Unintended consequences of Biggert-Waters/HFIAA

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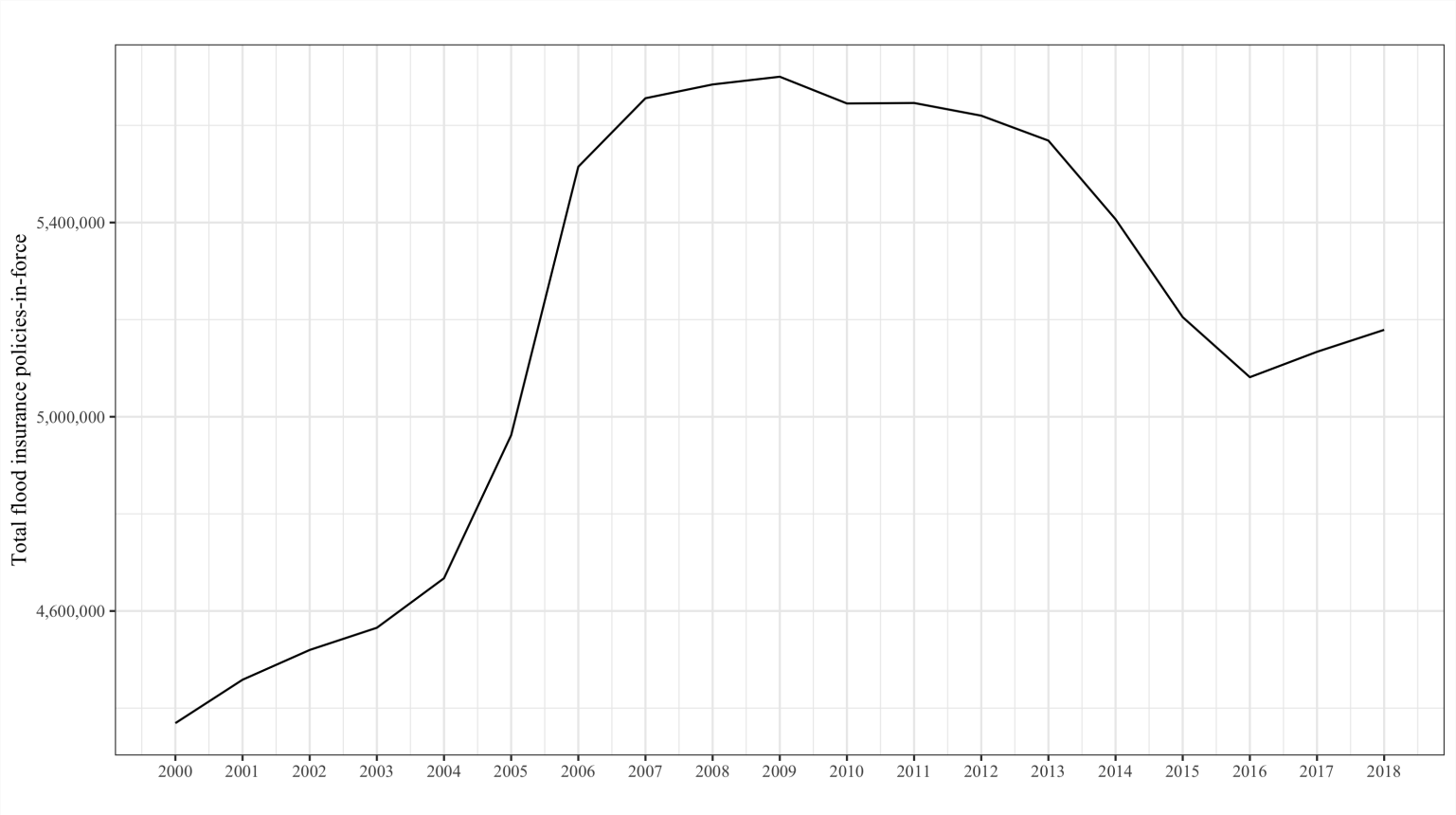
Note: this isn't actually a presentation. It's just some research thoughts about a questions that arose while presenting the Hurricane Sandy paper.

