

# AMPLE RESERVES FOR WHOM?

OGURI AND PIZZIMENTI

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Discussion

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## THIS PAPER

- Question: under an ample-reserves regime, how far can the Fed shrink its balance sheet without losing rate control?
- The paper shifts attention from the asset side of the Fed balance sheet to the liability side:
  - ▶ reserves are large
  - ▶ reserve demand is heterogeneous
  - ▶ foreign branches hold a large share of marginal reserves

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- The paper shifts attention from the asset side of the Fed balance sheet to the liability side:
  - ▶ reserves are large
  - ▶ reserve demand is heterogeneous
  - ▶ foreign branches hold a large share of marginal reserves
- Main empirical claim:

Foreign banks absorb reserves during QE, but  
do not shed them symmetrically during QT.
- Model: uncertainty about the marginal reserve-absorption margin raises the precautionary reserve buffer

## PAPER IN ONE EQUATION

- Locally, market clearing says that price movements along bank-type demand curves absorb supply shifts and demand shifts:

$$\underbrace{\sum_j \eta_{jt} \Delta p_t}_{\text{movement along demand}} = - \underbrace{\Delta S_t}_{\text{supply shift}} + \underbrace{\sum_j \epsilon_{jt}}_{\text{demand shifts}} \Rightarrow \Delta p_t = \left( \sum_j \eta_{jt} \right)^{-1} \left( -\Delta S_t + \sum_j \epsilon_{jt} \right).$$

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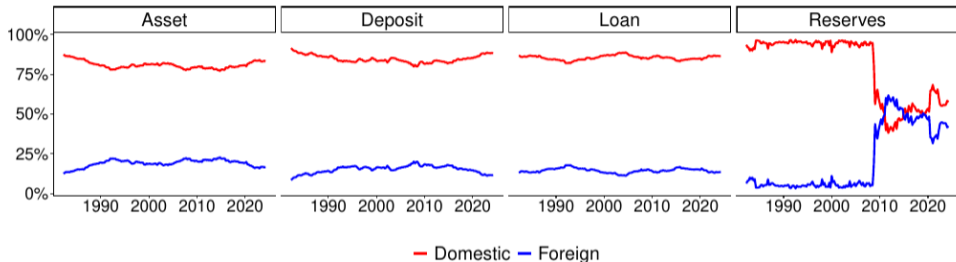
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- Here  $\eta_{jt}$  is bank type  $j$ 's local semi-elasticity, and  $\epsilon_{jt}$  is its outward demand shift
- Paper interpretation:

$S_t$  = reserve supply,  $p_t = i_t^F - i_t^R$  = money-market rate (FFR/SOFR) minus IOR,  
 $j \in \{\text{foreign, large domestic, small domestic}\}$  banks.

- Contribution: which bank types drive  $\eta_{jt}$  across monetary-policy regimes?

## FACT: FOREIGN BANKS ARE SMALL OTHER THAN IN RESERVES



- Foreign banks are roughly 10–25% of assets, deposits, and loans
- Their reserve share is larger after the GFC, at times around one half of aggregate reserves

Source: Oguri and Pizzimenti (2026), Figure 3.

# FIRST STAGE: WEEKLY TGA SHOCKS MOVE SPREADS DURING QE

	Full	QE	QT
<b>Panel A: <math>\Delta(FFR - IOR)</math></b>			
$\Delta TGA$	0.3018** (0.1204)	0.7513*** (0.2265)	0.0609 (0.1328)
Observations	877	405	472
$R^2$	0.291	0.506	0.058
<b>Panel B: <math>\Delta(SOFR - IOR)</math></b>			
$\Delta TGA$	1.4109*** (0.5055)	1.9114*** (0.5672)	1.0993 (0.7046)
Observations	875	404	471
$R^2$	0.048	0.149	0.023
FOMC FE, $\Delta ONRRP$	Yes	Yes	Yes

Coefficients are bps per \$100bn increase in TGA; columns are Table 6 (3)–(5). Source: recreated from Oguri and Pizzimenti (2026), Table 6.

