# QUANTITATIVE EASING AND FINANCIAL STABILITY

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CENTRAL BANK OF CHILE, NOVEMBER 2015

## **NARRATIVE OF THE CRISIS**

- Pre-crisis, a shortage of safe assets
- Excessive incentives of financial intermediaries to buy/invest in longterm assets financed with short-term paper
- Financial intermediaries do not internalize the full social cost of liquidating long-term claims in the event of a crisis -> This is financial instability
- The crisis hits, lots of fire sales
  - World would have been much safer if Lehman had not financed itself using overnight paper
- The economy crumbles, target short rate drops below zero
- Central bank embarks on quantitative easing in an effort to stimulate the economy
- Paper asks whether, in this narrative, QE increases or reduces future financial stability
  - All of this is done in an impressive general equilibrium macro model in the form for which Woodford is famous
  - The paper answers a number of other questions along the way, such as how QE compares with taxes/subsidies on short-term issuance
  - I basically agree with the main conclusions and logic.
    - The question is empirically whether there are other channels by which QE may impact financial stability

### **FINANCIAL STABILITY**

- Private-sector banks who can also engage in money-creation
- Banks want to issue short-term, safe debt because it is cheap
  - Caballero & Krishnamurthy '08: Responding to a global shortage, US financial sector tried to manufacture "riskless" assets precrisis
  - Gorton '10, Gorton & Metrick '09: Money creation by unregulated shadow banking system
- Banking sector response to cheapness may be socially excessive
  - Stein '12: Excessive private money creation makes the system too vulnerable to crises
  - Short-term debt leads to costly fire sales in bad states, since banks must liquidate assets to repay
  - Private banks issue too much short-term debt because they do not fully internalize these fire-sale costs

### **A TAXONOMY OF RISK PREMIA**



Maturity

## **LIQUIDITY PREMIUM**

2002

#### From Greenwood, Hanson, Rudolph, Summers (2015)

200 1-month OIS -150 1-month Tbill sdq GHS have another 100 measure 50 o huma land w

2008

2010

2012

2014

Liquidity premium on short-term T-bills, Basis points

2006

2004

#### **TRADITIONAL DEBT MANAGEMENT**

#### Term Premium on 10-Year Zero-Coupon Treasuries (1990 to 2014)



# QE

- Increase the supply of reserves/Tbills
- Reduce the net supply of long-term assets (LT Treasuries)
- Reduce safety premium
- Reduces desire of private sector to do maturity transformation
- Also reduces yields on long-term assets (and thus long-term financing). This additionally increases incentives to issue long
- Some tentative evidence in Stein (2012) that firms are doing exactly this
- Empirical analysis here is somewhat complicated by the fact that the government is simultaneously issuing lots more longterm debt

# **IMPACT OF QE**



Maturity

## **COMMENTS ON THEORY 1**

- This is a model of a shortage only short term safe assets used for transactions reasons
- The preferred habitat would suggest that a shortage of long term safe assets matters too.
  - If QE is good for financial stability in that it mitigates the shortage of short term safe assets [i.e. supply of bank reserves goes up], shouldn't it also have adverse effects on financial stability by reducing the supply of long term safe assets [supply of long term treasuries goes down]?
- Evidence: The QE period has been concurrent with a junk bond issuance boom outside of the banking sector (coincidence?), so there may be "reaching for yield" related financial stability issues
  - This would be coming from the mix of projects being financed, rather than their capital structure per se
- Related work: Stein (various speeches); Diamond (2015)

## **COMMENTS ON THEORY 2 & 3**

- The paper assumes that long term bonds cannot be used as collateral for money creation
  - Is this important? The shadow banking system actually creates money this way
- Might be helpful to explain what the model adds beyond the money in the utility function formulation in Stein (2012)



Liquidity Premium

# FINANCIAL STABILITY AND QE: OTHER CHANNELS & COMPLICATIONS

# FED & TREASURY PULLING IN OPPOSITE DIRECTIONS

10-year duration equivalents, Change since Dec. 31, 2007 (% of GDP)



# **DEBT MANAGEMENT CONFLICTS**

- Expansionary monetary policy at ZLB
  - Extend average duration to mitigate fiscal risk (Treasury)
  - Shorten average duration to bolster aggregate demand (Fed)
  - Fed and Treasury in direct conflict over objectives



### **LEVERAGE AND BELIEFS**

- Many market observers believe that QE not only supports the *level* of asset prices, but also the implied and future *volatility* of asset prices
- After a period of low volatility, financial market participants may take on more leverage
- I suspect this is an important part of QE that is difficult to model using this setup
- Hard to collect evidence on this, but the VIX is suggestive
  - VIX falls a lot on QE announcements, and even more in the weeks after announcements
  - Suggestive of a risk taking channel



Source: Greenwood, Hanson, Liao (2015)

## **CAPITAL STRUCTURE ARBITRAGE**

- Stein (2012b) suggests that the same logic that says that QE may be good for financial stability, may also imply that QE is not as effective as imagined
  - Because it changes relative cost of short vs. long-term financing, it encourages firms to swap out forms of financing
  - This is not exactly "aggregate demand"

## **OPEN QUESTIONS: DATA**

- It may be difficult to ultimately identify the exact channel through which QE works
  - Krishnamurthy and Vissing-Jorgensen try to do exactly this in their analysis of QE
- We suspect this is complicated because
  - The impact on asset prices can vary by horizon
  - Qe is offset by government debt expansion
  - At long horizons, endogeneity looms large
- The paper is truly excellent at understanding one particular channel of QE, but we will ultimately need more data to understand which channel is important