State Dependent Effects of Monetary Policy: The Refinancing Channel

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Discussion by Benjamin Moll

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My View

- Exciting project!
- I learned a lot about mortgage market, refi decisions and how they are affected by monetary policy
- Main result: in countries with predominantly fixed-rate mortgages (U.S.), monetary policy's effectiveness depends on its history
  - "normal times": rate cut $\Rightarrow$ many homeowners refinance mortgage $\Rightarrow$ disposable income $\uparrow \Rightarrow C \uparrow$
  - after long period of low rates (i.e. now!): almost everyone has already refinanced. Rate cut $\Rightarrow$ only small C increase.
  - Example of state dependence, state = dist'n of "rate gaps"

Story in graphs: 1. Rate gaps ⇒ refis & consumption

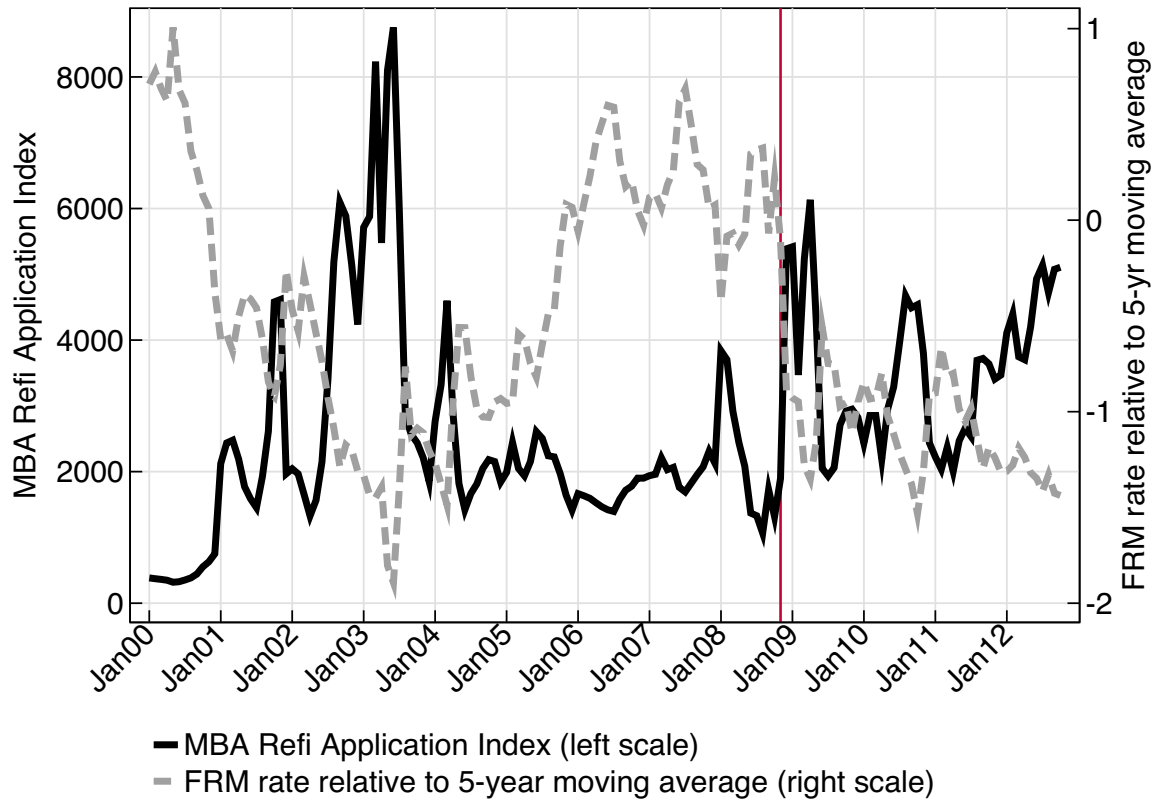


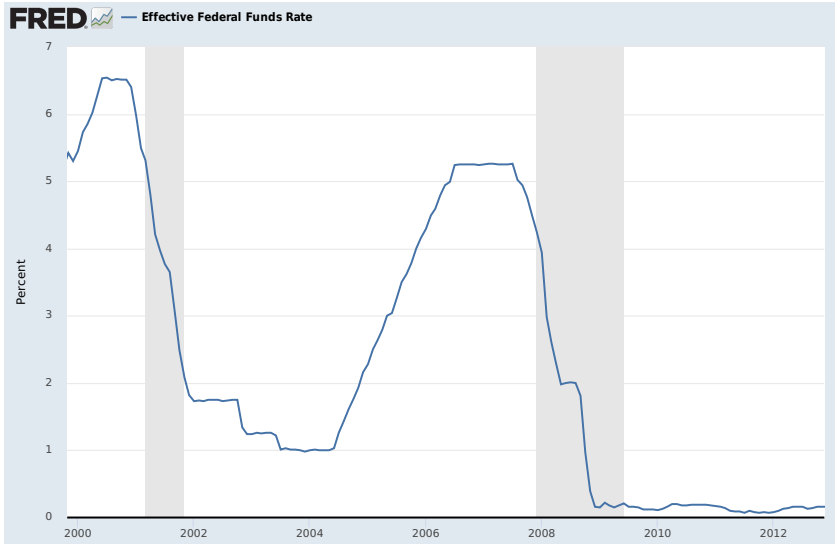
FIGURE I

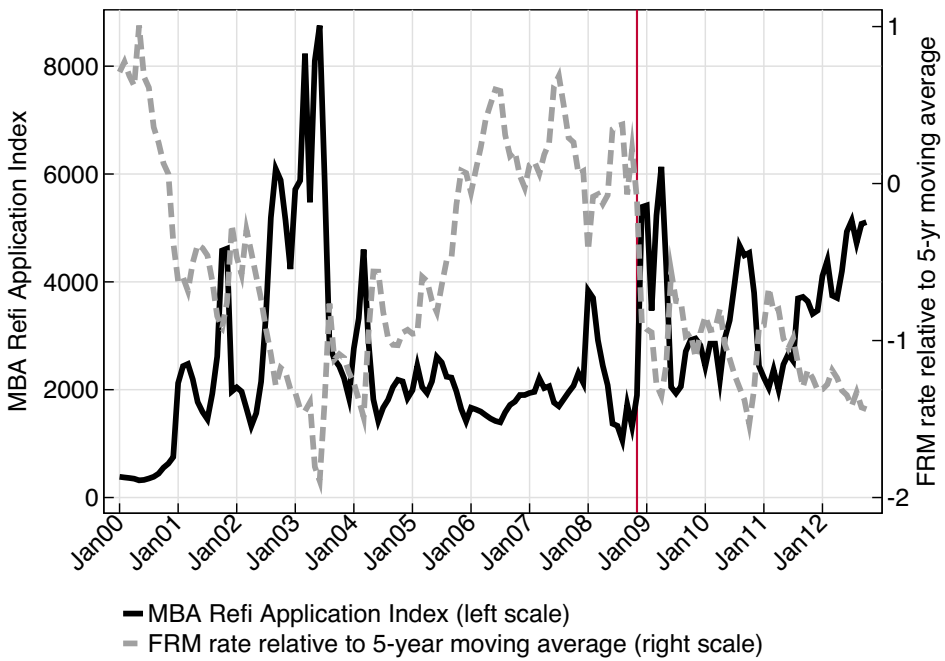
Mortgage-refinancing Activity in the United States over 2000–2012

Figure shows monthly average of Mortgage Bankers Association (MBA) Refinancing Index (seasonally adjusted; March 1990 = 100) and the 30-year fixed-rate mortgage rate (relative to five-year moving average), also from MBA.

