Still the World's Safe Haven?

Redesigning U.S. Treasury Markets After the Covid19 Crisis

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May 27, 2020

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Covid-19 forced the Fed to be a dealer of last resort

1. Covid-19 news caused large liquidations of treasury positions.
2. Dealer balance sheet space is limited.
3. The market choked on the surge in demand for liquidity.
   - Bid-ask spreads offered by dealers widened by a factor of 10.
   - Order-book depth dropped by a factor of 10.
   - The shape of the yield curve became disjointed.
   - The treasury cash-futures basis exploded.
   - Off-the-run treasuries got especially mis-priced.
4. A massive response by the Fed:
   - Purchased $1 trillion of treasuries in 3 weeks – then more.
   - Provided unlimited financing for treasuries.
   - Exempted treasuries from capital required under the supplementary-leverage-ratio rule.
5. Large future growth in the marketable supply of treasuries suggests a reform: A broad central clearing mandate.

Marketable treasuries outstanding and big-bank assets

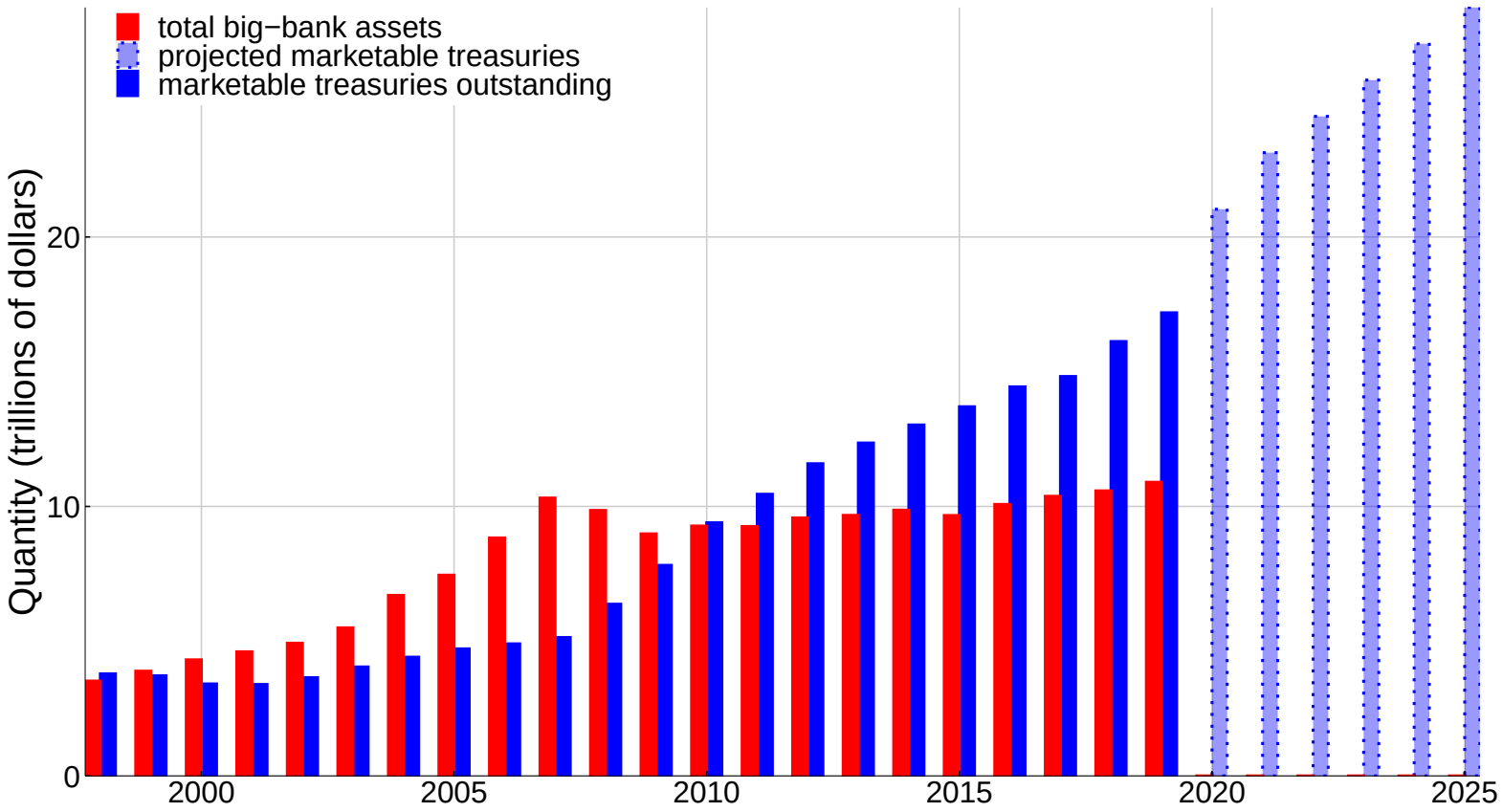

Figure: Marketable treasuries outstanding, including projections from 2020 from deficit of Committee for a Responsible Federal Budget, April 13, 2020. Total assets of the holding companies of Goldman Sachs, Morgan Stanley, Merrill Lynch, Lehman Brothers, Bear Stearns, Bank of America, JP Morgan Chase, Citigroup, and Wells Fargo. Data: FRED, CRFB, 10K disclosures.

