

Discussion of:

*A Model of the Federal Funds Market:  
Yesterday, Today, and Tomorrow*

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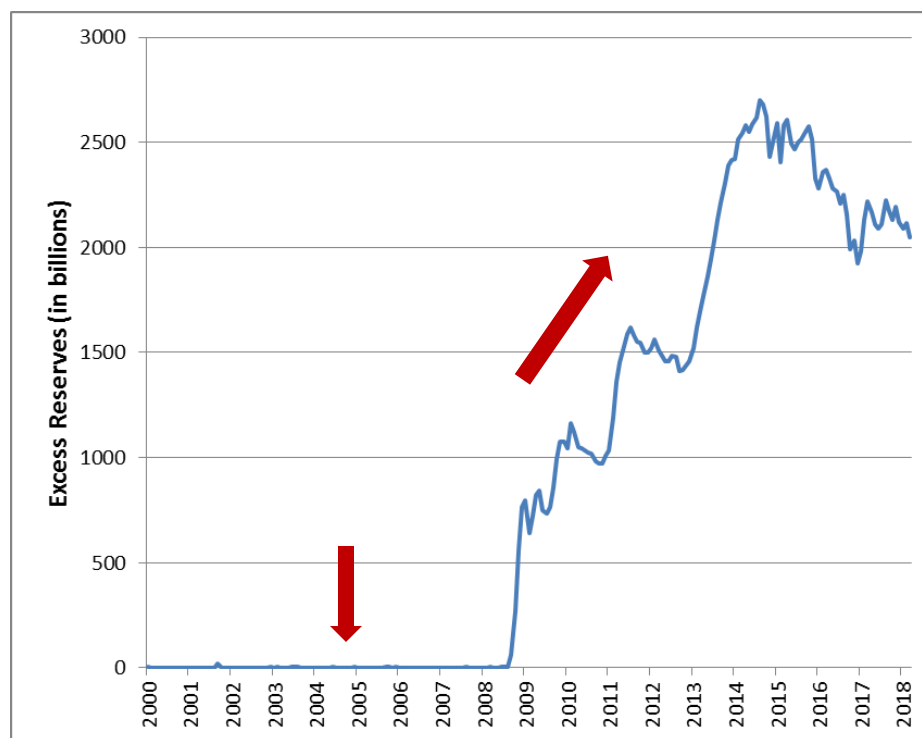
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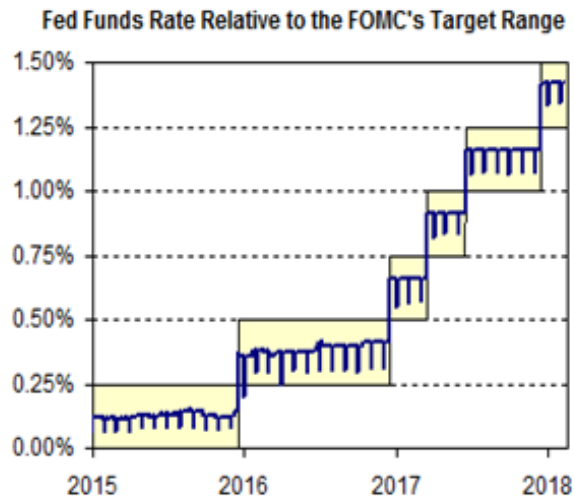
# Background

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- ▶ Pre-2008, the Fed's procedures for implementing monetary policy required excess reserves to be very small
  - ▶ ~1-2 billion dollars
- ▶ Scarcity of reserves ⇒  
    fed funds rate  $\gg$  IOR  
    (zero)
- ▶ LSAPs increased excess reserves dramatically
- ▶ ... which forced the Fed to change procedures



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- ▶ Currently, fed funds rate lies between:



the "floor" created by the interest rate on reserves

the "foundation" created by the ONRRP facility

in the "basement"

- ▶ If Fed's balance sheet continues to decrease in size ...
  - ▶ reserves will again become scarce
  - ▶ the federal funds rate will climb out of the basement
  - ▶ forcing the Fed to change procedures again

# The question: When?

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Two key mileposts:

(1) fed funds rate  $\geq$  interest on reserves

- ▶ out of the basement, onto the floor
- ▶ Fed will need to change how it communicates policy decisions
  - ▶ that is, change the way target rate/range is stated

