How Quantitative Easing Works: Evidence on the Refinancing Channel

Marco Di Maggio, Amir Kermani & Christopher Palmer

Discussion by Neeltje van Horen

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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
    o Only certain mortgages qualify (< 80 percent LTV + below limit)
    o Fed could only purchase these
  ▪ Jumbo mortgages
    o 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)

- QE1
- QE2
- MEP
- QE3

Monthly Transaction Volume (Billion USD)

- Treasury Purchases
- Agency Purchases
- Treasury Sales
- Agency Sales
Main findings

✓ Evidence that the narrow segmentation channel is at work
  ▪ GSE interest rates decreased more in Q1, but not Q2 and Q3, and increased more during tapering
  ▪ GSE refinancing 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

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<td>Prime jumbo</td>
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<td>51.4</td>
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<td>43.8</td>
<td>37.3</td>
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<td>55.5</td>
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<td><strong>Total</strong></td>
<td>38.5</td>
<td>33.6</td>
<td>15.6</td>
<td>5.8</td>
<td>2.3</td>
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✓ 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?
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