

# Discussion of “Refinancing Inequality During the COVID-19 Pandemic” (Agarwal, Chomsisengphet, Kiefer, Kiefer, and Medina)

by Lu Liu

Imperial College London

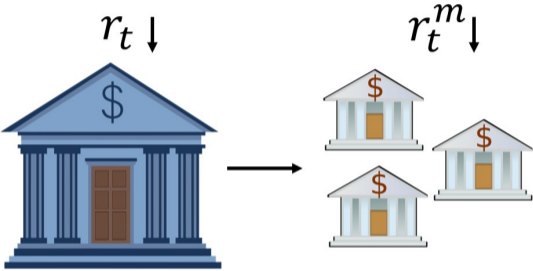
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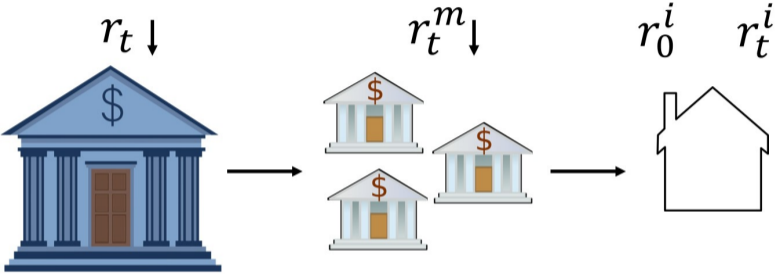
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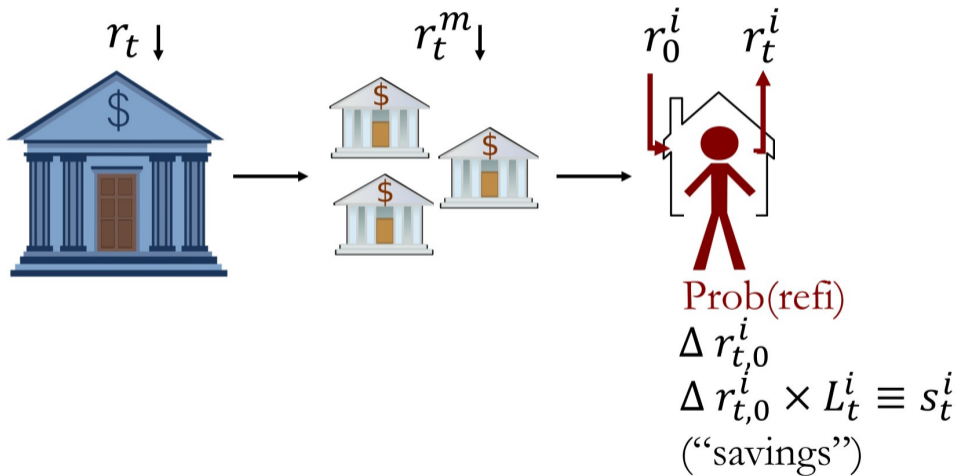
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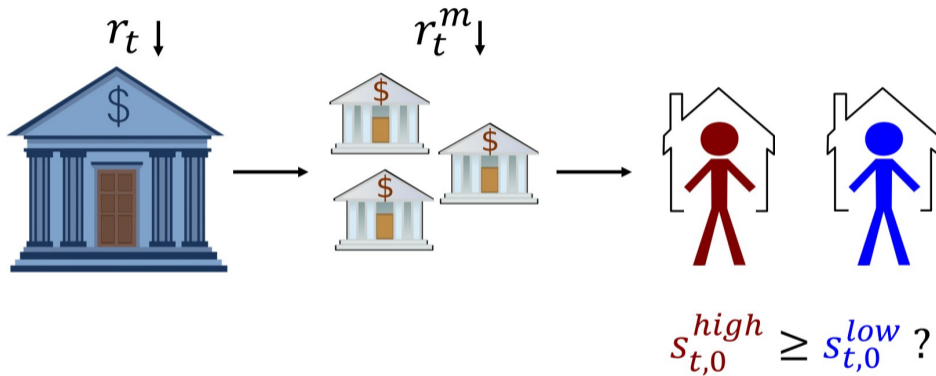
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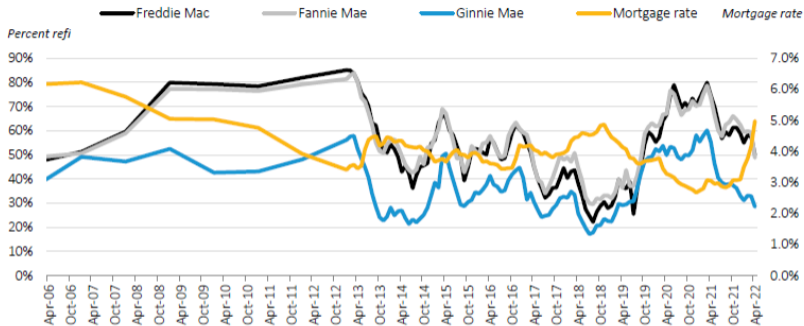
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“Refinancing Gap”

