“Stimulating Housing Markets”
by Berger, Turner, and Zwick

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NBER SI Household Finance
You might not have cared about this topic

- *Existing* home sales don’t do a lot for GDP
  - (Big winner: Realtors®)
- Cash for Clunkers gives us the prior that this stuff is all intertemporal substitution
  - Aggregate time series seems to support that
  - Austan Goolsbee admitted to as much
- $8,000 off on a $200k purchase? 4% discount?
- Sales and prices seemed to stabilize before credit
- ...and yet this paper suggests your apathy would be misplaced!
Why you should care

• Need solutions in policy quiver/to prevent ineffective ideas from being repeated
• Housing equity important for aggregate demand through household balance sheets
  – also financial sector + system!
• Lessons about expectations, effective stimulus given we’re doing it via tax deduction, seems to have had long-run effects
• The authors’ data is easy on the eyes
Research Questions

1. Did FTHTC causally increase total sales?
   – Or just intertemporal substitution?
2. Did FTHTC bail out distressed owners?
   – Redistributive + aggregate demand motivations
3. Did FTHTC affect market prices?
   – Normally, don’t view a price as a policy aim, but important frictions in residential real estate make this important
4. Was this stimulative?
Research Design

• Construct an instrument for take-up of FTHTC: how first-time homebuyer-happy a given zip code was (“Exposure”)
  – Share of sales in 2000 that were to FTHBs
  – (This measure itself is incredible.)
• Validate first-stage (z predicts credits claimed)
• Run reduced-form event-study regressions of y on z to contrast high vs. low exposure places
Paper’s Takeaways

• FT Homebuyer Tax Credit claimed by 1.6m
• Total cost of $11 billion
• Causally increased sales by 400,000
• 25% of claimants wouldn’t have bought o.w.
• On average, credit increased prices by 0.77%
• Direct impact* on GDP of <$5 billion
• Could have hastened real estate reallocation and coordinated expectation reversal
1. Intertemporal Substitution

- FTHTC -

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<tr>
<th>Jan-06</th>
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<th>Jan-11</th>
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Quantity

Treatment Group

Control Group
High and low CARS exposure cities are the top and bottom quintile cities based on the ratio of qualifying clunkers as of the summer of 2008 to total auto purchases in 2004. The quintiles are formed using weights that ensure that each quintile includes the same number of total 2004 auto purchases. The top pane shows purchases by month scaled by 2008 average monthly purchases. The bottom panel shows the cumulative difference in the ratios between high and low CARS exposure cities.

Source: Mian & Sufi (2010)**
Aggregate time series looks like I.S.

Sales of existing homes

SEASONALLY ADJUSTED ANNUAL RATE
Aggregate time series looks like I.S.

Sales of existing homes

SEASONALLY ADJUSTED ANNUAL RATE
2. Persistent Effect

- FTHTC -
Empirical Evidence for Persistence

Source: Berger, Turner, Zwick (2016)
Replication Exercise

• Measure of # of credits claimed per CBSA
• Measure take-up as # credits / # households
• Event study of log monthly sales on take-up measure with CBSA FEs + month FEs
• Intuition: contrast sales over time of places that used the credit more or less intensely
• Not reduced form. RHS is endog. treatment
• Authors start in 2007, I’ll start 2006
Again, no evidence of reversal
3. Pent-up Demand Story

- Diff-in-diff requires control group with parallel trends.
- FT homebuyer areas/segments just countercyclical?
- FTHB areas cut back more during boom + aftermath?
- Pent-up demand story: high exposure areas due for a big recovery *anyway*, esp. when house prices stabilized and sidelined households no longer spooked
- Conceptually impt. for evaluation of stimulus policy
- But hard to identify: when would FTHB area differential debt overhang have unwound?
  - Need control group that *also* had pent-up demand
Pent-up Demand Story in Pictures

True Counterfactual

Control Group
Stealing from the Future Past

- True Counterfactual
- Control Group

Jan-06 Jan-07 Jan-08 Jan-09 Jan-10 Jan-11 Jan-12

Quantity
Pent-up Demand Story with Tax Credit

- True Counterfactual
- Control Group
- Treatment Group (Observed)

Jan-06 to Jan-12

Authors' start date
Pent-up Demand: Suggestive Evidence
Pent-up Demand: Suggestive Evidence
Pent-up Demand: Suggestive Evidence
Evidence Against Pent-up Demand

- **Pre-trends** analysis? Doesn’t go back very far
- **Placebo**? Shows evidence of pre-period decline
- **Age distributions**? Densities don’t show # changes
- **Starter homes**? Consistent with pent-up demand especially in those segments
- **Sharp timing**? Google Trends? REO sales? Still could be intertemporal substitution
- **Strong FHA effects**? Consistent with tight credit, FHA as stabilizer, and pent-up demand
Figure A.1: Placebo Coefficients

This figure presents a placebo test for whether seasonality accounts for the spikes in the home sales distribution. The test estimates month-by-month regressions and plots coefficients from the non-control specification in Figure 5, panel (b), emphasized with a bold line, along with equivalent regressions shifted backward in time to start in 2005, 2006, and 2007, and shifted forward to start in 2009 and 2010.

Source: Berger, Turner, Zwick (2016)
Little Things

• Mian & Sufi decile reduced-form counterfactual clunky. Why not run 2SLS on cumulative sales?
  – If instrument invalid, RF instead of 2SLS doesn’t solve any problems
• Seasonalizing by taking out CBSA x Month-of-Year FEs first is
  – conceptually unnecessary with control group,
  – non-standard in diff-in-diff,
  – and yet unlikely to matter.
  – Still, could benefit from footnote assuring the reader the results hold even without this.
• Footnote that normalization by 2007 sales doesn’t matter?
  – (in logs wouldn’t)
Conclusion

1. Beautiful data work + presentation
2. Preliminary results suggest positive effects on Q
3. Pent-up demand story seems consistent with all results
   – Silver lining: easy to check!
4. Subsidizing existing home sales definitely not a high-return GDP stimulus
   – But may have had hard-to-identify knock-on effects
   – (And may have done more for homeownership than the mortgage-interest tax deduction)
5. Points to expectations being important, little things can matter (consistent with Bailey et al., 2016)