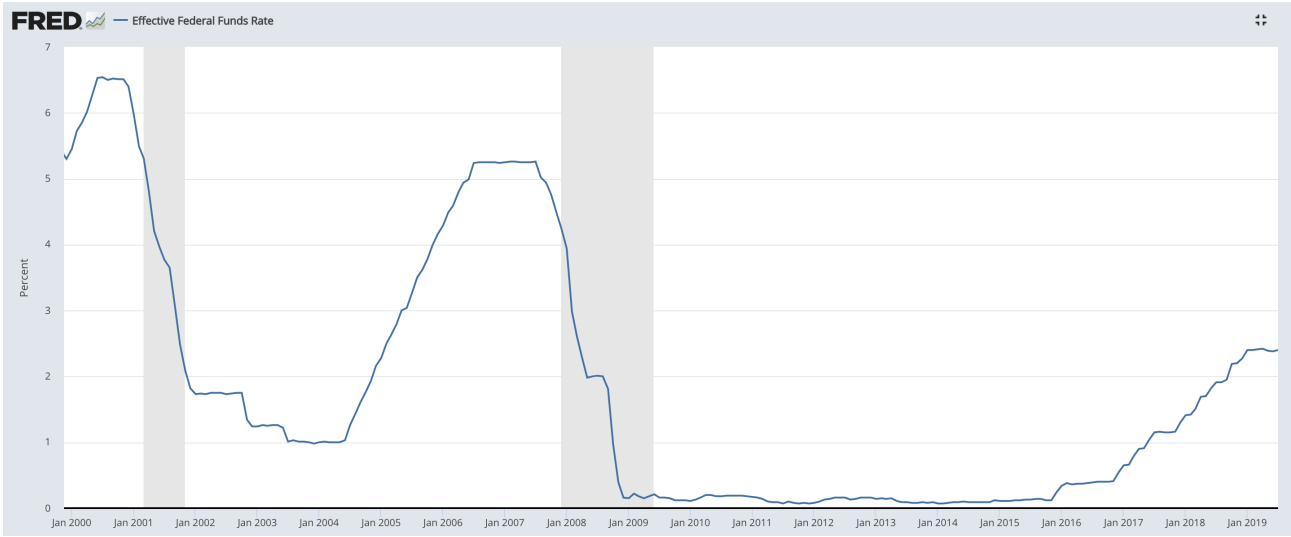
Source: Beraja, Fuster, Hurst & Ospina (QJE, 2018)

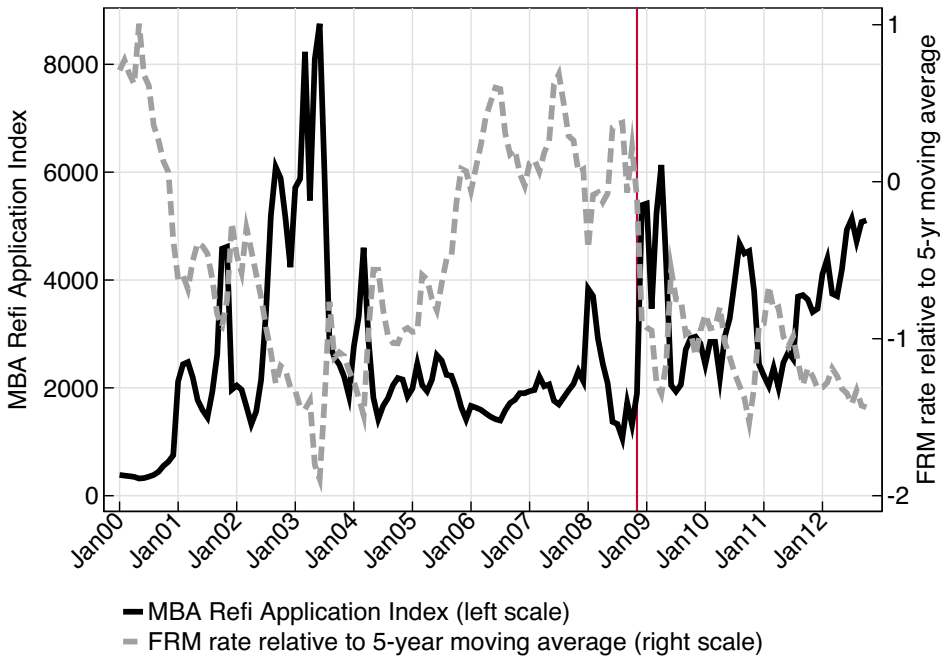
Story in graphs: 2. Monetary policy ⇒ rate gaps



