

# **Session 3:**

## **Identifying and assessing risks in the shadow banking system**

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Juliane Begenau (Stanford GSB & NBER)

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# What is Shadow Banking?

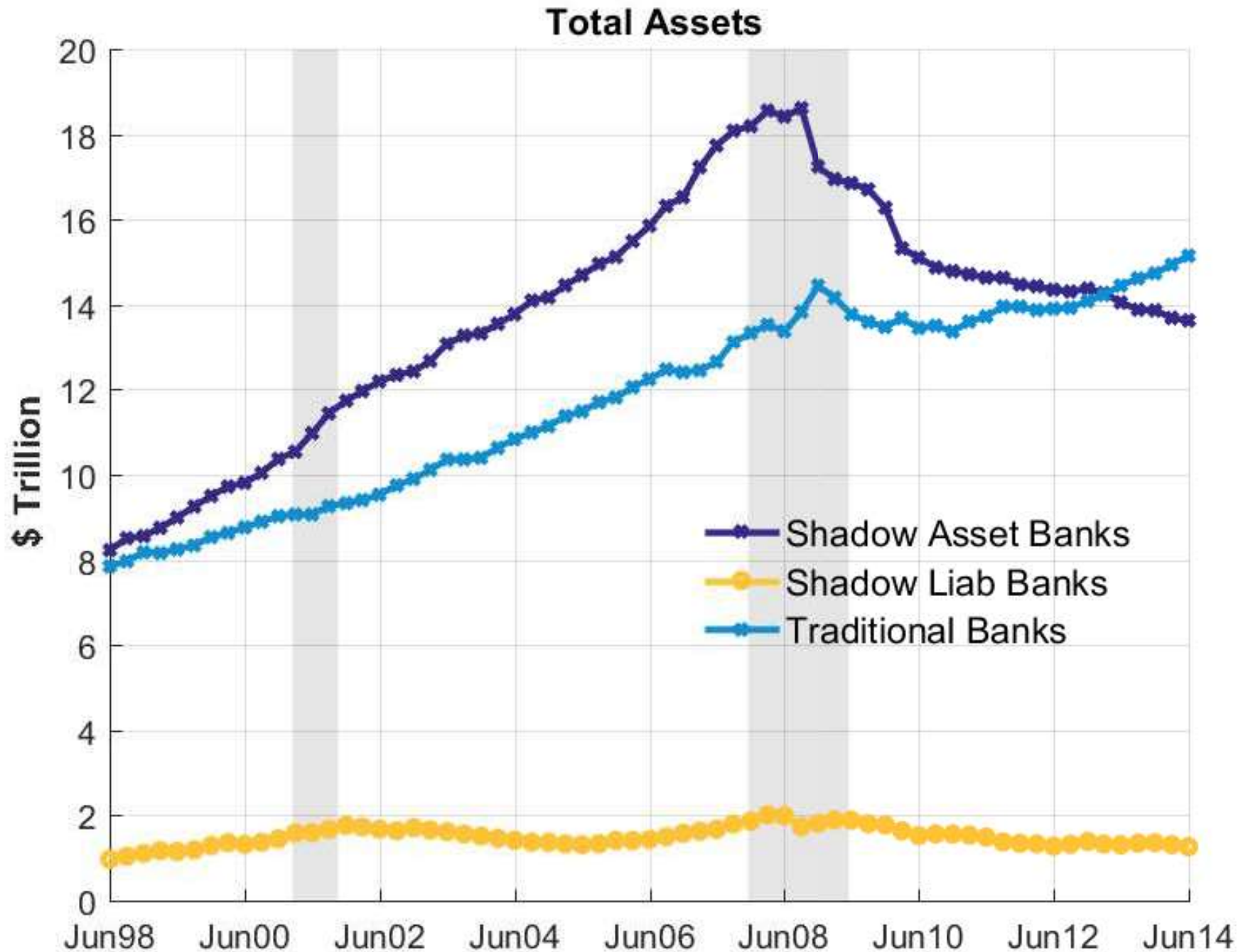
- **Shadow banks**

- “Shadow” key functions of traditional banks, e.g. lending and liquidity provision
- What causes these functions to be performed outside the balance sheet of traditional banks?
  - Technological Change → cheaper ways to deliver banking often embraced by new entrants (aka FinTech)
  - Regulatory arbitrage across industries → substitution away from non-traditional banks
  - Regulatory arbitrage within traditional banks → substitution toward off-balance sheet activity

