How Quantitative Easing Works: Evidence on the Refinancing Channel

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Main questions

- ✓ Does quantitative easing work?
  - Through which channels do LSAPs work?
  - Does the type of asset bought matter?
- ✓ How does it affect the real economy?

Effectiveness of LSAP – Two channels

- ✓ Portfolio rebalancing/ Duration segmentation channel
  - Only duration drives effectiveness
- ✓ Narrow segmentation/Capital constraints channel
  - Both duration and type of asset drive effectiveness
- ✓ Important as informs on how to best structure LSAPs

Identification

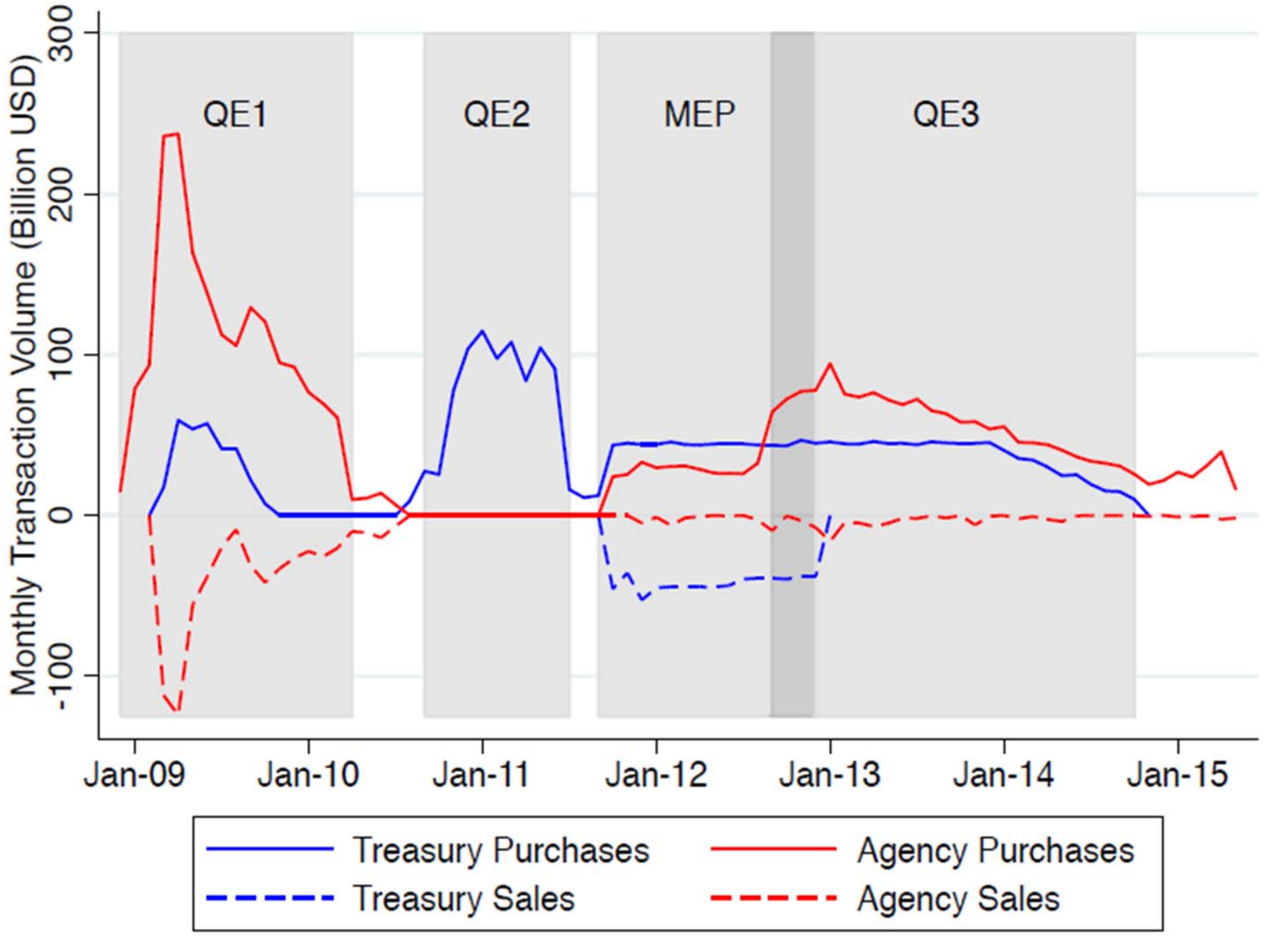
- ✓ Challenge: QE responds to current and expected shocks
- ✓ Authors exploit segmentation in US mortgage market
  - GSE mortgages
    - Only certain mortgages qualify (< 80 percent LTV + below limit)
    - Fed could only purchase these
  - Jumbo mortgages
    - Above limit (+ other conditions)