Bid-Offer Spreads

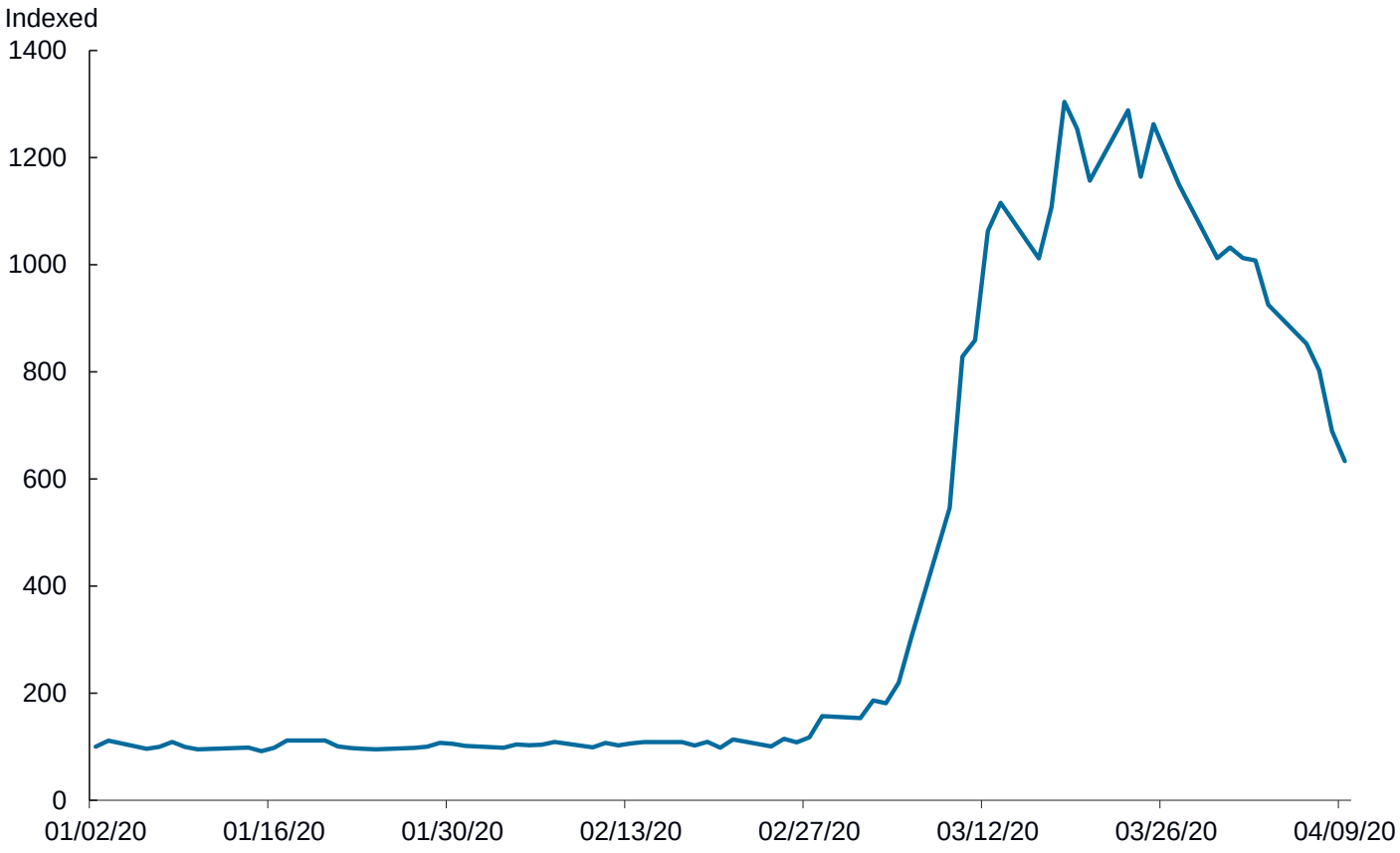

Figure: U.S. treasury bid-offer spreads, indexed to 100 at January 2, 2020. This figure by Lorie Logan, Manager of the System Open Market Account and Head of the Open Market Trading Desk, Federal Reserve Bank of New York, was published with her speech of April 14, 2020. The underlying data source is Bloomberg Financial LP. Bloomberg publishes dealer bid and offer prices in the dealer-to-customer market.