- **Issue**

- Need a functional definition of banks and shadow banks
- No universally agreed upon definition

# Gross Asset Positions - U.S. Flow of Funds Based Definition



# Why does the Definition Matter?

- Matters for measurement
- Matters for models, particular with policy focus
  - i.e. which firm characteristics and frictions in the environment do we want to focus on?
- Opportunities in some of these forms of shadow banking

- Begenau & Landvoigt 2017
  - model with a role for shadow banks and commercial banks
  - presences of shadow banks turns out to be rather benign
- FinTech Opportunities

- Financial System:  
regulated (commercial) banks & unregulated (shadow) banks
  - provide access to “intermediated” assets, e.g. long term credit
  - balance sheet: risky & illiquid assets funded with money-like liabilities
- Effects of financial regulation on a subset of banks?
  - Does tighter regulation cause shift to shadow banks?
  - Does it make financial system more risky?
- Need quantitative general equilibrium analysis
- **Note:**
  - Study regulatory arbitrage **across** industries

# Paper Overview

- Model
  - comm. banks and shadow banks provide liquidity services valued by household (MIU)
  - both have limited liability & costly bankruptcies
  - comm. banks: deposit insurance, subject to capital regulation
  - shadow banks: risky debt, no regulation
- Calibration to U.S. data matches
  - aggregate liquidity premium of safe debt
  - size of shadow banking sector
  - default risk of both types of banks
  - greater fragility of shadow banks (runs)
- Tighter capital requirement
  - causes shift to shadow sector
  - but no increase in risk taking of shadow banks
  - trade-off between financial fragility & liquidity provision

# Intuition // Why does more shadow bank activity NOT lead to more financial fragility?

- Premise
  - Sbanks compete with traditional banks over liquidity provision, fairly substitutable (except for crises)
  - Sbanks debt pricing sensitive to default probability
- Higher capital req. leads to more scarcity in liquidity provision (i.e. comm banks cut back on deposits)
  - Increases bond prices // funding is cheaper so profits go up
  - Incentivizes Sbanks to fill the gap // provide more liquidity
- Sbank can issue more debt  $D$  by
  - (1) increasing  $D$  relative to assets  $A$  // higher leverage, implying more risk and lower bond prices
  - (2) increasing  $D$  and  $A$  in proportion // keeping leverage constant - not more risk
- Quantitatively (2) occurs as long as
  - households care more about the quantity of liquidity than its composition → increase in profitability reduces risk-taking incentives

# Main Quantitative Result: Static Capital Requirement maximized at 15% // No massive increase in Sbank risk-taking

	$\theta = 10\%$		$\theta = 15\%$		$\theta = 20\%$	
	mean	stdev	mean	stdev	mean	stdev
Shadow Bank Share	0.310	0.031	0.350	0.037	0.388	0.040
Capital stock	2.100	0.027	2.099	0.030	2.097	0.026
DWL S ( $\times 10^2$ )	0.026	0.005	0.030	0.006	0.033	0.006
DWL C ( $\times 10^2$ )	0.152	0.035	0.020	0.005	0.002	0.001
Liquidity	2.183	0.043	2.101	0.046	2.024	0.043
Welfare			0.08%		-0.01%	

# Take Away

- Higher capital req. causing a shift towards shadow banks do not have to lead to more financial fragility in response
- Robust to various specifications (return technology, shock structure, utility specification of agents)
- Sbanks were modeled fragile (e.g. runs and imperfect random bailouts)
- What we do not model
  - We do not model shadow banks as off-balance sheet vehicles for regulatory arbitrage by traditional banks
  - We do not model strategic interactions between traditional banks and shadow entities
  - Efficiency opportunities that arise when switching to non-banks

# FinTech Opportunities

- Financial intermediation performed by incumbents is costly
  - Philippon AER 2015 measures costs at around 2% of assets
- FinTech challenges the notion of what makes banks special
  - cheap funding:
    - U.S. since 2008 funding at portfolio margin is FedFunds rate plus 25 bps
    - e.g. Interactive Brokers offers debit cards with credit feature at 2.66% APR max instead of 18-28% APR
  - credit provision:
    - LendingClub, Prosper, OnDeck
  - payments:
    - Paypal, Venmo, ...though still use the plumbing of banks

# Summary of Points

- Common definition of shadow banking needed to
  - collect data and measure shadow banking activity
  - properly frame issues relevant for policy
- Not all forms of shadow banking (using the wider definition) are necessarily a problem