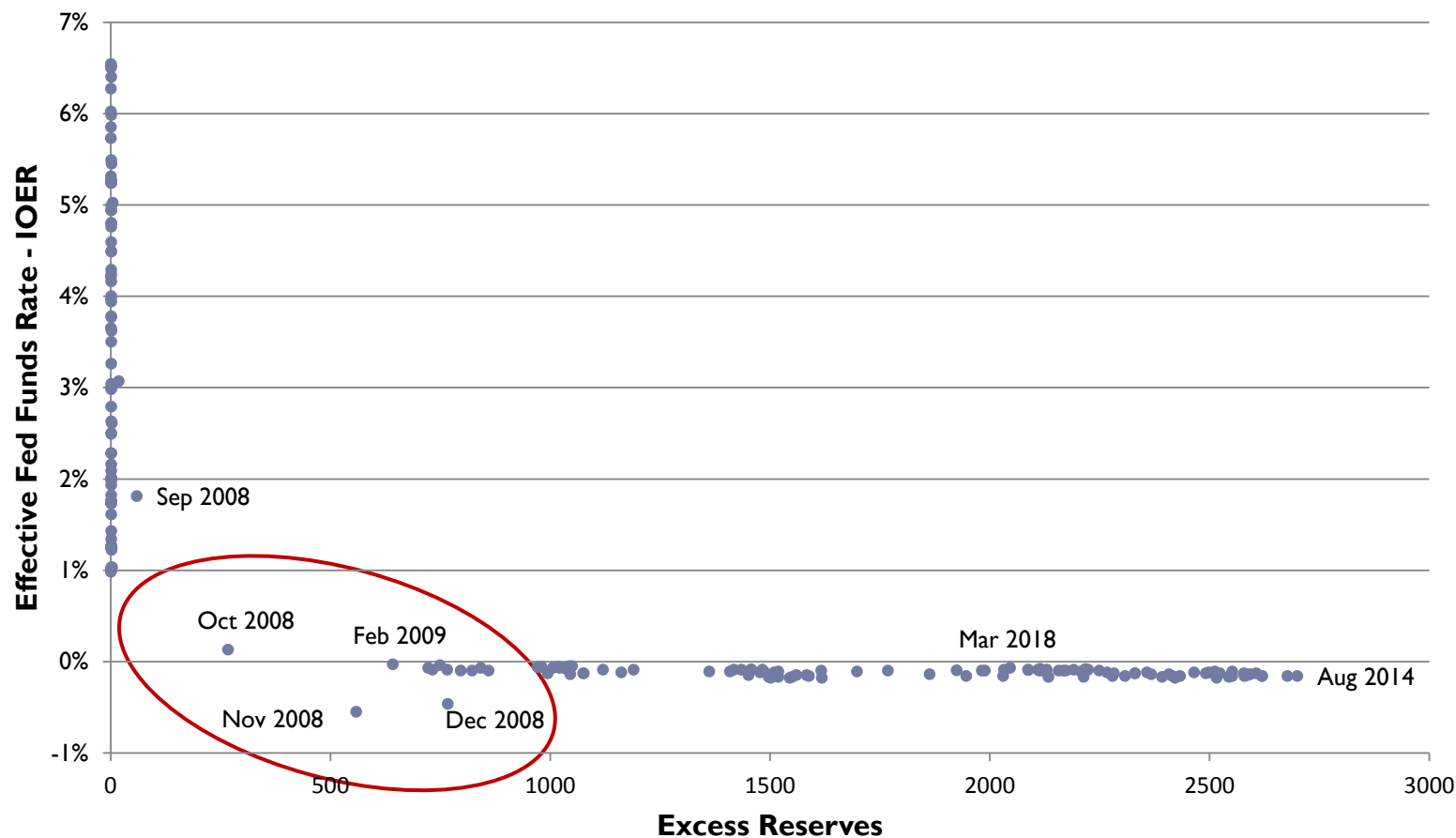
(2) fed funds rate  $\gg$  interest on reserves

- ▶ lift off from the floor, into a corridor system
- ▶ additional changes in communication; plus in many procedures

Q: At what level of excess reserves will each milepost be hit?

