Discussions of

The Market Events of Mid-September 2019

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and

U.S. Banks and Global Liquidity

by Ricardo Correa, Wenxin Du, and Gordon Liao.

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This discussion draws from work with Adam Copeland and David Yilin Yang. Views expressed do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System. Research assistance by Renhao Jiang is gratefully acknowledged.

Summary Comments

1. ACCKLM and CDL provide new facts and concepts that significantly deepen our understanding of the key roles in USD funding markets of:
   - the supply of central bank deposits (reserves).
   - the shadow cost of large dealer-bank balance-sheet space.

2. These are deep forensic analyses of institutional structures ("plumbing") and data, including use by CDL of a key new Fed data set, FR2052a.

3. A central focus of both papers is the USD funding market crunch of September 16-19, 2019, including jumps in
   - covered-interest parity violations [CDL].
   - the fed funds rate [ACCKLM].
   - violations of the "arbitrage equivalence" of IOER and Treasury repo rates [ACCKLM, CDL].

4. Neither paper provides a convincing explanation of how moderate and predictable incremental effects could cause such sudden and large jumps in arbitrage rate violations.

Repo rates spike relative to IOER

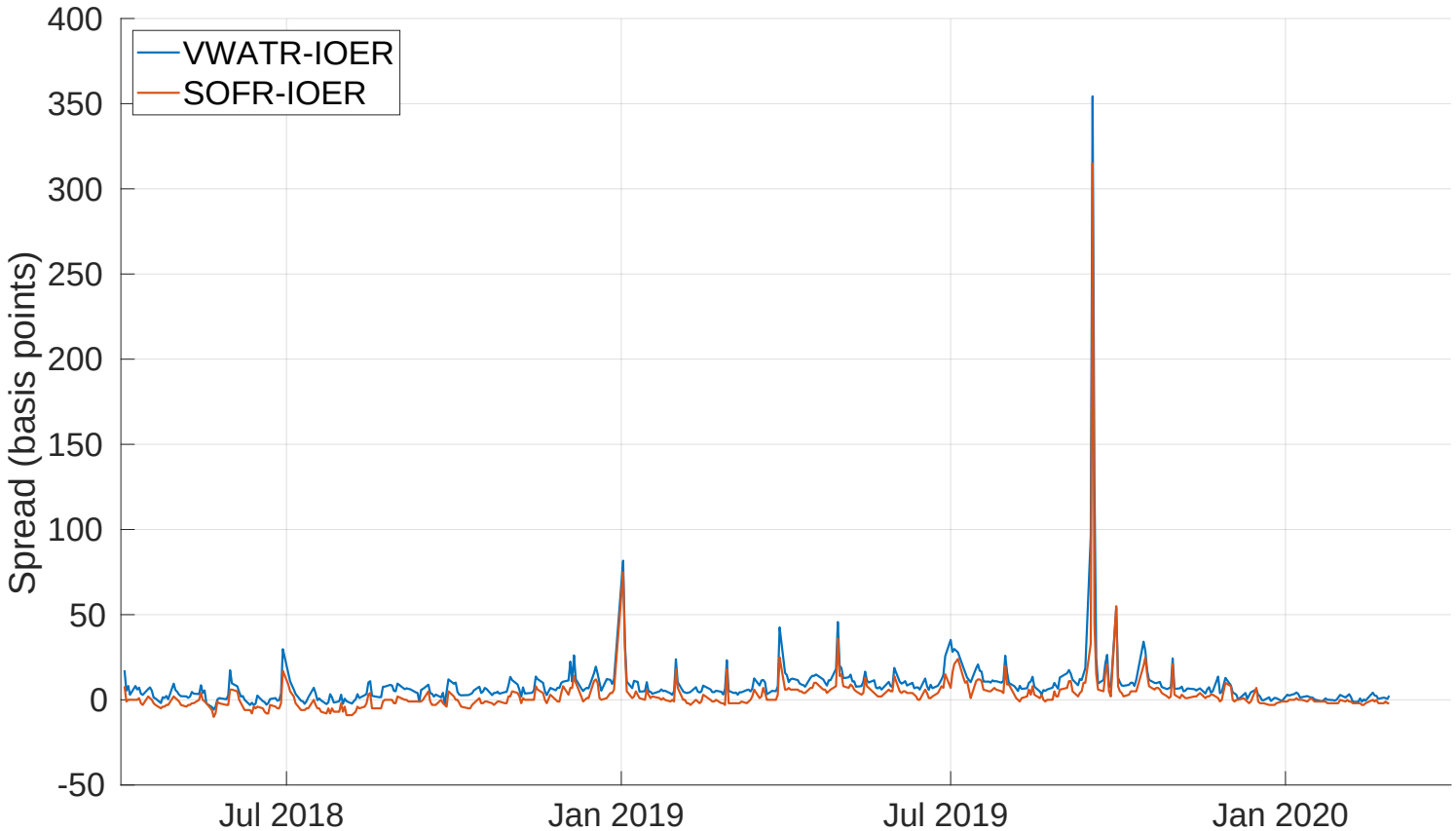

Figure: Copeland, Duffie, and Yang (2020). Data: FRBNY and Tradition.