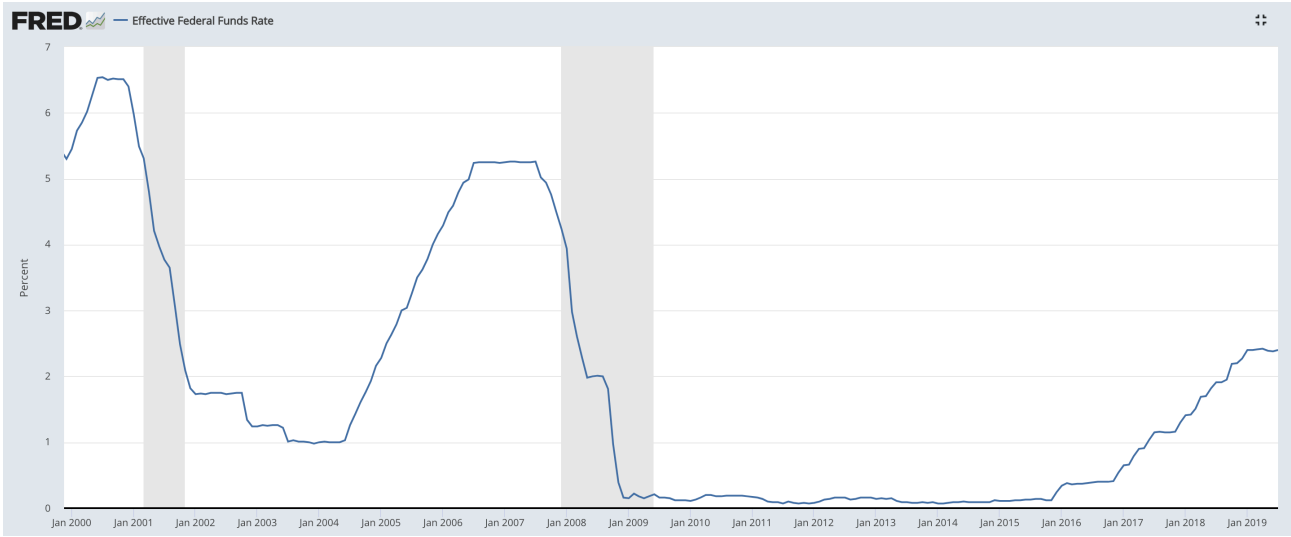


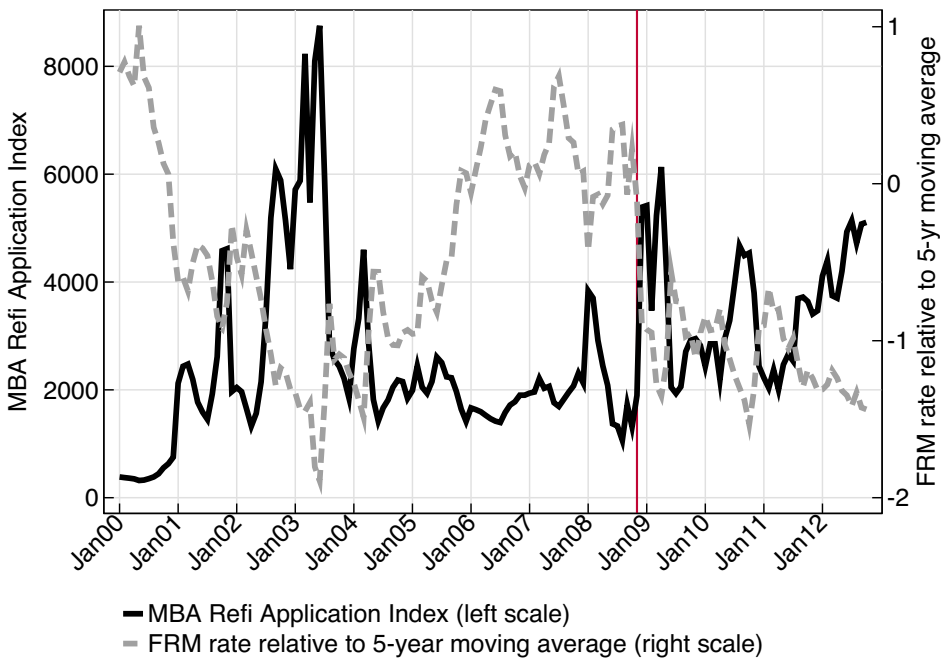
Story in graphs: 3. persistently low $r \Rightarrow$ everyone refi's



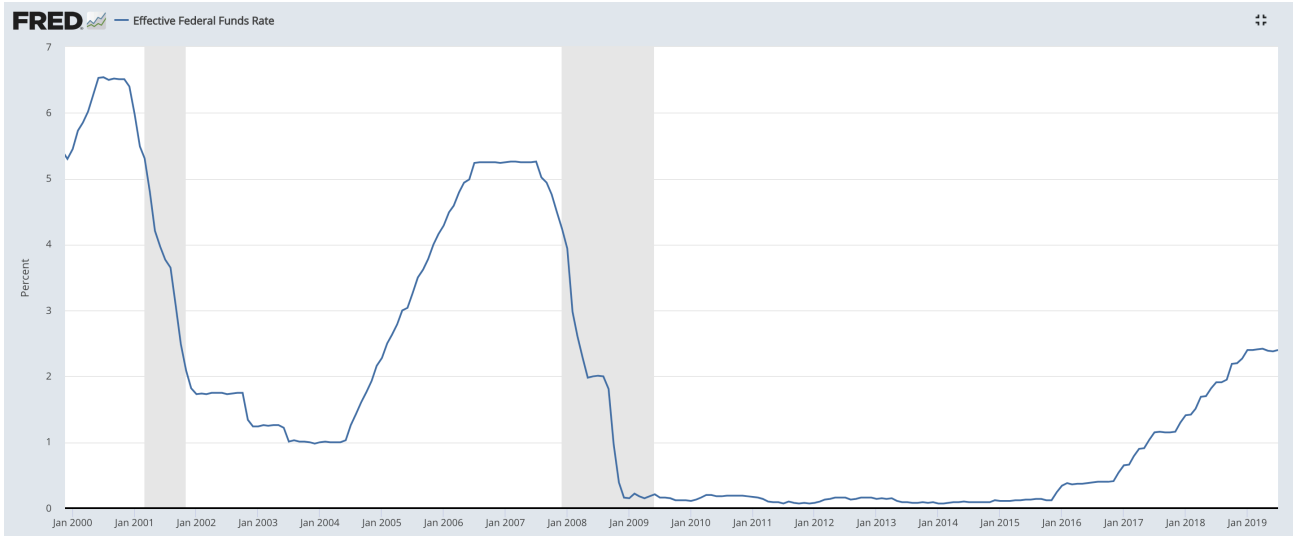


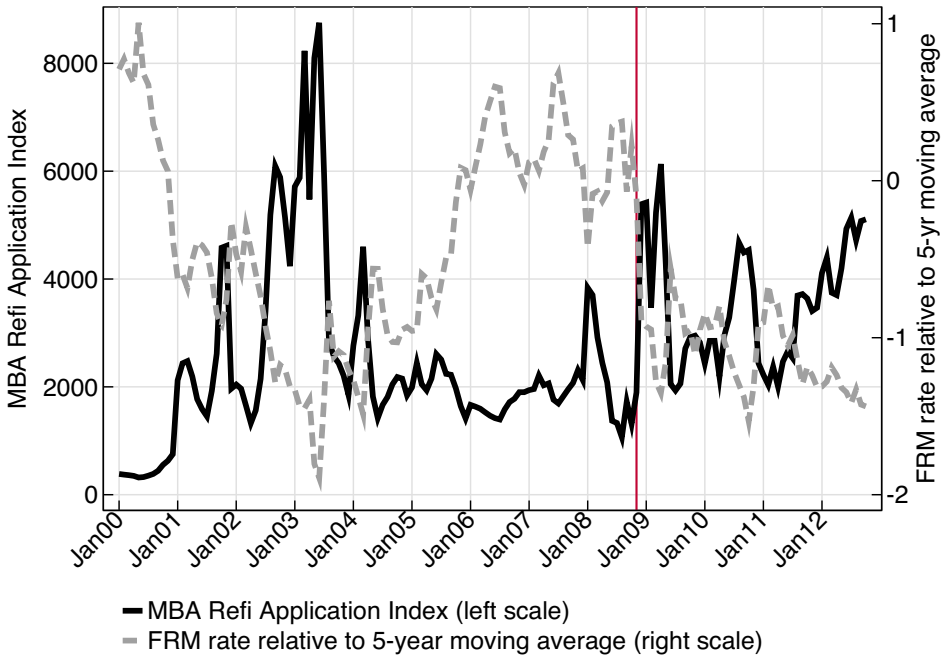
Story in graphs: 4. Cut *r* now? Small effect!





(Comment 0: simple time-series evidence?)





The Paper: Quantitative Assessment of this Story

1. Empirical results on state dependence and how large it is
2. Quantitative lifecycle model (Wong, 2019) that match these
3. Policy counterfactuals

- Authors place a lot of weight on quantitative results
  (as opposed to theoretical insight)
  - 2nd paragraph: "[Our] results are interesting to the extent that our model is a credible representation of the data."
  - So my comments are mostly about those as well

Plan

1. Place paper in macro literature on monetary policy & consumption

2. Some comments on quantitative model

3. A minor question on empirics

Monetary policy and consumption (RANK, HANK,...)