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  - Time working from home
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- **Novel data:**
  - Matched Freddie Mac Data
  - Supplementary: Covid cases, mobility, unemployment, forbearance
  - Applications

# Covid-19 Refi Wave in Comparison

## Percent Refi at Issuance



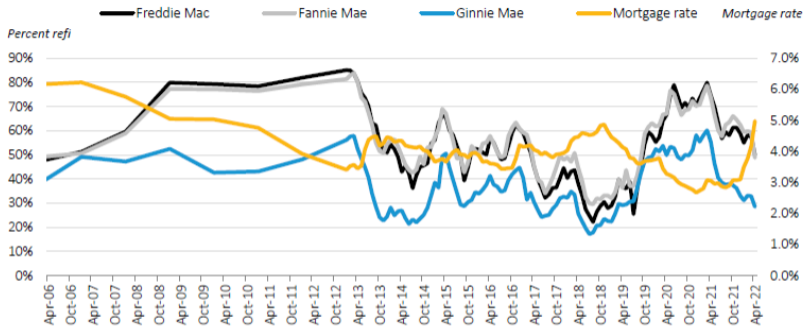
Sources: eMBS and Urban Institute.

Note: Based on at-issuance balance. Figure based on data from April 2022.

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→ What can we learn for refinancing behavior (and policy) more broadly?

# Comments

- ① Optimal Refinancing and Interpretation
- ② Relative Effects vs. Absolute
- ③ What Do We Learn From 2020?
- ④ Related Work and Where This Paper Sits

## Comment 1: Optimal Refinancing and Interpretation

- ADL formula  $\rightarrow$  closed-form solution for optimal refinance problem:  
*refinance if  $\Delta r \geq \Delta r^*$  where  $\Delta r^* = f(L_t, \underbrace{k}_{\text{Cost of refinancing}}, T, \dots)$*



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  - Regress  $\mathbb{I}_{refi}, \Delta r \mid refi$  and  $E[\Delta s]$  on income quintiles
  - Controls: zip code, loan age, FICO, LTV,  $r_0$ ,  $L_t$  (not:  $T$ )

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  - Controls: zip code, loan age, FICO, LTV,  $r_0$ ,  $L_t$  (not:  $T$ )
- **Important**: even if *no* frictions and  $k^{high} = k^{low}$ , would expect a positive (unconditional) refinancing gap
  - Incentive  $\Delta r^*$  scales by **loan size**  $L_t$ , but  $k$  has fixed component
  - **Income** likely strongly positively correlated with loan size (neighborhoods with higher house prices, *DTI* requirements)

# Optimal Refinancing is Increasing in Loan Size (And Hence Income)

Relationship Between  $\Delta r^*$  and Loan Size (ADL, 2013)

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TABLE 1  
REFINANCING DIFFERENTIALS IN BASIS POINTS BY SOLUTION METHOD

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Mortgage	Exact optimum	Second order
\$1,000,000	107	97
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\$250,000	139	123
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3. Adjust **headline number** for potential refinancing savings

- Currently: 5bn (sum for q1-q4), applying counterfactual if  $L^{other} = L^{high}$

- Compute q-by-q: 
$$\underbrace{\frac{N \text{ who prepay}^{high}}{N \text{ in the money}^{high}}}_{\text{Counterfactual sensitivity to refi incentives}} - \frac{N \text{ who prepay}^{low}}{N \text{ in the money}^{low}} \times \Delta r^{low/high} \times L^{low}$$

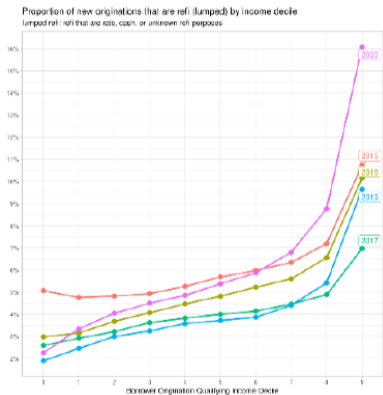
"Counterfactual sensitivity to refi incentives"

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## Figure 15

### (a) Fraction of new originations that are refinances

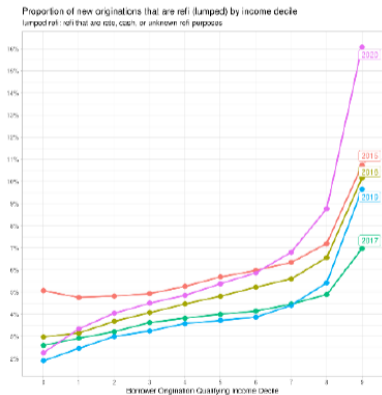




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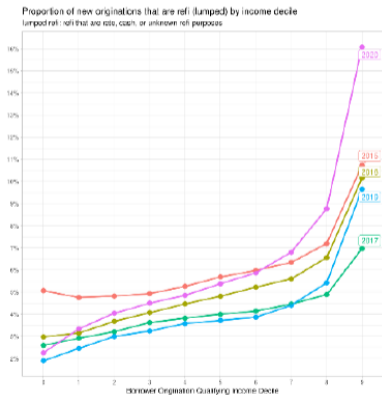