Numerous repo-rate spikes since mid 2018

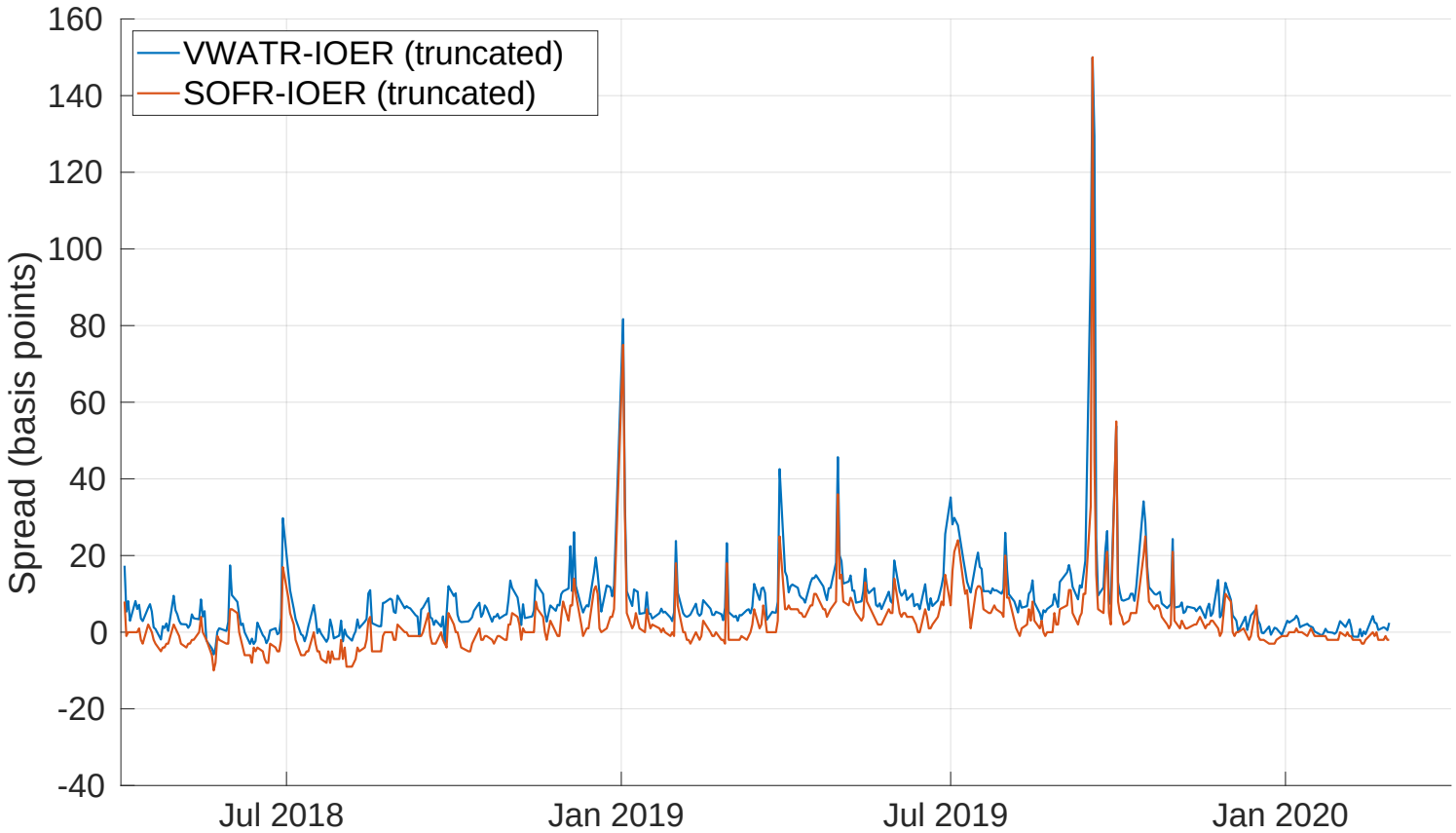

Figure: Copeland, Duffie, and Yang (2020). With truncation of the spike on September 17, 2019. Data: FRBNY and Tradition.

Days on which repo rates spiked

Date	SOFR-IOER	VWATR-IOER	Dlr. balances ($ billions)	Tsy. Issuance ($ billions)
9/17/19	315	354	465	90
1/2/19	75	82	497	70
9/30/19	55	54	478	138
9/18/19	45	129	455	0
3/17/20	44	NA	589	96
9/30/16	39	78	773	89
4/30/19	36	46	474	237
9/16/19	33	97	483	78
1/3/19	30	33	506	62
3/29/19	25	43	561	29
7/3/19	21	30	503	0
9/29/16	20	38	791	116
10/15/19	20	34	485	168
6/29/18	17	30	731	21
7/1/19	7	35	445	119
3/29/18	5	33	758	196

Source: Copeland, Duffie, and Yang (2020). Data: Fedwire Funds Service, FRBNY, and Tradition.

