 bil.] and MPCs [43%] (Ganong et al. 2022)
  - Other stimuli: one-time checks, mortgage forbearance, PPP loans, employee retention credit
- But in reality proportional income tax and $> 100\%$ pandemic UI replacement rate
  - For borrowers, shock replacement rate parameter (ε_ℓ) $\rightarrow$ $300 or $600 supplemental UI
  - Would **substitution effects** matter for AF/PM interaction?
- Ideally would like to know the contribution of each type of stimulus, conditional on Fed policy, to help resolve finger pointing

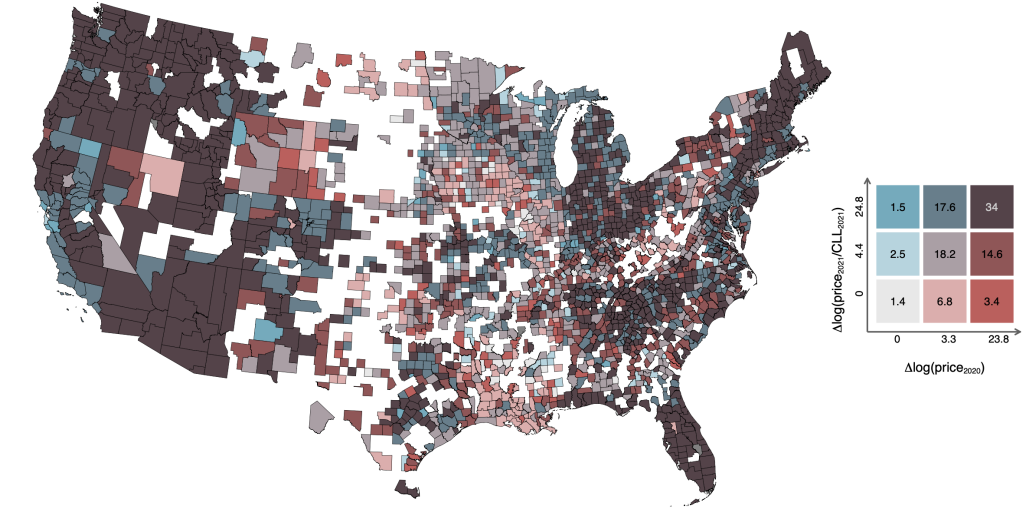
Comment #3: what to do about HP inflation?

- General point is that inflation in this episode was result of not increasing taxes
  - Raising taxes politically infeasible (e.g. uncertainty about debt ceiling)
  - Could other housing market policies act as substitutes?

- **Candidate: soft/strict loan-to-value (LTV)** limits for mortgages
  - Large empirical literature showing HP $\downarrow$ when max LTV $\downarrow$
  - Model #2 speaks to this but Model #3 apparently has an LTV limit (not listed in paper)
  - Leverage limits distortionary while lump-sum taxes are not

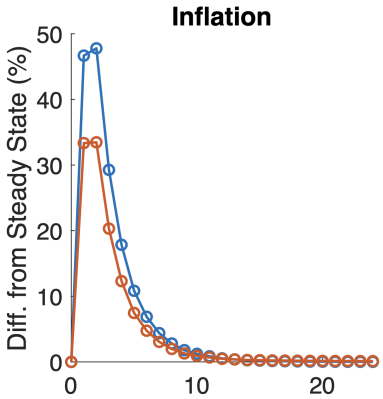
- Soft limit: leverage limits are tightening more in some places than others due to widening gap between local HP and conforming loan limit (CLL)
  - Counties with larger HP/CLL wedge now cooling more since credit more expensive

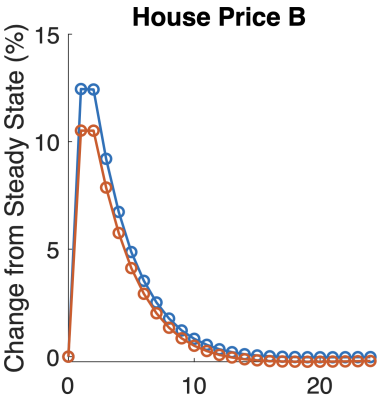
CLL imperfectly tailored to local HP growth



Source: Chi, LaPoint, Lin (2023): "Spatially Targeted LTV Policies and Collateral Values"

Would a strict LTV limit work if taxes can't be imposed?





- In contrast, top-down, strict LTV limit like the one considered in Model #2 would dampen post-COVID boom
  - Caveat: numbers here exaggerated since not fully quantitative model

Final thoughts – a return to normalcy?

- **Technically dazzling** calibrated model of government response to the COVID crisis, and timely given finger pointing over who is to blame for high inflation
- Some peculiar features of COVID-era housing markets which are missing here
  - Demographic-specific and **persistent WFH shocks** to housing demand
  - **Mortgage lock-in effects** due to shift in mortgage composition + refi activity
- Probably do not need to add these features to the already rich environment
  - Clarify how much of model is unique to COVID $\longrightarrow$ simulate 2008-12 in the model
  - Indirectly improve the "fit" by recalibrating to new set of targeted moments
- Looking forward to seeing future results, especially those linking fiscal $\times$ monetary stimulus to persistence of the housing boom!

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THANKS!