# FOREIGN BANKS ABSORB $\Delta S_t$ DURING QE

	QE			QT		
	All	Foreign	Domestic	All	Foreign	Domestic
<b>Panel A: <math>\Delta(\widehat{FFR} - IOR)</math></b>						
Coefficient	-0.0483*** (0.0134)	-0.0956*** (0.0229)	-0.0266** (0.0120)	-0.4439 (0.9666)	-0.4042 (0.8860)	-0.4623 (1.0065)
Observations	405	405	405	472	472	472
First-stage $F$	19.80	19.80	19.80	0.17	0.17	0.17
<b>Panel B: <math>\Delta(\widehat{SOFR} - IOR)</math></b>						
Coefficient	-0.0190*** (0.0052)	-0.0376*** (0.0087)	-0.0105** (0.0049)	-0.0246 (0.0155)	-0.0225* (0.0134)	-0.0255 (0.0171)
Observations	404	404	404	471	471	471
First-stage $F$	16.30	16.30	16.30	2.65	2.65	2.65

Dependent variable is weekly  $\Delta \log(\text{reserves})$ . Source: recreated from Oguri and Pizzimenti (2026), Table 8.

**Bottom line: during QE, foreign banks are the marginal reserve holders, so reserve-demand elasticity is regime-dependent and cannot be read from aggregate reserves alone.**

## FOUR COMMENTS

### 1 How strong is the TGA exclusion restriction?

- ▶ Clean IV requires the payer bank's desired reserves not to fall with the payment drain

### 2 Why does heterogeneity matter exactly?

- ▶ Heterogeneity may be useful for forecasting aggregate elasticity
- ▶ It is not automatically a separate policy object

### 3 Weak QT first stage means flat inverse demand, not inelastic direct demand

- ▶ This matters for interpreting the QT evidence

### 4 Reserves and QE are jointly determined in equilibrium

- ▶ The paper starts from a liability-side gap, but the asset side cannot disappear

## COMMENT 1: TGA MECHANISM

- Example: a taxpayer unexpectedly pays \$15 from an account at Bank A.

Federal Reserve balance sheet, stylized		
		Before
<b>Assets</b>	Treasuries, repos, loans	100
<b>Liabilities</b>	Bank reserves $S_t$	70
	TGA	20
	ON RRP, currency, other	10

**Bank reserves:** deposits that banks hold at the Fed.

**TGA:** the Treasury's deposit account at the Fed.

## COMMENT 1: TGA MECHANISM

- Settlement moves Fed liabilities: Bank A reserves fall and the TGA rises.

<b>Federal Reserve balance sheet, stylized</b>			
		<b>Before</b>	<b>After tax shock</b>
<b>Assets</b>	Treasuries, repos, loans	100	100
<b>Liabilities</b>	Bank reserves $S_t$	70	55 (-15)
	TGA	20	35 (+15)
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**Decomposition:** let  $x$  be the payment and let  $\lambda$  be the fraction of the mechanical reserve drain matched by an inward demand shock at Bank A.

$$\underbrace{\Delta S_t = -x}_{\text{aggregate reserve drain}}, \quad \underbrace{\epsilon_{At} = -\lambda x}_{\text{payer-bank demand shock}}, \quad \underbrace{-\Delta S_t + \epsilon_{At} = (1 - \lambda)x}_{\text{must move spreads}}.$$

The IV is clean only if the payment drains reserves without shifting  $\epsilon_{At}$ .