If you have any comments or are interested in collaborating on this project, I'd be happy to hear from you.

Since 2009, the number of flood insurance policies-in-force (delivered through FEMA's National Flood Insurance Program (NFIP)) has been declining.



Declining insurance purchases has consequences for

- people's ability to recover
- the taxpayer's burden via federal disaster aid
- financial viability of the NFIP (adverse selection).

So what's going on?

- People switching from public to private insurance - not a problem
- People dropping out of the market - this is a problem

What would cause people to drop out of the market?

One possibility is recent legislation increasing premiums for certain properties.

Vocabulary

- **Pre-FIRM**: describing a structure that was built before the community's first floodplain. Pre-FIRM policies have historically been subsidized for fairness reasons
- **Subsizied policies**: policies that pay less than the actuarially-fair, full risk rate
- **SFHA**: Special Flood Hazard Area. High flood risk area. Insurance is mandated on structures with mortgages (though compliance is far from perfect). 50% of policies are for properties inside the SFHA
- **SRLP**: Severe Repetitive Loss Property. Properties that have experienced large flood damages multiple times. SRLP properties make up 1% of properties but 25-30% of claims

Legislation from 2012 and 2014 made premiums for subsidized policies (pre-FIRM, in the SFHA) more expensive.

Each year the premium costs increase until they reflect their actuarially-fair, full risk rates.

Congress' motivation was to make it so pre-FIRM property owners fully internalized their flood risk and to better the financial position of the NFIP.

		pre-FIRM, SFHA			
		primary residence (1-4 units)		non-primary residence	business
		SRLP	nonSRLP		
July 6, 2012	Biggert-Waters signed into law				
January 1, 2013	Rate increases	+ 25% per year		+ 25% per year	+ 25% per year
March 21, 2014	HFIAA signed into law				
April 1, 2015	Rate increases + new yearly surcharges	+ 25$ per year	+ 5-18% per year + 25$ per year	+ 250$ per year	+ 250$ per year
2016 - present					

Additional: between January 2013 and July 2014, all pre-FIRM policies that were sold to new owners (property was sold) or coverage lapsed immediately saw an increase to full risk rates. With HFIAA, the requirement was reversed and payments refunded.

Did phasing out subsidies cause people to drop out of the market?

These slides look at:
residential policies (1-4 units) where it is the primary home