Identification

- ✓ Compare interest rates and refinancing volumes in both markets around each LSAP
  - If markets react similar (spillovers) points to portfolio rebalancing/ duration-segmentation
  - If different reaction (no-spillovers) points to narrow segmentation/capital constraints channel
- ✓ Exploit differences over time in intensity buying different assets

Different LSAPs

Figure 3. Federal Reserve Asset Purchases & Sales (Gross)



Main findings

- ✓ Evidence that the narrow segmentation channel is at work
  - GSE <u>interest rates</u> decreased more in Q1, but not Q2 and Q3, and increased more during tapering
  - GSE <u>refinancing</u> much larger during Q1, but not Q2 and Q3 and smaller during tapering
- ✓ So, type of asset purchased matters
- ✓ Important real effects:
  - Increase in consumption as households could reduce interest payments and cash-out equity
  - Estimated $76 billion

Treatment vs control group

- ✓ Compare GSE (treatment) with Jumbo (control)
- ✓ Key that two groups do not differ on (un)observables other than impact of QE
- ✓ But important differences between GSE and Jumbo loans that can impact demand for refinancing
  - Type of borrower: i.e. jumbo more wealthy, financially educated, more likely take financial risk
    - Might react differently to changing macro-economic conditions
  - Type of mortgages: ARM vs fixed term
    - Fixed term stronger incentive to refinance

Treatment vs control group

ARM Share of Originations across Mortgage Submarkets

Panel A: All Mortgages

	Volume Weighted						Value Weighted					
	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
Government	9.5	4.6	3.5	2.7	1.9	4.4	10.1	5.2	4.0	3.1	2.3	4.9
Nonprime	52.5	42.3	12.9	3.6	0.8	1.1	59.9	49.2	19.1	6.7	3.4	2.6
Prime conforming	30.3	27.7	13.7	6.2	2.2	3.7	34.4	33.1	17.0	8.3	2.7	4.8
Prime jumbo	68.7	68.9	51.4	52.8	43.8	37.3	70.4	70.6	55.5	58.9	51.5	43.3
Total	38.5	33.6	15.6	5.8	2.3	4.0	48.9	44.6	25.6	10.5	4.0	6.1

- ✓ GSE segment much higher share fixed term
- ✓ To what extent is this driving the QE1 result?
- ✓ The share of ARM in Jumbo mortgages drops over time, can this partly explain the insignificant differential during QE2 and QE3?

Health of banking sector

- ✓ Implicit assumption that all periods are same, except for LSAP
- ✓ QE1 also TARP → health banking system improved over time
- ✓ How much of the QE1 result was driven by problems banking system?
  - No securitization in jumbo market, banks bear default risk
  - GSE less risky even without QE, so expect banks more willing to refinance these loans
- ✓ Interact Jumbo with average health of banking system, but does not control for differences in bank health across counties (i.e. do not fully absorb local shocks to credit supply)
  - ✓ Link mortgages to the bank?
  - ✓ Share of ”healthy” banks in county interacted with Jumbo

Puzzling results QE3 and Tapering

- ✓ No differential impact QE3
  - Also purchase of both MBS and Treasury
  - Authors: banking sector was less constraint, so more spillover possible
- ✓ But, (opposite) differential impact tapering
  - Suggest narrow segmentation
  - But not much difference in health banking sector
- ✓ What can square these (seemingly) contradicting results?
  - Expectations?

Does QE increase inequality?

Figure 8. State-level Refinancing Activity vs. Lagged HPI and GDP Growth

Panel I. Refinancing Activity and House-Price Growth

Does QE increase inequality?

- ✓ Authors: graph suggests that QE1 did not reach the areas that needed it the most
- ✓ Expect refinancing highest in areas with house price boom and hard to determine how QE affected the slope
- ✓ Don’t know the counterfactual, correlation might have been stronger without QE
- ✓ If so, QE would have reduced inequality
- ✓ But, results do indicate importance of complementary policy

Conclusion

- ✓ Great paper on a very relevant policy question
- ✓ Pushes the frontier on how to measure impact of QE
- ✓ Push bit further on observable differences between Jumbo and GSE mortgages and impact of bank health

THANK YOU