## COMMENT 1: EXCLUSION IS ABOUT $\lambda = 0$

A TGA increase mechanically drains aggregate reserves. Exclusion asks whether the same payment also creates an inward payer-bank demand shock.

$$\underbrace{-\Delta S_t}_{\text{mechanical drain}} + \underbrace{\epsilon_{At}}_{\text{payer-bank demand shock}} = \underbrace{(1 - \lambda)x}_{\text{price-clearing shock}} .$$

$\lambda$	First stage	Exclusion restriction
0	Full drain moves spreads	Clean IV: Bank A wants to replace the full loss after reserve loss (pre-equilibrium adjustment)
1	No net shock to absorb	Relevance should vanish
$0 < \lambda < 1$	Residual drain moves spreads	Relevance survives, but $\Delta TGA_t$ partly shifts $\epsilon_{At} < 0$

**Institutional question:** does the payment only drain reserves, or also shift  $\epsilon_{At}$ ?

## COMMENT 2: WHY DO WE CARE ABOUT HETEROGENEITY?

- Reserve-market version:  $S_t$  is reserve supply and  $p_t = i_t^F - i_t^R$

$$\Delta p_t = \underbrace{\left( \sum_j \eta_{jt} \right)^{-1}}_{\text{inverse aggregate reserve elasticity}} (-\Delta S_t).$$

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- Beyond knowing the aggregate reserve elasticity  $\sum_j \eta_{jt}$ , what do we learn from the foreign/domestic split?
- Time-variation clearly matters, but why is the heterogeneity itself important and interesting?
  - ▶ The model appears aggregatable, too: aggregate uncertainty about reserve demand drives precautionary motives

## COMMENT 2: HETEROGENEITY MATTERS FOR COUNTERFACTUALS

- Allowing for this heterogeneity matters for policy counterfactuals
  - ▶ This does not appear to be something the paper currently evaluates
- This is a Market Macrostructure question: who are the key players, what constraints shape their elasticities, and what counterfactuals follow?

Haddad–Muir (2025), *Market Macrostructure: Institutions and Asset Prices*

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- Example: what if regulation became stricter for domestic banks?

$$\eta_t^{agg} = \sum_j \eta_{jt}, \quad \Delta \eta_t^{agg} = \Delta \eta_{D,t}.$$

- The policy counterfactual works through the affected component  $\eta_{jt}$

## COMMENT 3: QT MAY REVEAL ELASTIC RESERVE DEMAND

- For an excluded reserve-supply shock  $\Delta S_t$ :

$$\Delta p_t = \underbrace{\left( \sum_j \eta_{jt} \right)^{-1}}_{\text{inverse aggregate reserve elasticity}} (-\Delta S_t).$$

- The QT first stage estimates how much  $\Delta p_t = \Delta(i^F - i^R)_t$  moves after this shock:

$$\frac{\partial \Delta p_t}{\partial (-\Delta S_t)} \approx 0 \iff \sum_j \eta_{jt} \text{ large.}$$

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- What speaks against the interpretation:

If QT TGA shocks do not move FF-IOR or SOFR-IOR, the measured inverse reserve-demand curve is flat.

- (I understand the implicit exclusion restriction underlying this statement is stricter)

## COMMENT 4: ASSET AND LIABILITY SIDES ARE CONNECTED

- The paper motivates itself by saying the literature focused too much on the asset side of the Fed balance sheet
- That is right, but the reverse mistake is also possible:

QE and reserves are jointly created by the same central-bank balance sheet.

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- QE impact on bonds (e.g., Haddad–Moreira–Muir): later QE/QT announcements have smaller price impacts

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	Treasury-market evidence	Reserve-market evidence
Early QE	high bond price impact	stronger TGA-to-spread pass-through
Later QE / QT	lower bond price impact	weak QT spread pass-through
Interpretation	higher Treasury elasticity	higher reserve elasticity

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- **Are increases in elasticities in Treasury markets and for reserves over time connected through the same players and frictions?**

## CONCLUSION

- Very useful paper: I learned a lot about reserve demand!
- To build on it, I would sharpen how the empirical results map into policy objects:
  - ▶ make the TGA exclusion restriction and QT first-stage interpretation explicit
  - ▶ ask which counterfactual questions make the foreign/domestic split economically informative