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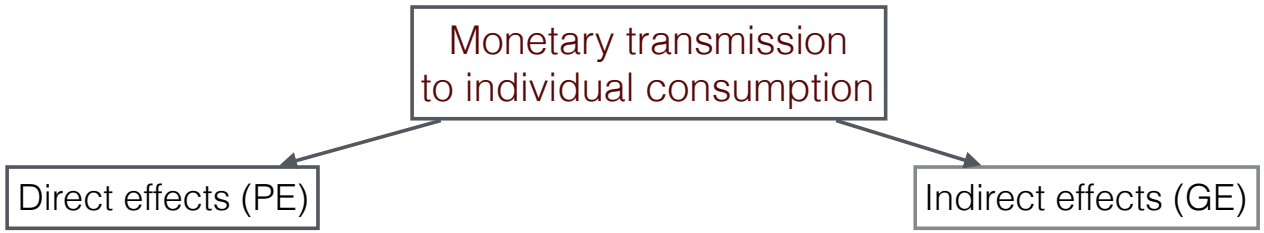
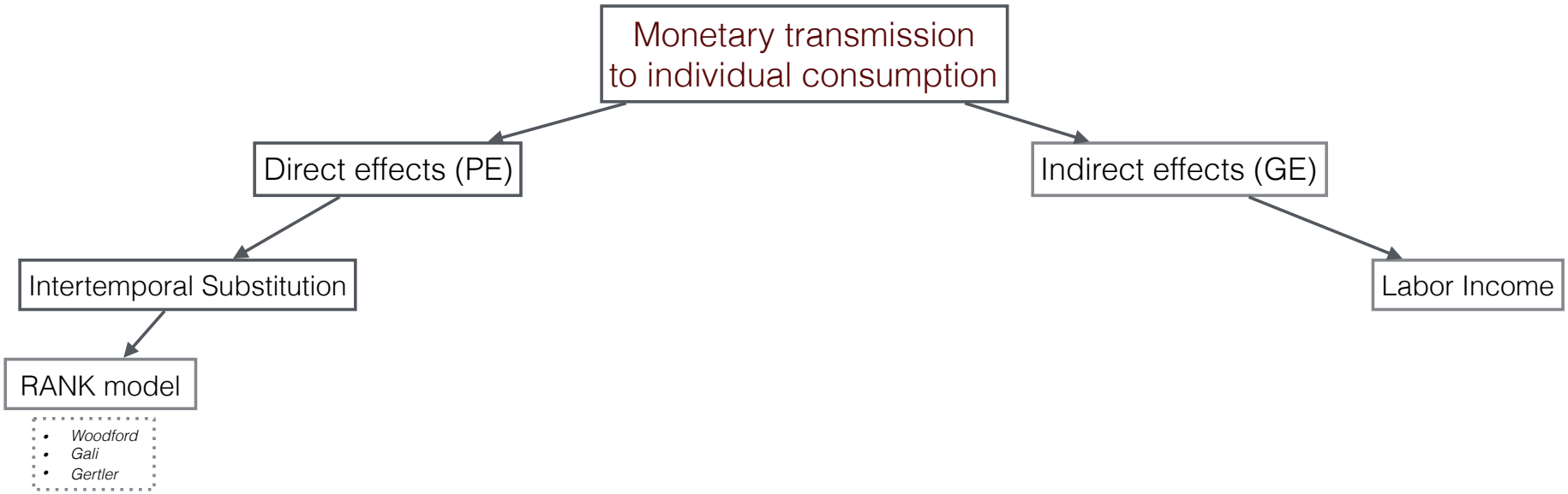
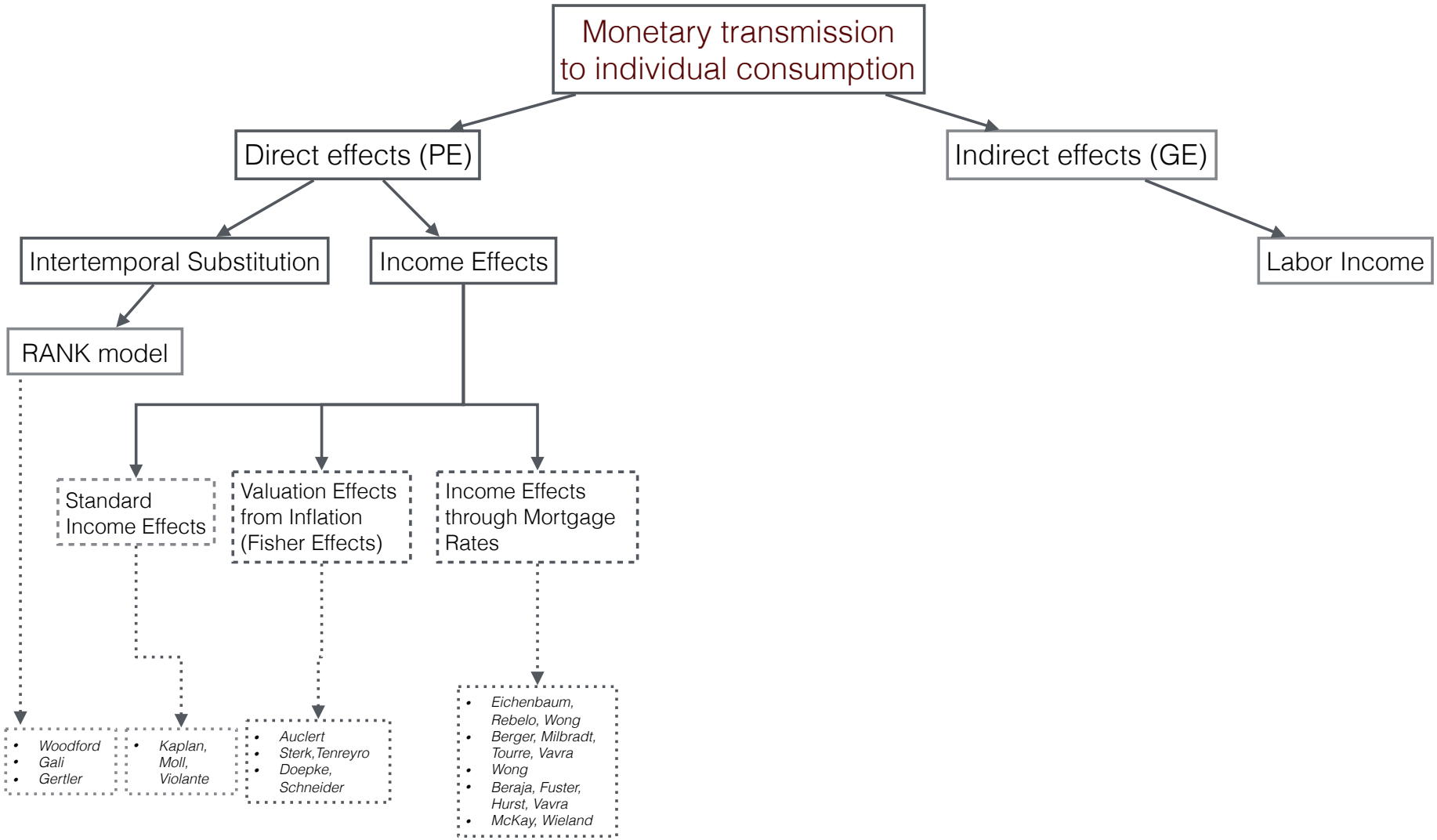