comparing:
pre-FIRM versus not-pre-FIRM

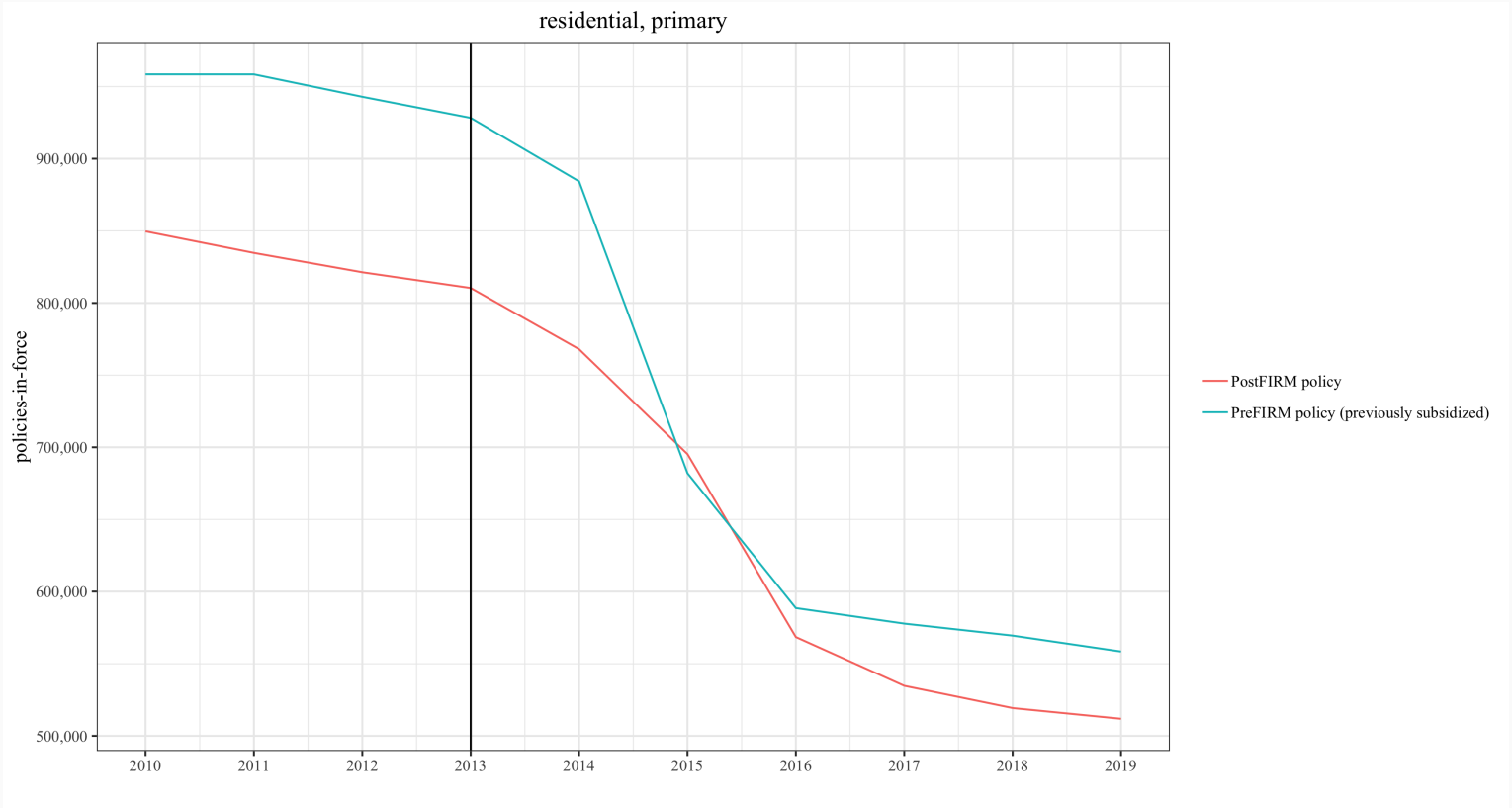
Data

- FEMA's redacted policy dataset (2009-2019)
- 50 million policies geo-located to a U.S. census tract
- many characteristics including whether the structure is pre-FIRM, whether the structure is located inside the SFHA and the occupancy type