Reserve balances were "too low" by mid 2018

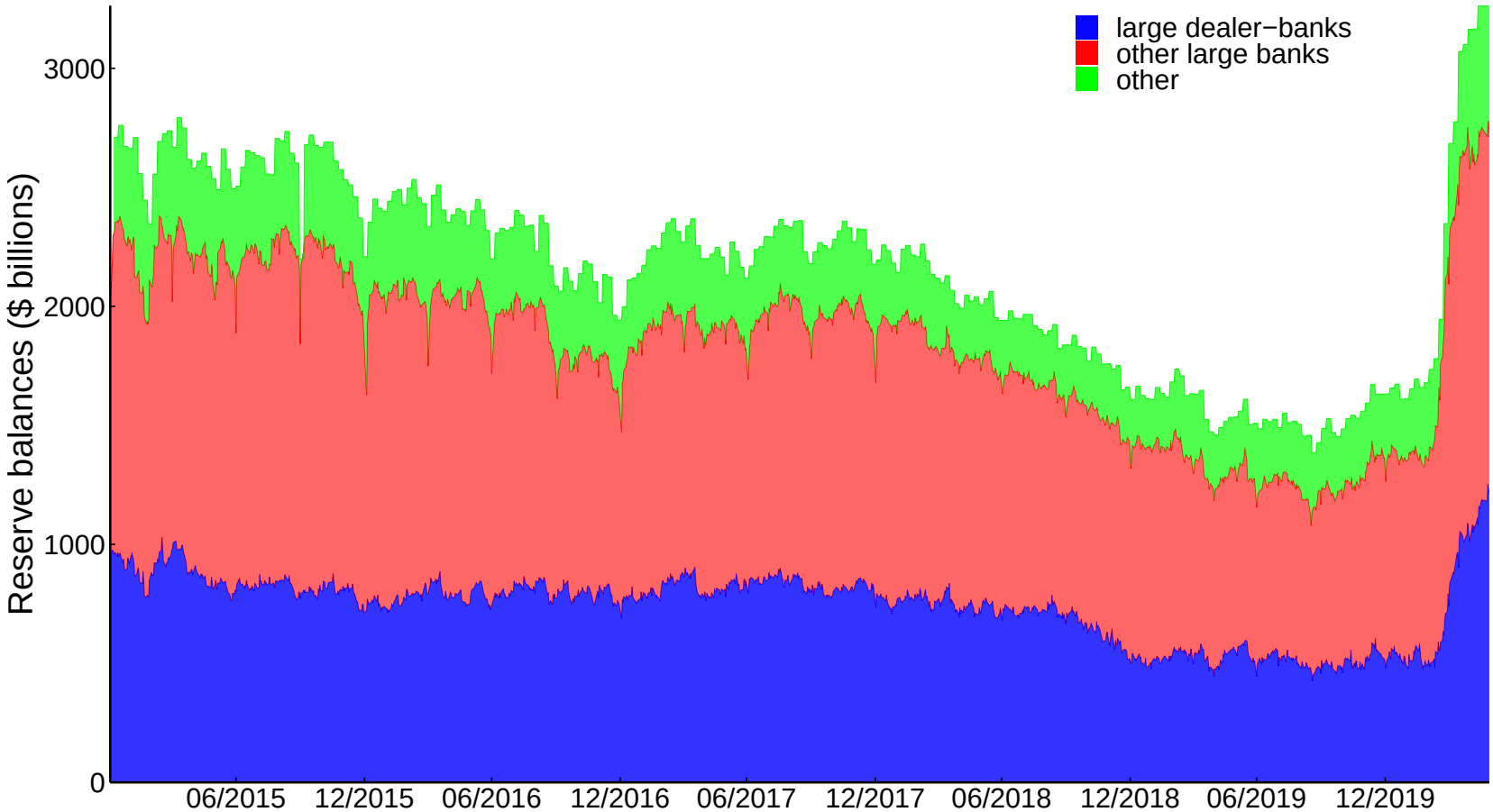

Figure: Copeland, Duffie, Yang (2020). Data: Fedwire Funds Service, FRED.
Background: Avalos, Ehlers, and Eren (2019)

It takes a lot of reserves to saturate the repo market

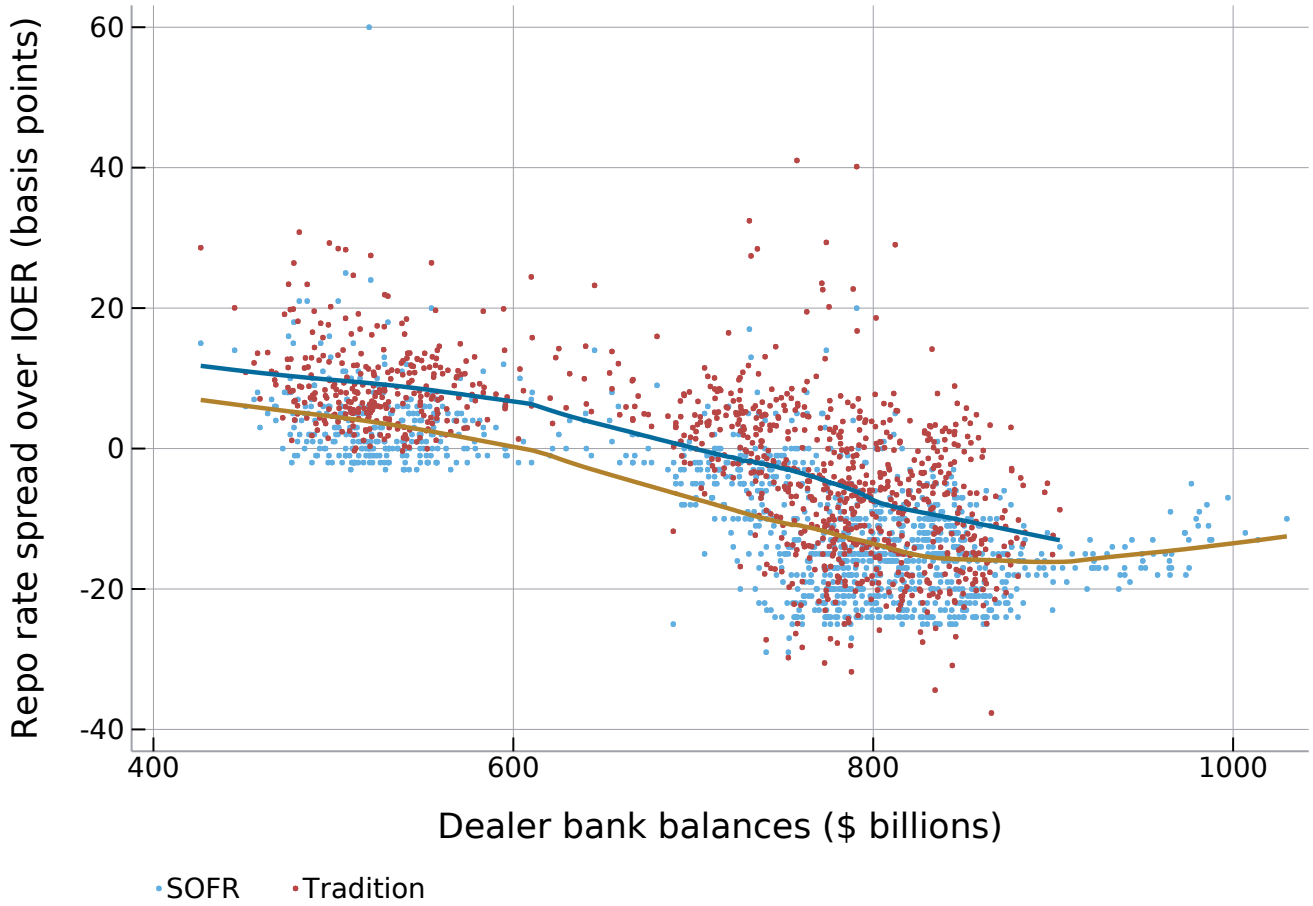

Figure: Copeland, Duffie, Yang (2020). Data: Fedwire Funds Service, FRBNY, Tradition.

Views on Fed policy by Gagnon and Sack (2019)

- *"First, the Fed should implement a standing fixed-rate repo facility from which a set of counterparties (including banks) can borrow at a rate modestly above the rate of interest the Fed pays on excess reserves (IOER)."*

- *"The minimum level of reserves is conceptually murky, impossible to estimate, and likely to vary over time. The best approach is to steer well clear of it, especially since maintaining a higher level of reserves as a buffer has no meaningful cost."*

- *"It is important for the Fed to control the repo rate, and the FOMC directive should explicitly state that. In fact, the Fed should consider even going as far as adopting the repo rate, as measured by the secured overnight financing rate (SOFR), as the targeted policy instrument."*

Some of the key contributions of these two papers

1. Abundancy of reserves is crucial for intermediation of US dollar funding markets. [ACCKLM, CDL]

2. Evidence that when aggregate reserves get low enough, frictional rate distortions can spike. [ACCKLM, CDL]

3. Matched-book intermediation impinges on balance sheet space. Reserves draining intermediation impinges on reserves. [CDL]

4. On September 16-19, 2019, a low supply of reserves, frictions in the mobility of reserves, and several on-the-day reserves-draining factors contributed to big spikes in repo rates and covered-interest-parity violations. [ACCKLM, CDL]
   - Treasury General Account increases.
   - Treasury security issuances.
   - Corporate tax payments.