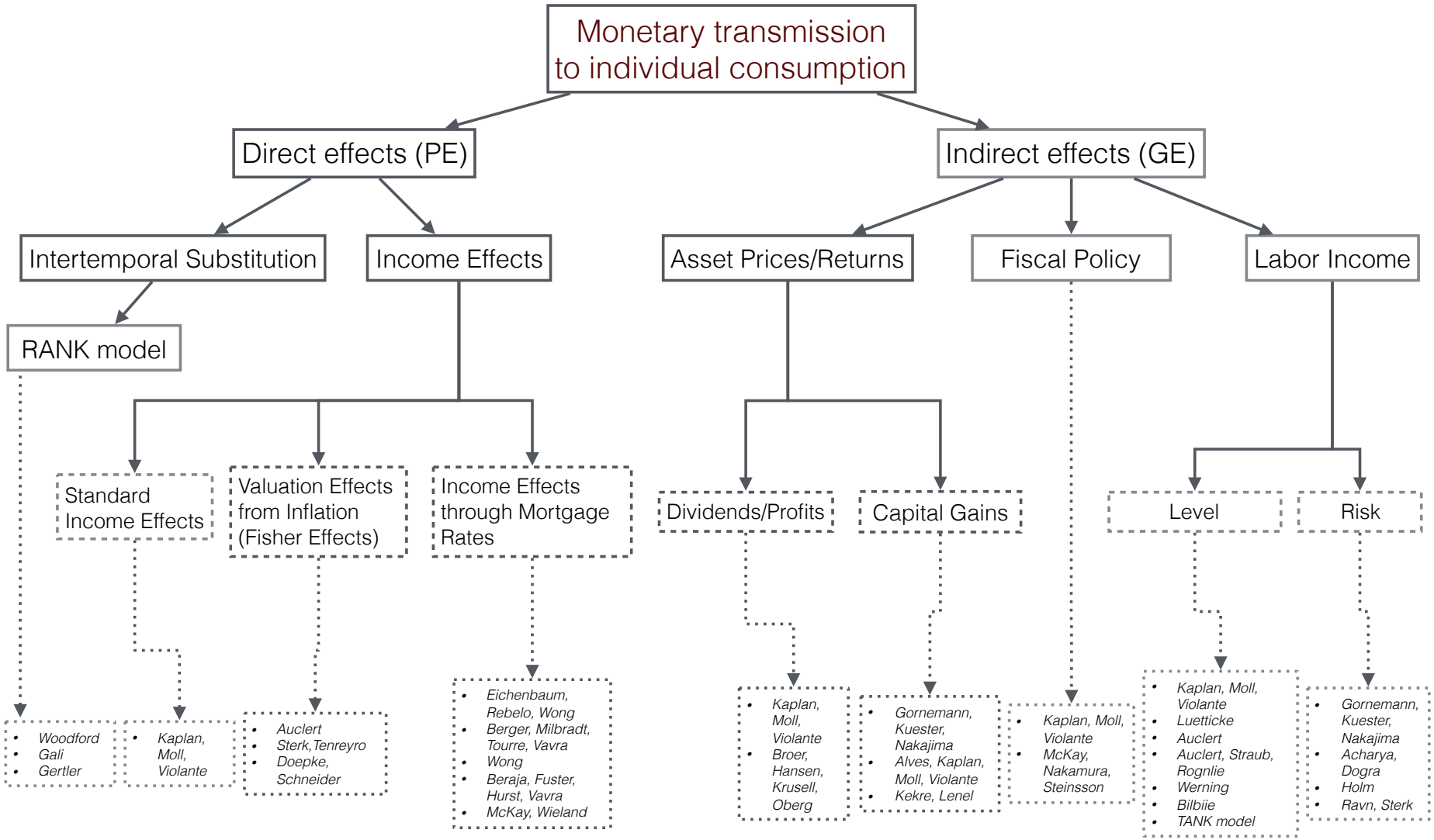
RANK: all about intertemporal substitution (Euler Eqn)



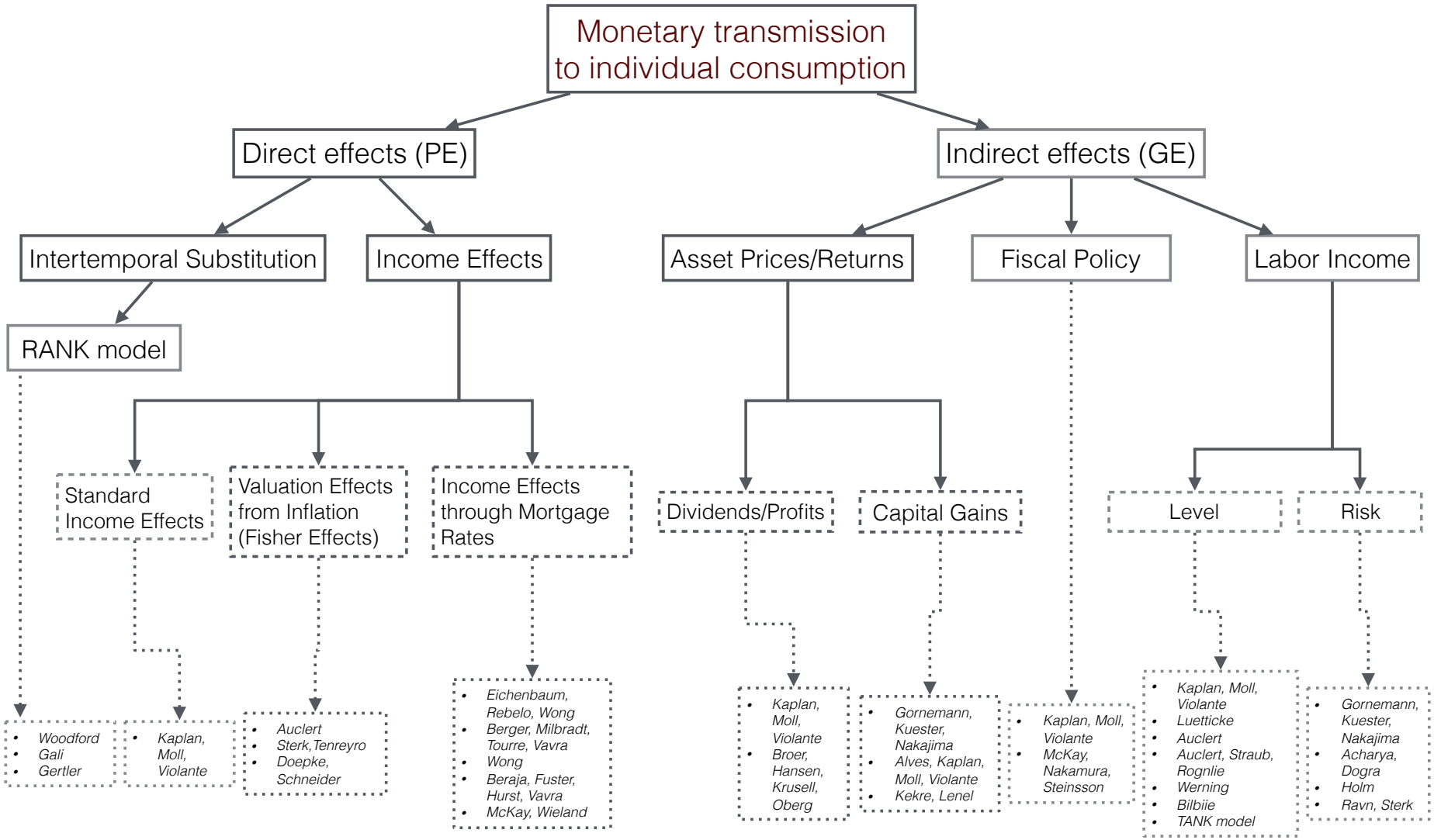
HANK: emphasizes alternative direct effects...



HANK: ... and indirect effects (given high MPCs)



We've come long way since rep agent Euler equation!