Market depth

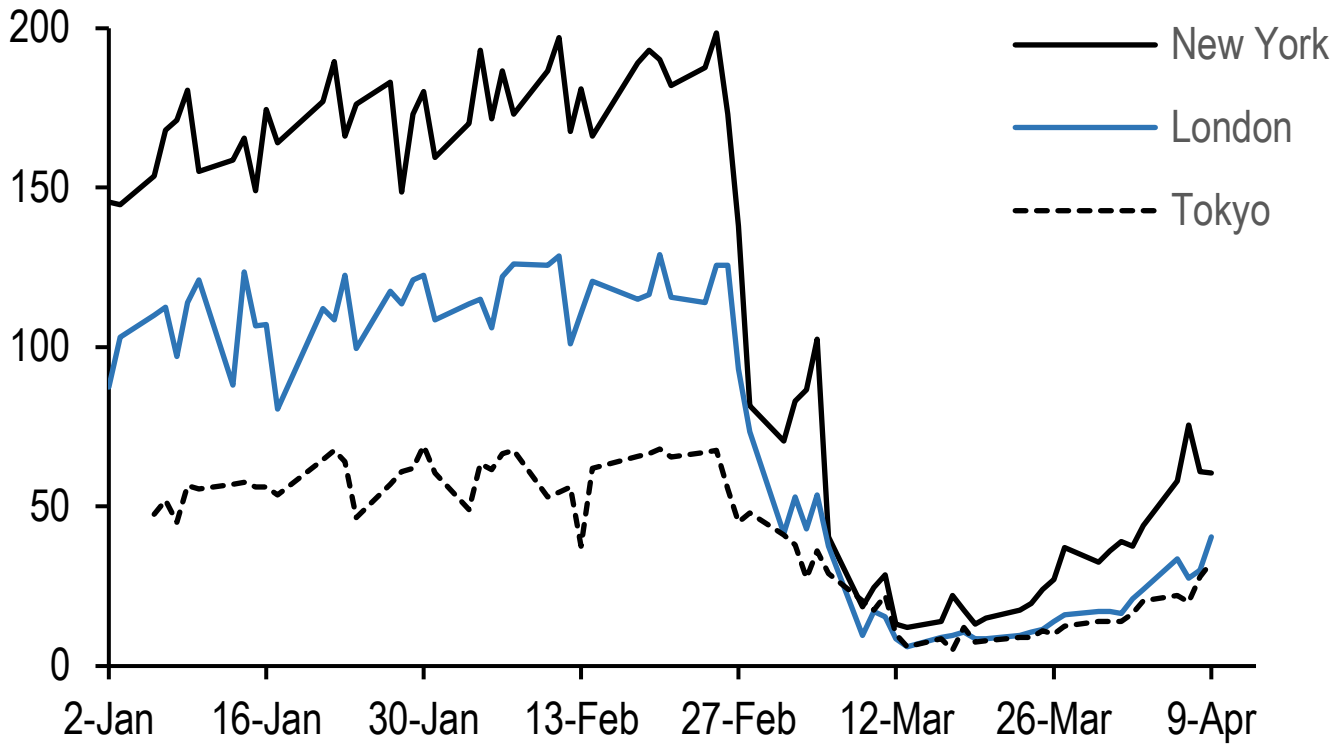

Figure: Treasury market depth on Brokertec, in millions of dollars. The market depth shown is the average of the largest three amounts bid or offered on Brokertec's interdealer central limit order book market (New York, London, and Tokyo, respectively) for on-the-run 10-year U.S. treasuries between 8:30am and 10:30am EST. The figure was obtained from JP Morgan, US Fixed Income Strategy, Joshua Younger and Henry St. John, April 2, 2020.