5. A reduction in money-fund use of sponsored repo exacerbated the September crunch by increasing the balance-sheet intensity of repo intermediation. [ACCKLM]

A reduced-form empirical model will not explain this spike!

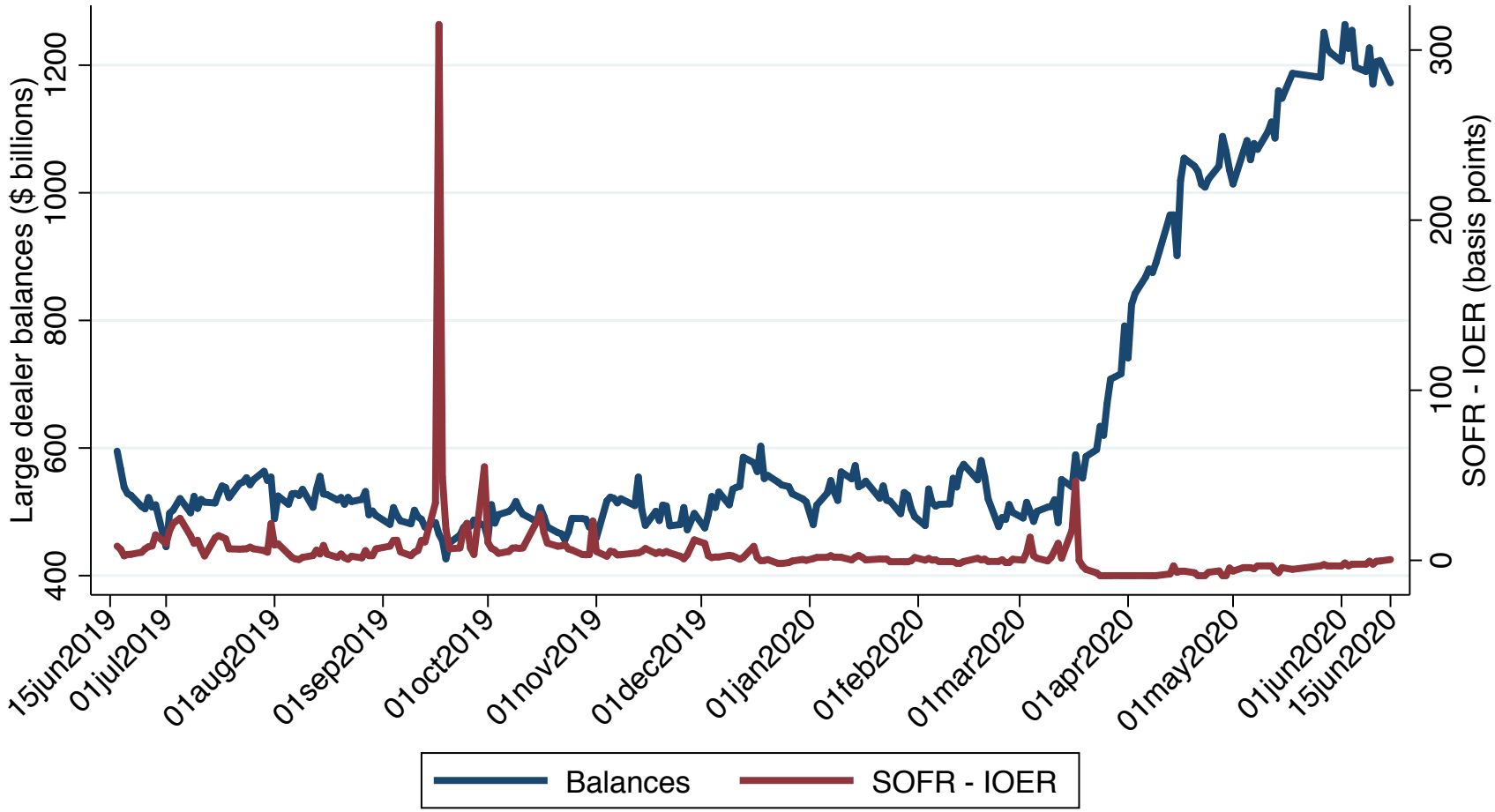

Figure: Copeland, Duffie, Yang (2020). Data: Fedwire Funds Service, FRBNY.

Yang (2020): When reserves get low enough, rates must spike.