- ▶ note: these are *quantitative* questions

# The data



- ▶ Few data points between \$2b and \$1t in excess reserves
  - ▶ and these are from a **very** unusual period ⇒ need theory to guide us

# The theory

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- ▶ The paper presents a model of the fed funds market that:
  - ▶ allows for heterogeneity and captures key institutional features
    - ▶ GSEs, balance sheet costs, etc.
  - ▶ but remains very tractable
- ▶ Input: joint distribution of excess reserves, balance sheet costs
  - ▶ this is (roughly) observable
- ▶ Output: trade volume, distribution of trade sizes, rates
  - ▶ also (somewhat) observable
- ▶ Model is calibrated and used to answer the two questions

# The results

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- ▶ Calibrated model fits data from current regime well
  - ▶ also fits the pre-crisis period to some degree
- ▶ Key issue for addressing the two questions:
  - ▶ how will the distribution of excess reserves across banks change as total excess reserves decrease?
- ▶ Paper constructs a baseline scenario and two extremes
- ▶ Answers:
  - (1) out of the basement: \$550 billion - \$1.1 trillion
  - (2) lift off from floor: \$400 billion - \$900 billion
    - ▶ these are *quantitative* answers, but with wide “confidence” bands

# Comments



# 1) The challenge

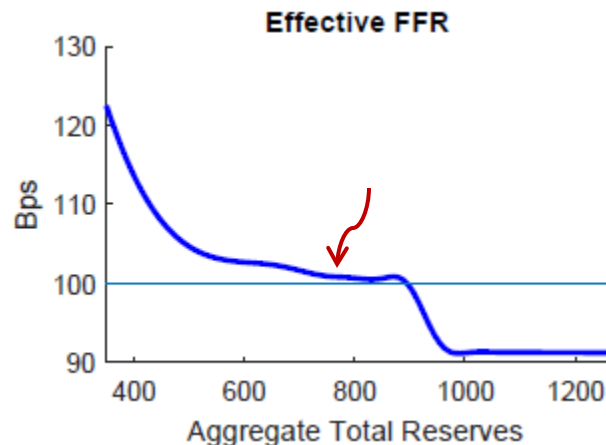
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- ▶ Emphasize challenge the authors take on here
  - ▶ attempt to forecast outcomes of a somewhat peculiar market ...
  - ▶ ... in a radically changed environment
- ▶ Others have given answers to the two questions based on ...
  - ▶ ... gut feelings?
- ▶ Paper shows how a serious economic model can be developed
  - ▶ that provides quantitatively meaningful answers
- ▶ Nice illustration of the power of models with “fragmented financial markets”

## 2) What I learned

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- ▶ My prior belief: ~\$200 billion (or perhaps less)
  - ▶ based on ... gut feeling?
- ▶ Test: Did the paper change my mind? Yes, in two respects:
- ▶ First: the fed funds rate is sensitive to composition effects
  - ▶ only need a small amount of lending by banks to move the rate
  - ⇒ exit from the basement is probably much closer than I thought
- ▶ Second: liftoff from floor may occur well after exit from basement
  - ▶ even when lending by banks dominates the market rate
  - ▶ excess reserves can still be abundant



### 3) Where I am less convinced

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- ▶ When will the fed funds rate lift off the floor created by IOR?
- ▶ When it does  $\Rightarrow$  strong incentive to adjust balance sheets
  - ▶ reserves become expensive relative to alternative liquid assets
- ▶ Paper offers three scenarios for evolution of reserve distribution
  - ▶ but approach is fairly mechanical; does not focus on *incentives*
- ▶ When banks respond to these incentives:
  - ▶ distribution may well change more than in the “extreme” scenario
  - $\Rightarrow$  liftoff from floor might occur much later than paper suggests
    - ▶ Kim, Martin, and Nosal (2018) argue along these lines
- ▶ Forecasting evolution of this distribution is very difficult
  - ▶ another place where we need *theory* to guide us

## 4) A suggestion

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- ▶ Paper focuses on the effective federal funds rate (EFFR)
  - ▶ which makes sense – it is the Fed’s operating target
- ▶ But it also highlights the peculiarities of this rate
  - ▶ a crude measure of the stance of monetary policy
- ▶ Would like to measure: the marginal cost of funds (MCF)
  - ▶ or, banks’ opportunity cost of lending
  - ▶ includes shadow value of funds for those banks not in the market
- ▶ Difficult to measure in practice, but ... easy in the model
- ▶ Perhaps: report both EFFR and MCF in your exercises
  - ▶ is EFFR more “reliable” as reserves decrease? If so, when?