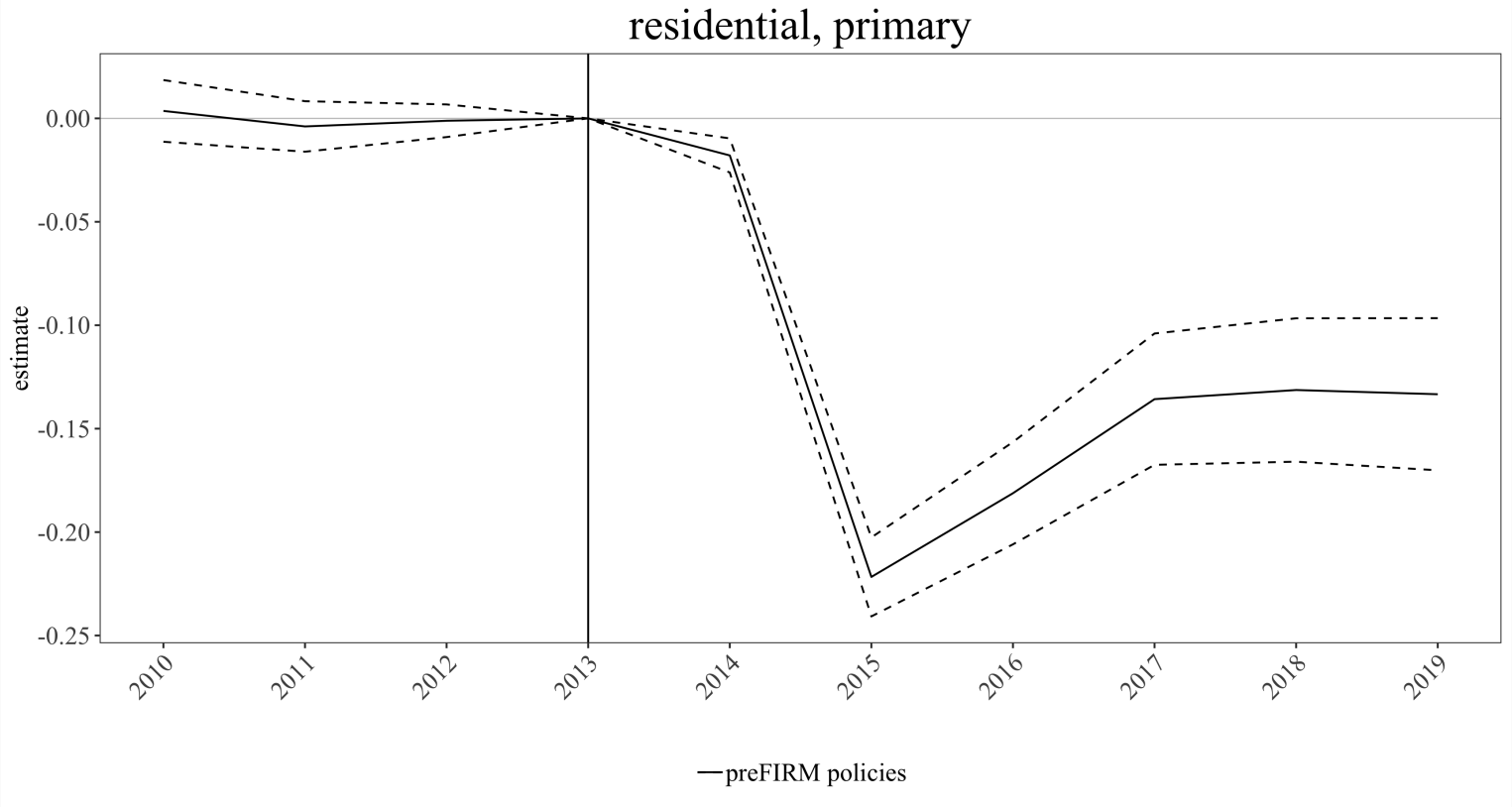
Difference-in-difference framework with leads and lags:

- outcome variable is the log-transformed number of insurance policies-in-force in census tract i, year t and FIRM status f (i.e. I'm stacking two censustract-by-year panels, one for pre-FIRM policies and one for post-FIRM policies)
- the variables of interest are indicator variables that track the year of an observation ($=1$) and whether the observation is recording pre-FIRM policies ($=1$)
- censustract-FIRMstatus and community-year fixed effects take care of (some, not all) of the time-invariant and -varying unobserved confounders (for now)
- estimates are clustered at the community-FIRMstatus level

The raw data give evidence that the hypothesis is true: increase the cost of insurance, fewer people will buy it.



The raw data is supported by the regression results.



- estimates are the perc. difference in insurance policies-in-force (after accounting for the confounders)
- dashed lines are the 99.9 confidence interval
- estimates are normalized to 2013 levels

There's still lots to be done.

The main question I am interested in concerns heterogeneous treatment effects.

Did phasing out subsidies have different effects on different groups of people?

based on income, race, disaster experience, geography, etc.

What impact did the legislation have on the NFIP's financial viability?

What impact did information timing and policy uncertainty have?

Also, why are policy types that are potentially not being impacted by premium increases also decreasing?

Is it increasing reliance on post-disaster federal aid? (freeriding)

Are all people being put increasingly in the SRLP category and having to pay higher premiums?

...these are also potential trend confounders in the above analysis.

To what extent are people just switching to the private market?

The private market is very small. In 2018, it only represented 3.5% to 4.5% of total residential policies.

Back of the envelope calculations suggest that the private market doesn't account for all of the dropouts from the public (NFIP) insurance market.