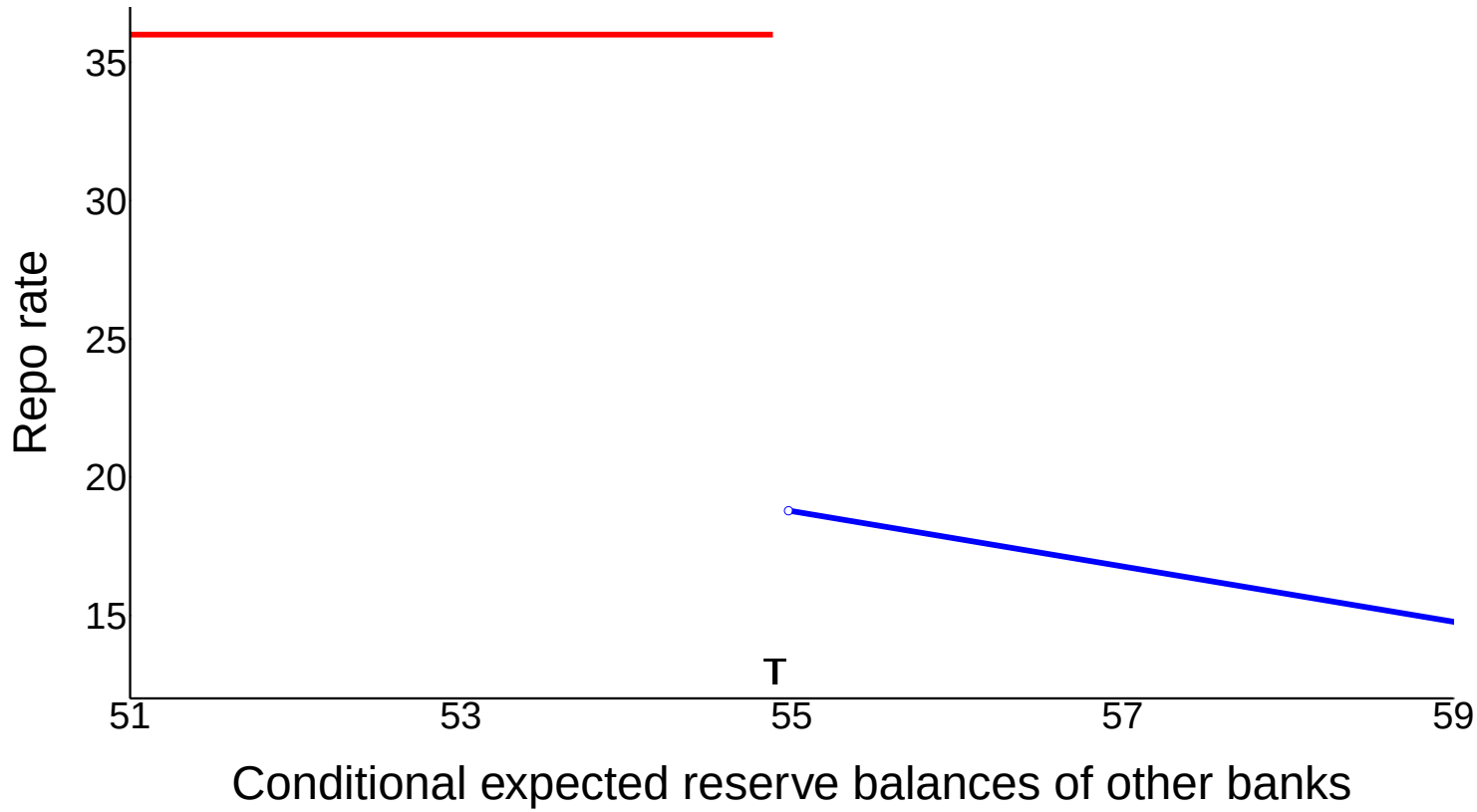

Figure: Yang (2020). A sample of empirical evidence: Hamilton (1996), McAndrews and Potter (2002), Ashcraft, McAndrews, and Skeie (2011), CDL (2020), ACCKLM (2020).

As reserves went down, their distribution across dealers flattened

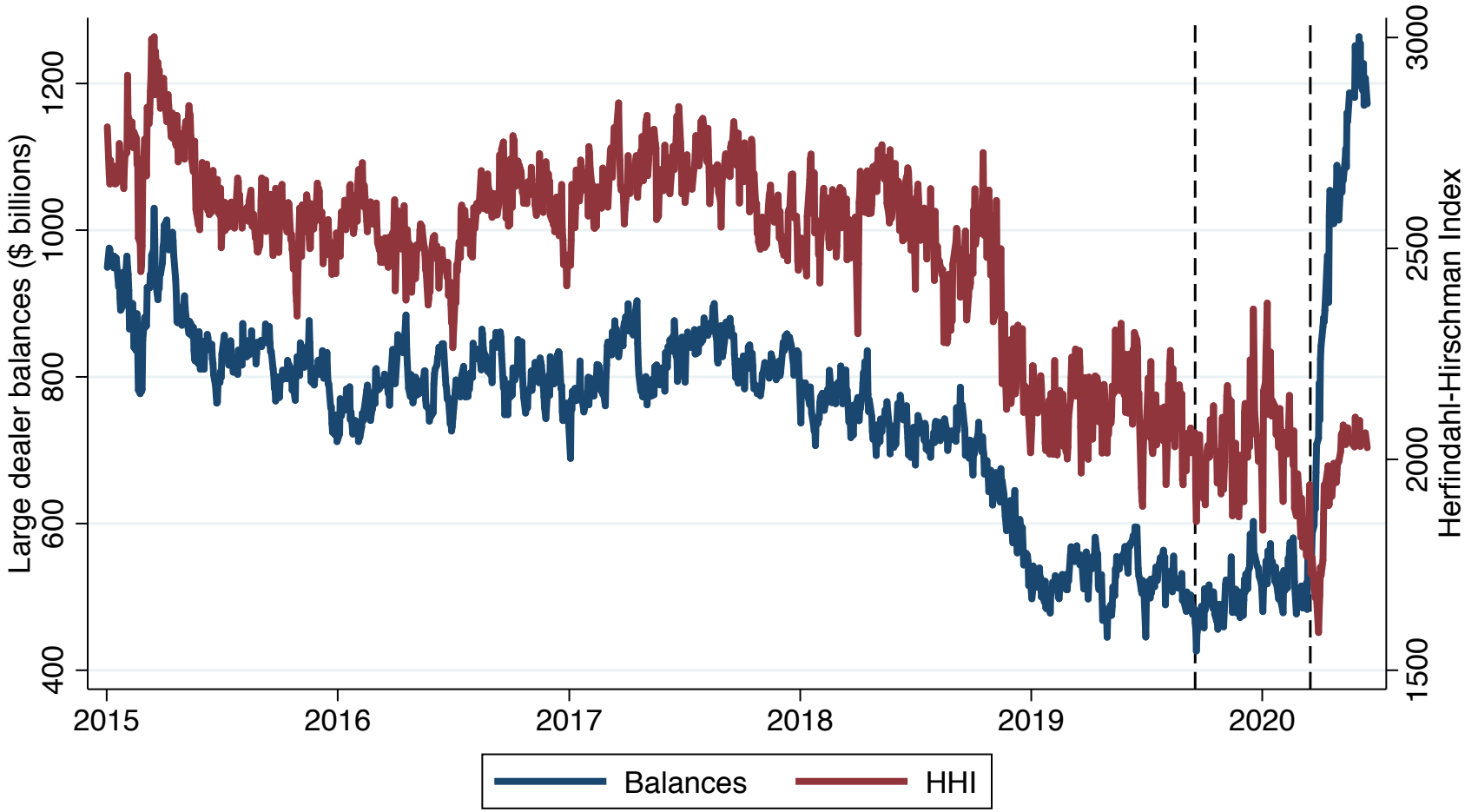

Figure: Copeland, Duffie, Yang (2020). Data: Fedwire Funds Service.