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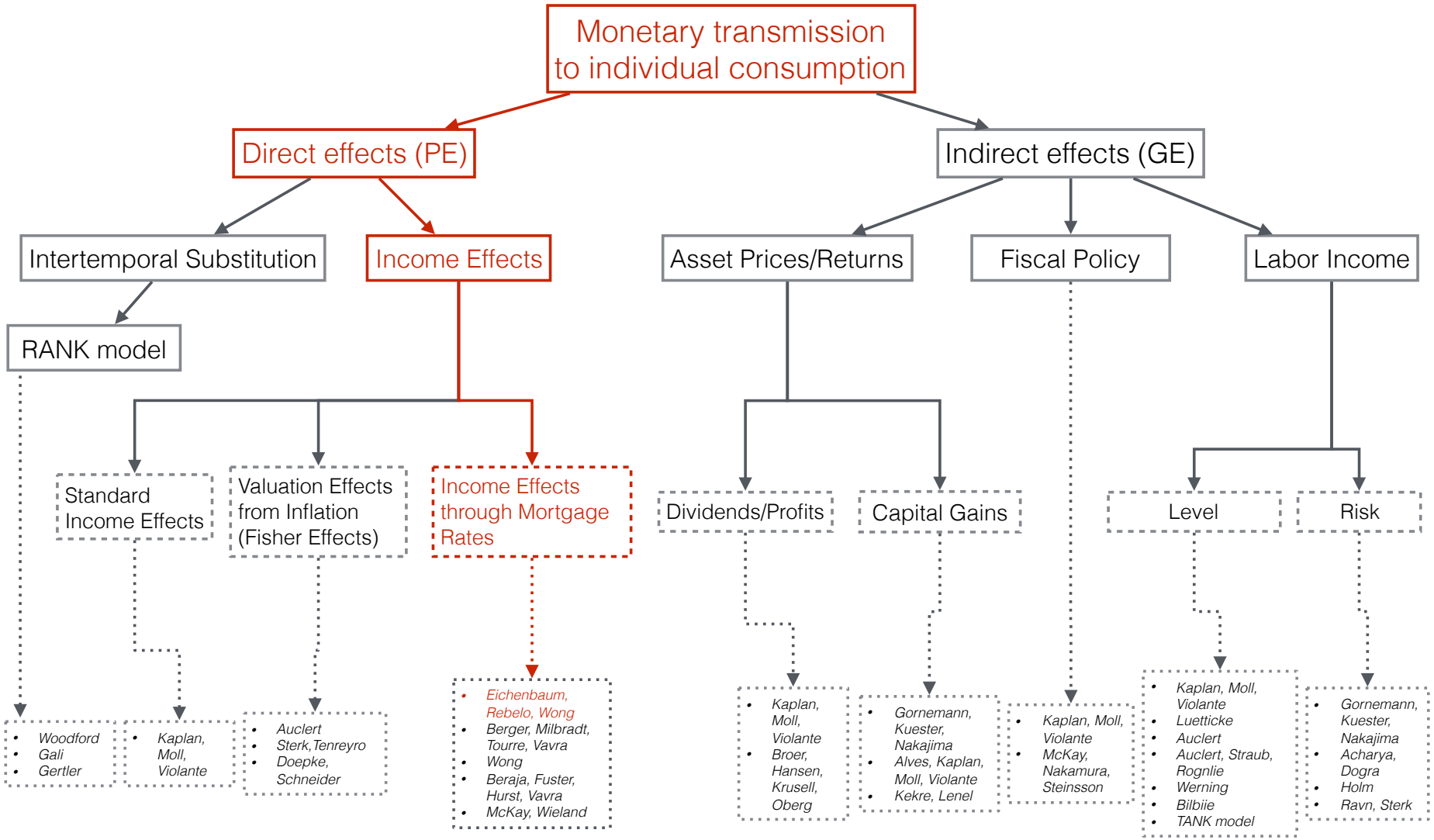

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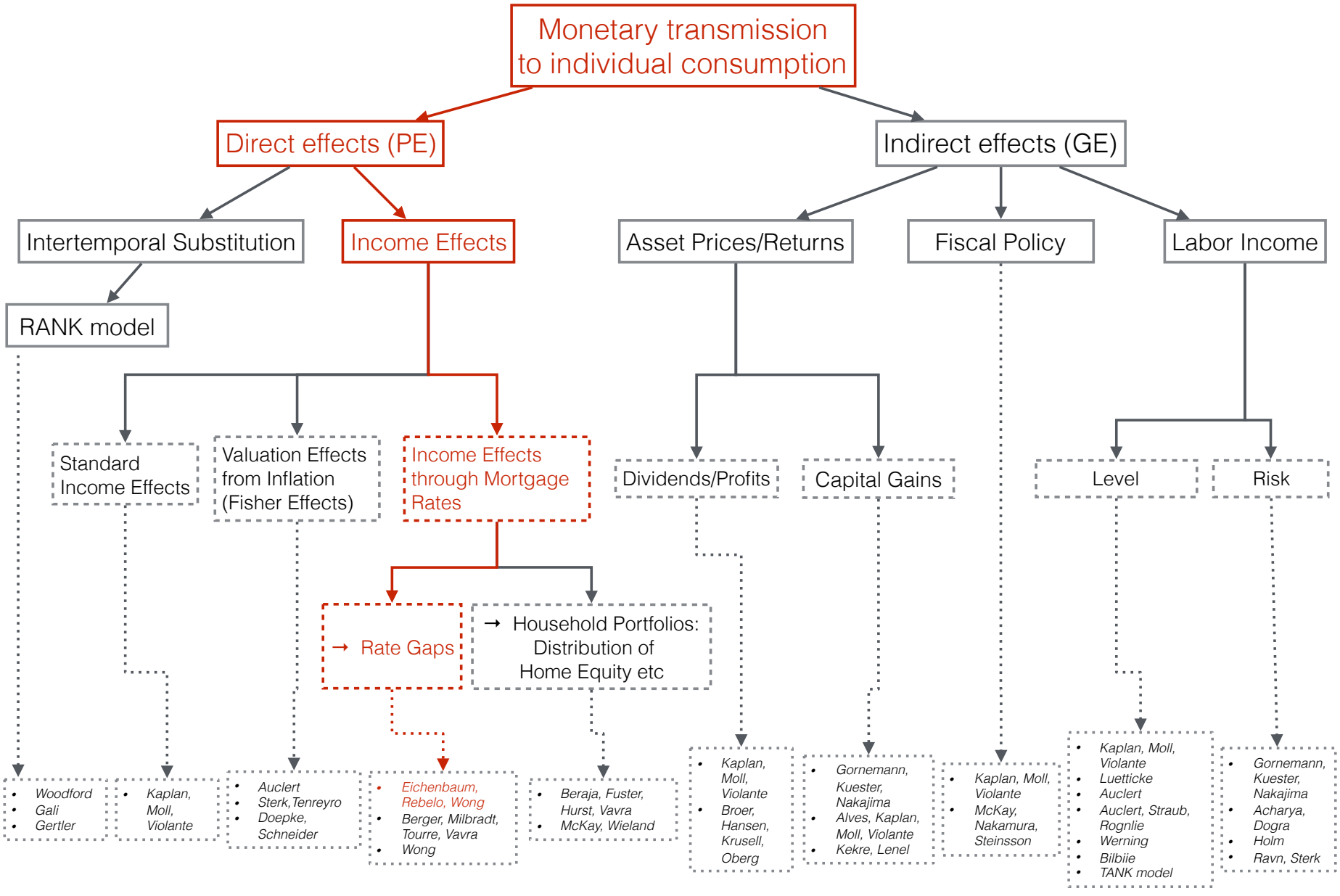

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- Paper focuses on specific but arguably very important part of monetary transmission mechanism (at least in U.S.)
- More generally
    - literature is growing very quickly
    - will be important (but challenging!) to put everything together and assess relative importance of different mechanisms

Comment 1: Time dependence/"Calvoness"?