- Variation in levels  $\rightarrow \Delta r$

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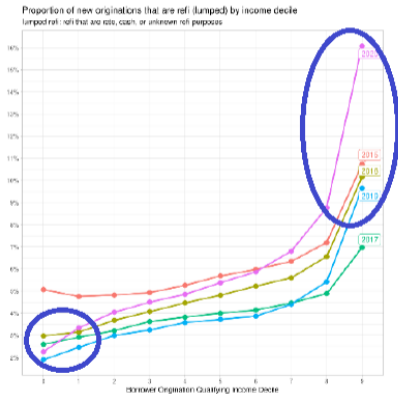


- Variation in levels  $\rightarrow \Delta r$
- Variation in slopes  $\rightarrow$  probability to refinance (e.g. 2016) – ideally: show sensitivity to refi incentives

# Comment 2: Relative Effects Vs. Levels

Figure 15

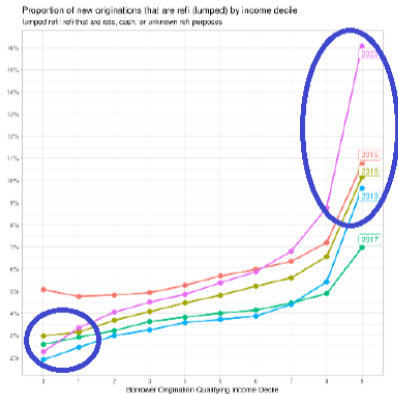
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## Comment 2: Relative Effects Vs. Levels

Figure 15

(a) Fraction of new originations that are refinances



- Difference in 2020 vs. other years driven by d1 and d10?
  - Would be useful to compare 2020 vs 2019 results (rather than pre-2020 pooled)
  - What's going on in d10?
- What do we learn from 2020?

## Comment 3: What Do We Learn From 2020?

- (Unconditional) pattern in refinancing looks relatively similar over time across d2-d7
- What drives the relative effect - q1 or q5?
- Is Covid a shock that affected the tails most? Is there a way to use pandemic that affects q1 and q5 differentially?

## Comment 3: What Do We Learn From 2020?

- (Unconditional) pattern in refinancing looks relatively similar over time across d2-d7
- What drives the relative effect - q1 or q5?
- Is Covid a shock that affected the tails most? Is there a way to use pandemic that affects q1 and q5 differentially?
- Right now: location-time-specific variation in Covid case rates seem able to explain changes in gap
  - q1: unemployment **X**, forbearance (state-level) ✓ ( $k^{low}$  ↑)
  - q5: working from home ( $k^{high}$  ↓) ✓✓
- Teasing out what affects  $k^{low}$  vs  $k^{high}$  would be relevant for policy

## Comment 4: Related Work and Where This Paper Sits

- Heterogeneity in refinancing activity and ability wrt age, education, income, financial wealth, LTV, financial literacy, cognitive ability (Keys et al 2016, Agarwal et al 2016, Hurst et al 2016, Andersen et al 2021, D'Acunto et al 2021)

## Comment 4: Related Work and Where This Paper Sits

- Heterogeneity in refinancing activity and ability wrt age, education, income, financial wealth, LTV, financial literacy, cognitive ability (Keys et al 2016, Agarwal et al 2016, Hurst et al 2016, Andersen et al 2021, D'Acunto et al 2021)
- Variation in refi cost  $k$  has regressive effects: Fisher et al (2021)
  - Structurally estimate distribution of  $k$  to back out refi *cross-subsidies*
  - Average  $k$  somewhat decreasing in income deciles
  - *Novel margin*: higher income people reduce *loan take-up* when cross-subsidy is counterfactually removed (“democratization”)



## Comment 4: Related Work and Where This Paper Sits (Cont'd)

- This paper: allows us to track refinancing outcomes at the loan level (in the US), expands PPF
  - 1) Does it primarily help us understand what happened during Covid?
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- Covid refi gap effects largely driven by high income people's  $k$  decreasing?
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  - Tease out differential effect of Covid on high vs. low income HHs?
- The fact that you can explain refinancing gap pre-2020 using observables is actually remarkable (make more of that? which variables matter? FICO a good proxy for  $k$ ?)

## Conclusion

- Important paper, novel data and empirical exercise - refinancing behavior key determinant of monetary pass-through to households
- Regressive effects - can we design better policy interventions (to address low-income refi behavior)?
  - Automatic/state-specific refinancing
  - Default option? Link it to high income behavior?
  - MP channel vs. progressive fiscal policies (given behavioral frictions)?
- Really enjoyed reading the paper and learned a lot from it, look forward to future work!

Thank you!