When reserves went up, intra-day payments were made earlier

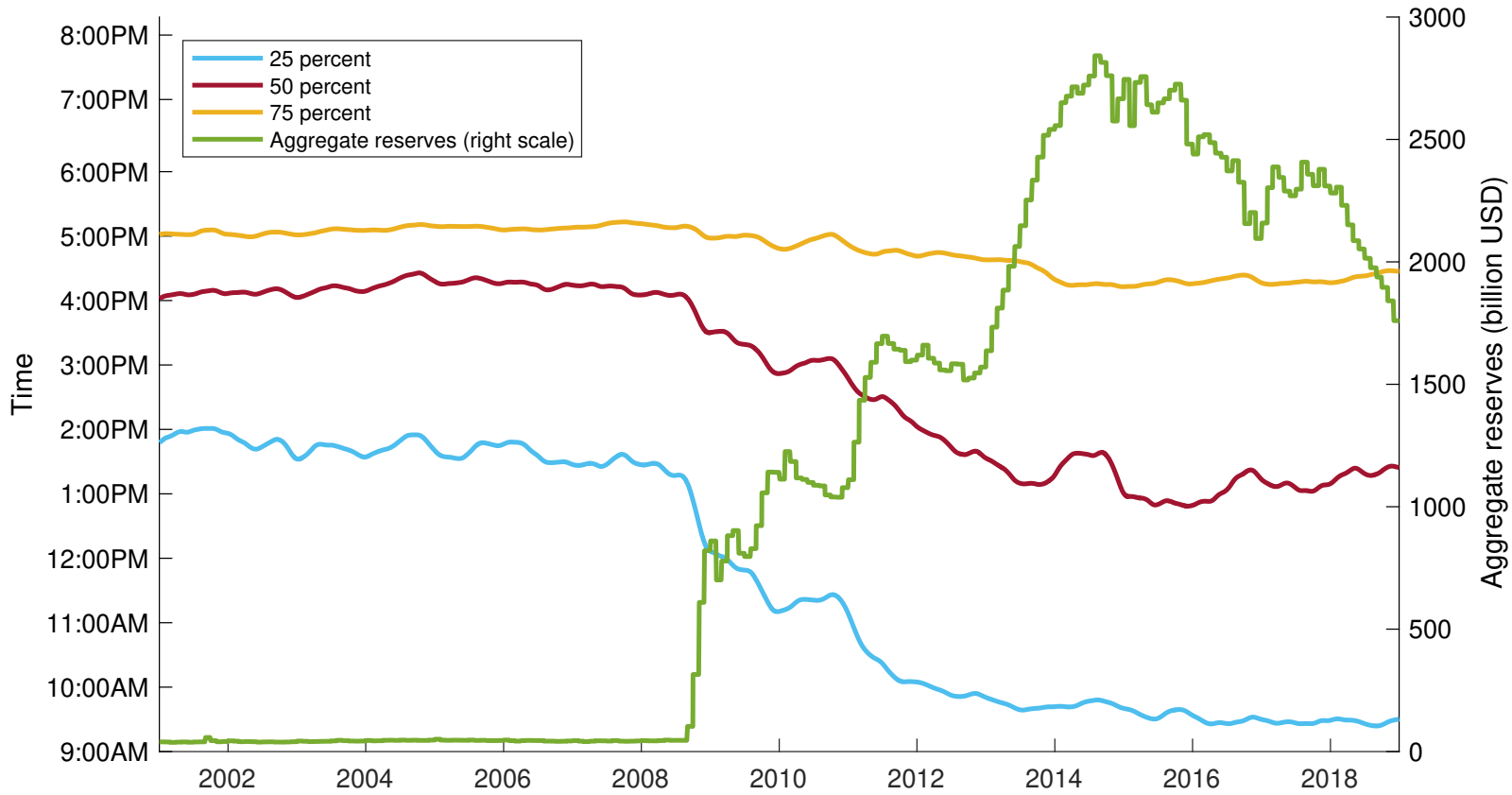

Figure: A variant of a figure from Copeland, Molloy, and Tarascina, Federal Reserve Bank of New York, February 25, 2019, based on data provided by the authors.

When reserves went down, peak daylight overdrafts went up

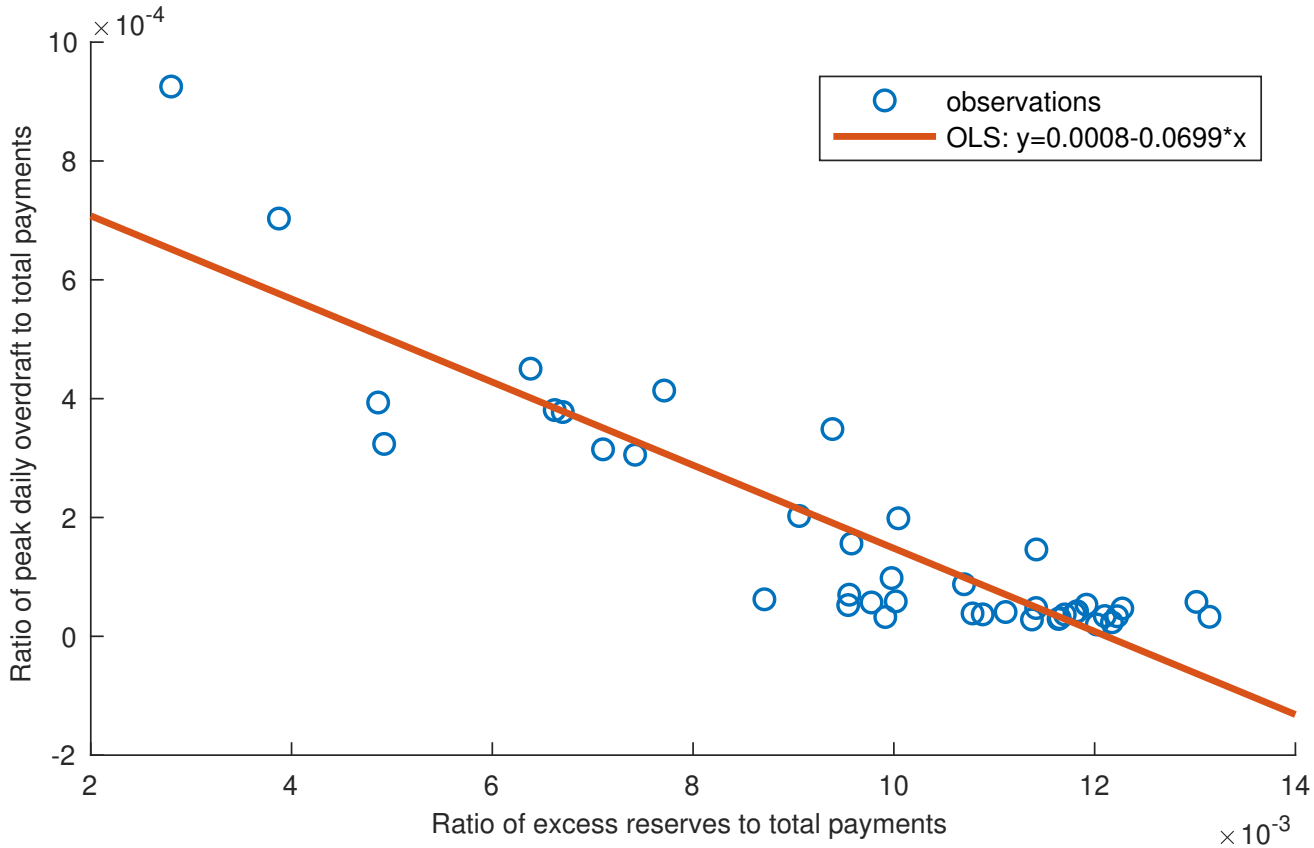

Figure: Post-crisis quarterly peak daylight overdrafts, normalized by quarterly aggregate payment volume, regressed onto excess reserves, also normalized by quarterly aggregate payment volume. $R^2 = 0.80$. Data source: Federal Reserve.