- Model in paper: all refinancing and moving decisions determined by "economic fundamentals" (financial incentives, lifecycle, ...)
  - essentially an (S, s) model of optimal inaction
  - this state dependence at individual level generates the aggregate state dependence that paper emphasizes
- But empirically, this is probably a bit extreme

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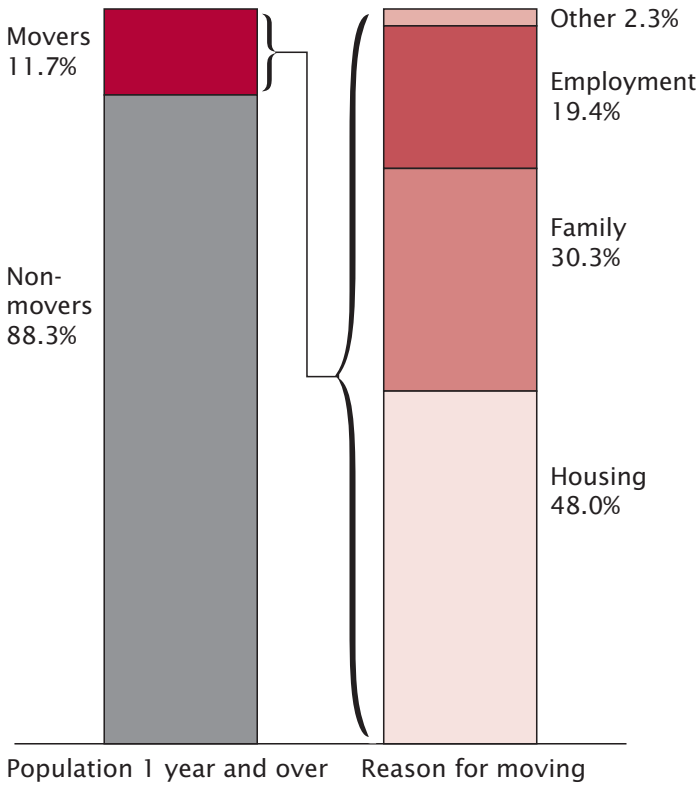
1. Refinancing:
   - households leave large sums on table (Keys-Pope-Pope "Failure to Refinance")
   - inconsistencies over time that violate optimal inaction (Andersen-Campbell-Nielsen-Ramadorai using Danish admin data)
   - ...
2. Moving: many reasons unrelated to economics – see next slide

Comment 1: Time dependence/“Calvoness”?

Figure 1.

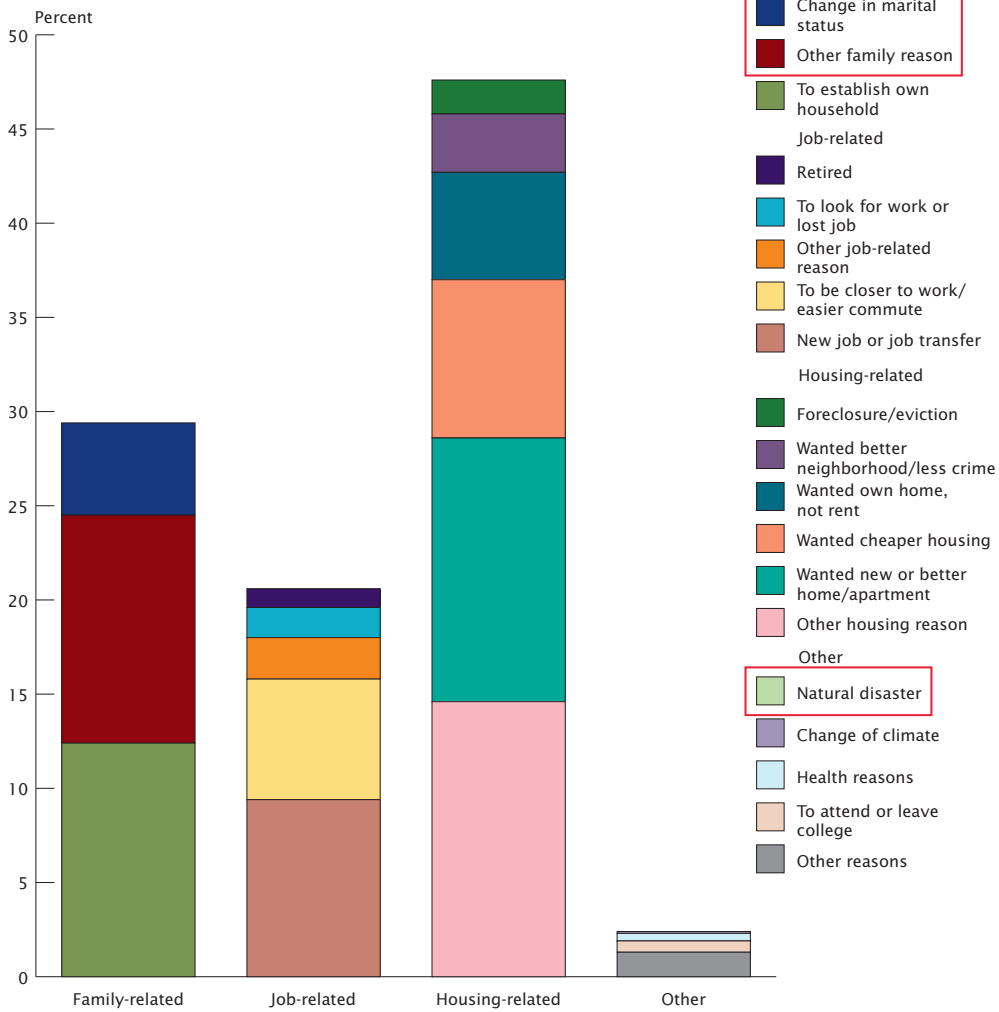
How many people moved and what was their main reason for moving? In the United States, 35.9 million people moved between 2012 and 2013.



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2013.

Figure 2.

Householders' Reason for Move: 2012 to 2013



Source: U.S. Census Bureau, Current Population Survey, Annual Social and Economic Supplement, 2013.

Source: Ihrke (2014)

Comment 1: Time dependence/"Calvoness"?

- Natural solution: add some time dependence or "Calvoness"
  - refinance/move randomly
  - natural conjecture: less state dependence at individual level would weaken aggregate state dependence
- Question: how would realistically calibrated "Calvoness" alter quantitative results?
- Note: most related paper by Berger-Milbradt-Tourre-Vavra has this (but they abstract from many other things that current paper has)

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A comment authors have already partially addressed...