Intraday interdealer volumes on Tradition

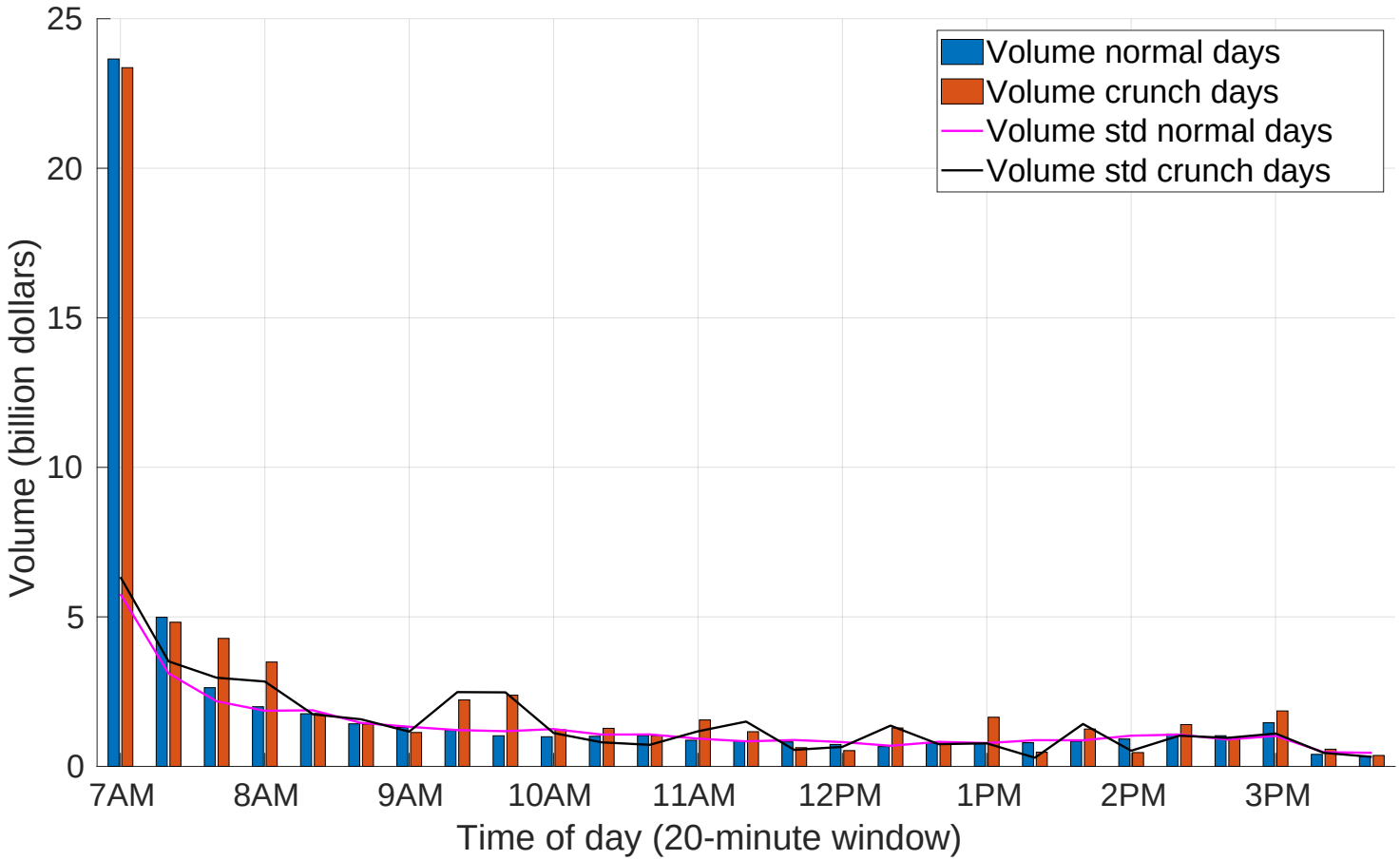

Figure: Average and standard deviation, across normal days and across crunch days, of total trading volume in each 20-minute time window. Source: Copeland, Duffie, and Yang (2020). Data: Tradition

Intraday interdealer repo rate spreads and volatility

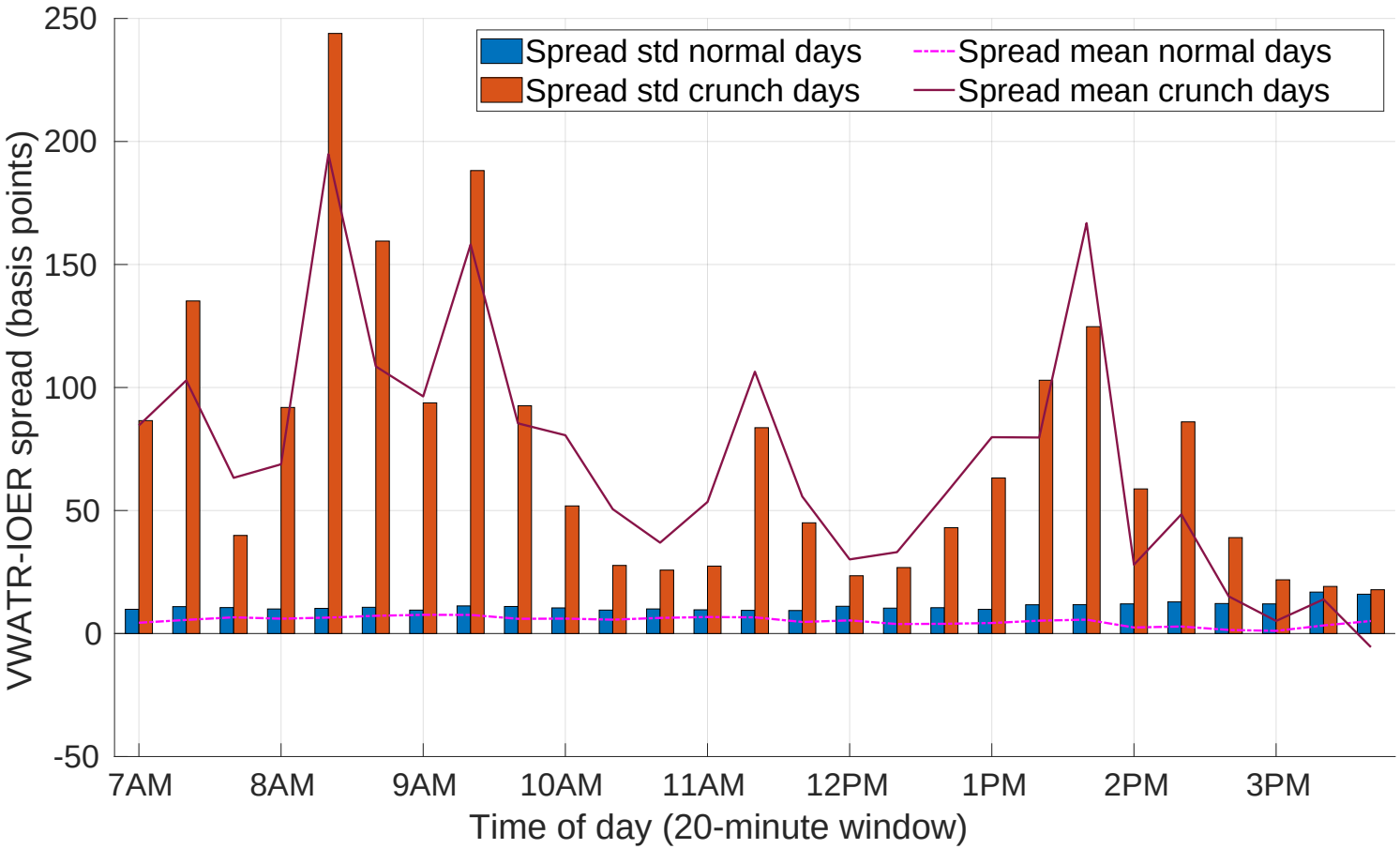

Figure: Copeland, Duffie, Yang (2020). Data: Tradition.

SOFR was far from the fed funds target during the COVID19 crisis

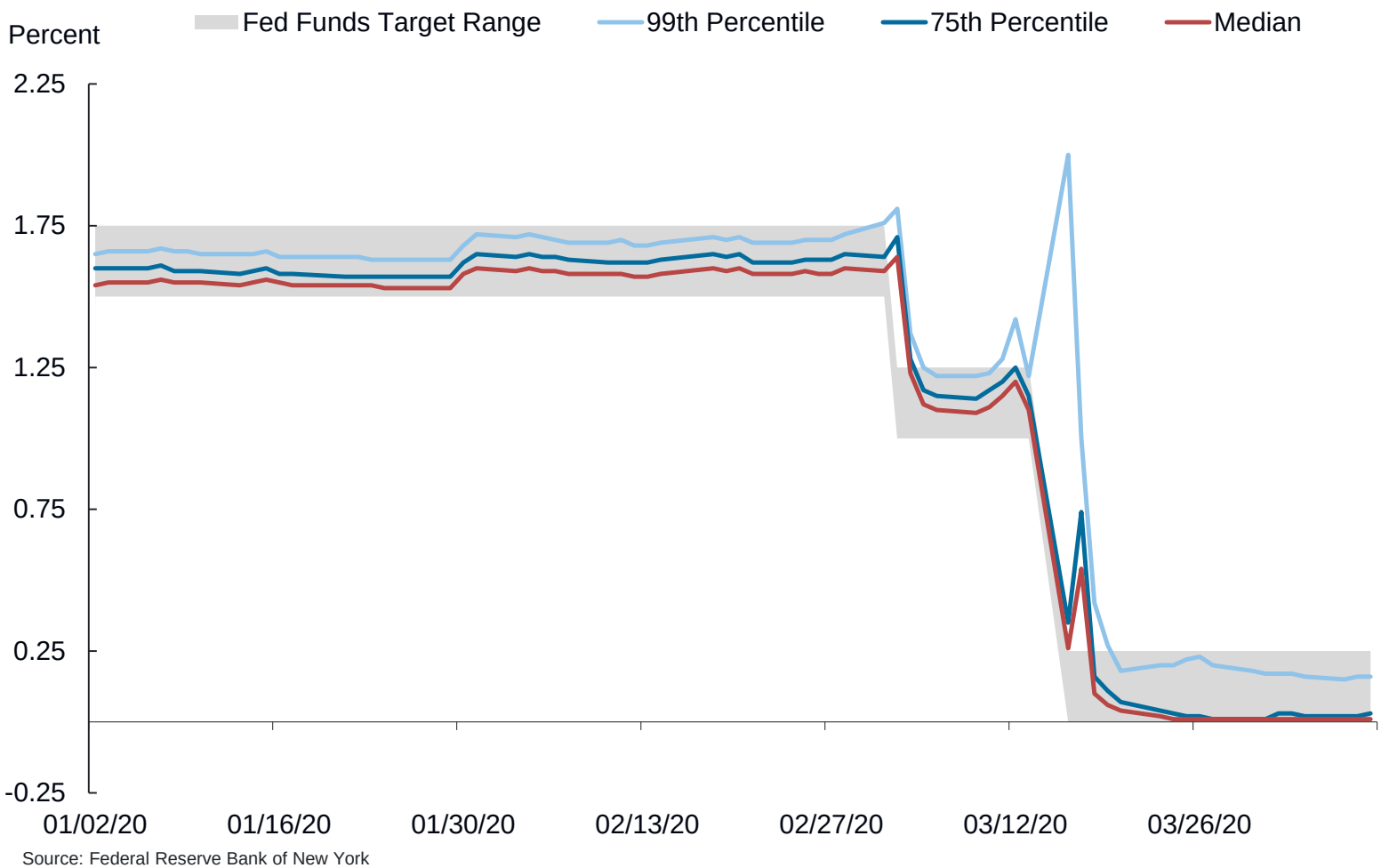

Figure: Federal Reserve Bank of New York, Lorie Logan speech, April 14, 2020.