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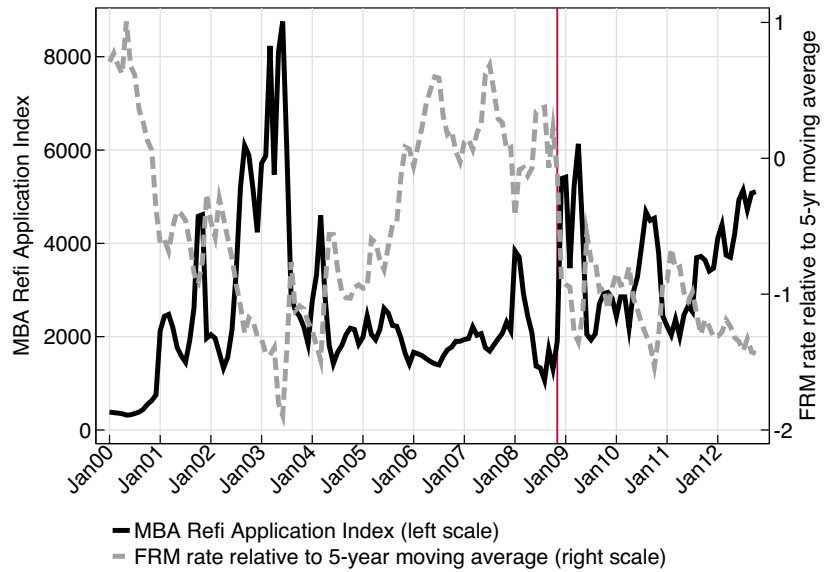
- Indeed, time-series evidence seems consistent w this asymmetry



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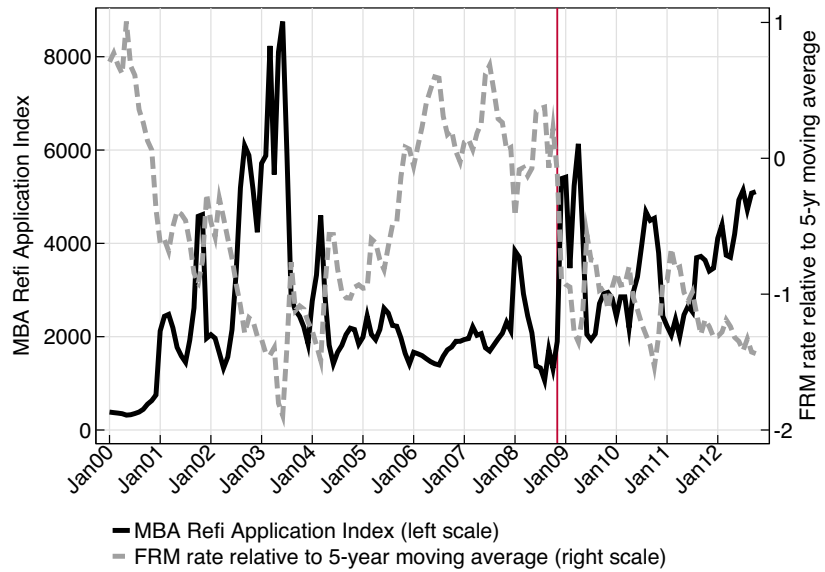

- Suggests $\mathbb{E}[r^{\text{old}} - r^{\text{new}} | r^{\text{old}} > r^{\text{new}}]$ rather than $\mathbb{E}[r^{\text{old}} - r^{\text{new}}]$
- Appendix already shows robustness to using similar moments

Comment 2: Focus on average rate gap?

- Also model suggests average rate gap A_{t-1} is insufficient statistic

Table 9: Alternative paths of monetary policy

Rate path prior to a 50bp cut	Average rate gap before cut	Fraction with positive rate gap, after rate cut	Effect on refinancing	Change in consumption	Fraction ST constrained
Panel A: Effects of Flat vs Rising History					
(i) Flat at about 3.5%	0.00%	100%	26%	1.3%	0.48
(ii) Rising from 3.5% to 6.5% over 4 pds	-0.81%	16%	5%	0.1%	0.64
Difference (i)-(ii)	0.81%	84%	21%	1.2%	-0.16
Panel B: Effects of Flat vs Falling History					
(i) Flat at about 3.5%	0.00%	100%	26%	1.3%	0.48
(ii) Falling from 3.5% to 1% over 4 pds	0.46%	100%	23%	0.5%	0.33
Difference (i)-(ii)	-0.46%	0%	3%	0.9%	0.15

- Average rate gap very different but refinancing rate very similar

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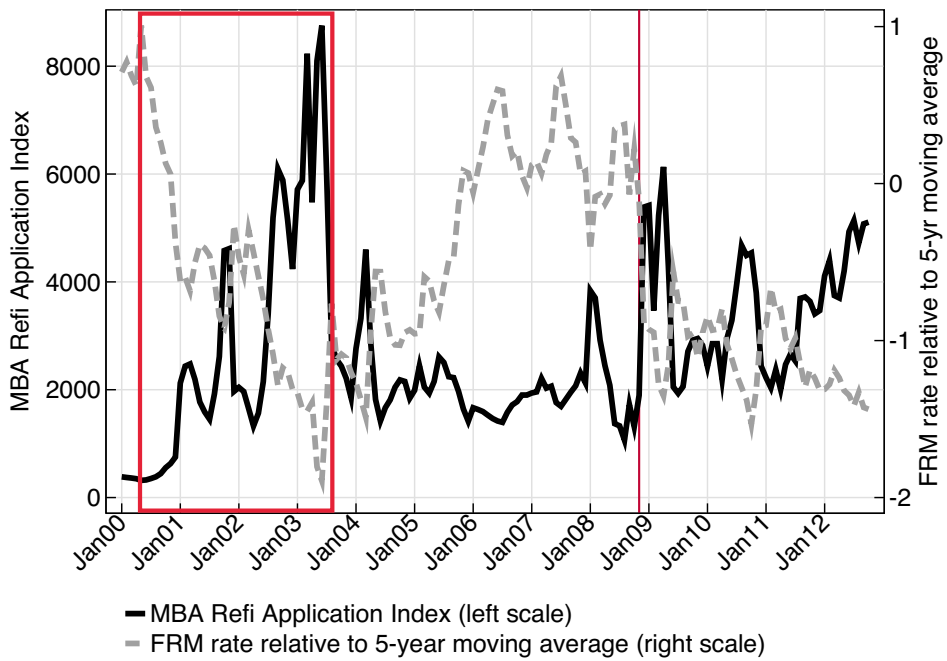
Table 10: Alternative paths of monetary policy

Rate path prior to a rate cut	Average rate gap before cut	Fraction with positive rate gap, after rate cut	Effect on refinancing	Change in consumption	Fraction ST constrained
Reloading Effect with 50bp cut					
(a) Benchmark case: continuously flat at 3.5% prior to a 50bp rate cut	0.00%	100%	26%	1.3%	48%
(b) 3.5% cut to 1% for 4 pds, rise for 3 pds to 3.5%, flat at 3.5% for **1 pd**	-0.28%	66%	22%	0.9%	57%
(c) 3.5% cut to 1% for 4 pds, rise for 3 pds to 3.5%, flat at 3.5% for **2 pds**	-0.27%	68%	26%	0.9%	58%
(d) 3.5% cut to 1% for 4 pds, rise for 3 pds to 3.5%, flat at 3.5% for **3 pds**	-0.25%	70%	26%	1.3%	58%

- Another example: average gap different but refi rate same

Comment 3: How heavily do results lean on 2001-03?

- Sample period: 1995/99 to 2005
- Part of that period looks anomalous for refis, particularly 2001-03



- How heavily do empirical results lean on 2001-03? Robustness?

Summary

- Exciting project!
- Quantitatively credible results on specific but important part of monetary transmission mechanism
- Comments/questions:

0. simple time-series evidence
1. time dependence/“Calvoness”?
2. focus on average rate gap?
3. how heavily do results lean on 2001-03?