Cash-futures basis

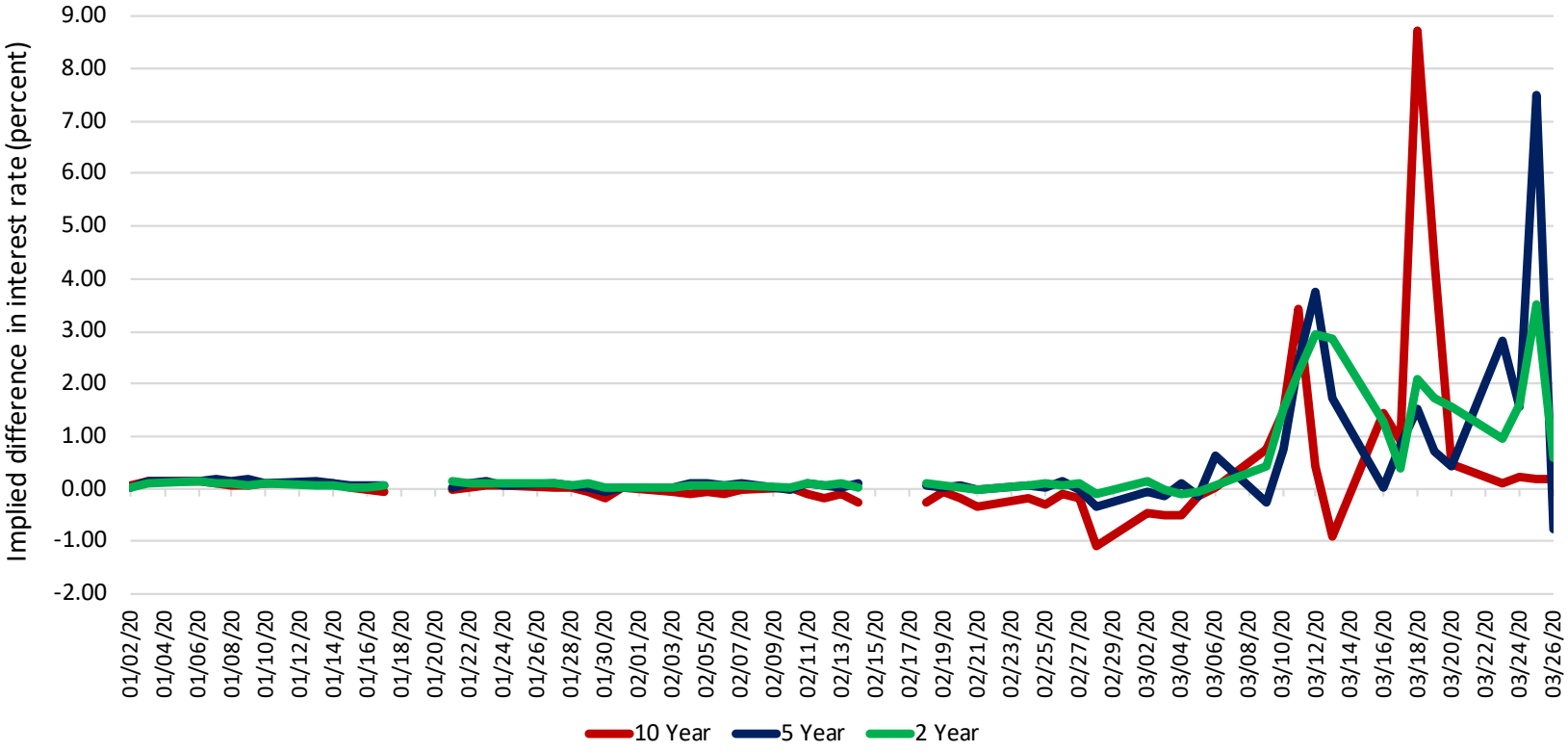

Figure: The difference, in percent, between (a) the repo rate implied by selling treasury futures, purchasing the cheapest-to-deliver underlying treasury note, and closing the futures contract at maturity by delivering the treasury note, and (b) the actual market general-collateral one-month repo rate. The data shown in the figure were provided to the author by Andreas Schrimpf, Hyun Song Shin, and Vladyslav Sushko, from Graph 3 of their paper "Leverage and Margin Spirals in Fixed Income Markets During the Covid-19 Crisis," BIS Bulletin, Number 2, April 2, 2020.

Total treasury market trade volumes

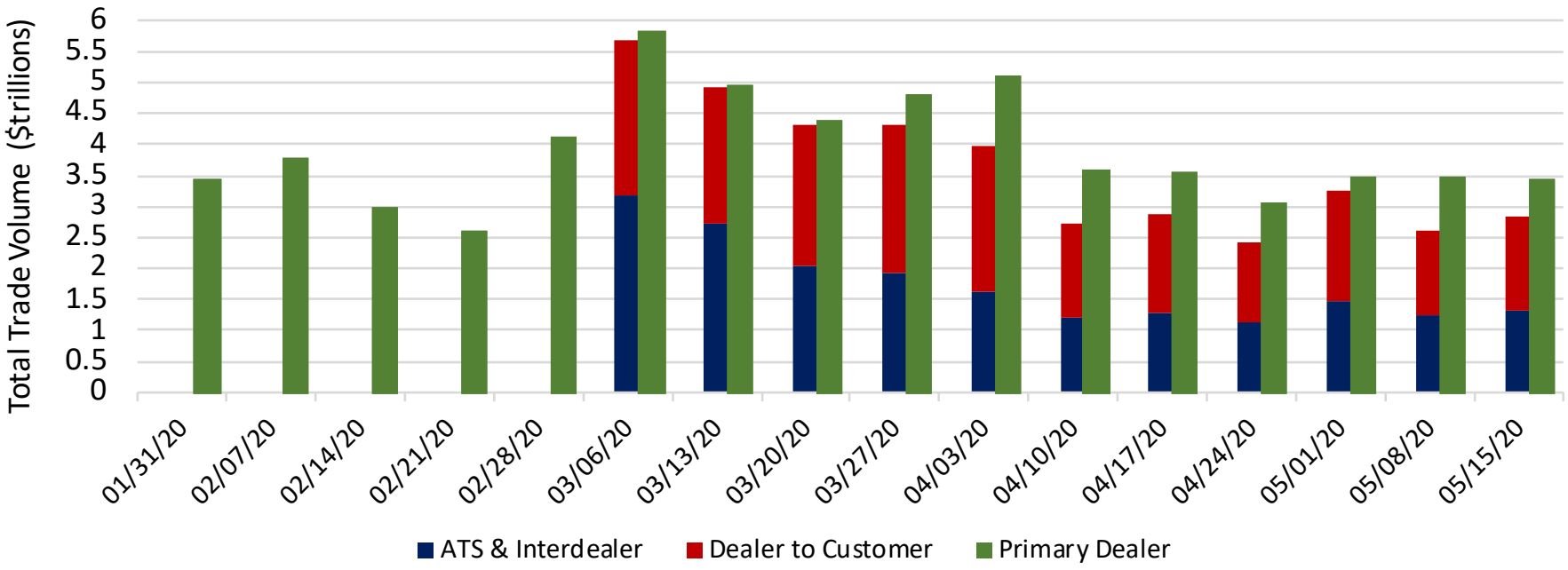

Figure: Total treasury market volumes, dealer-to-customer and interdealer (including ATS), for weeks ending on the indicated dates, and primary dealer volumes (which double counts trades between primary dealers). Data sources: FRBNY and TRACE (FINRA).

Central clearing of treasury transactions is still limited

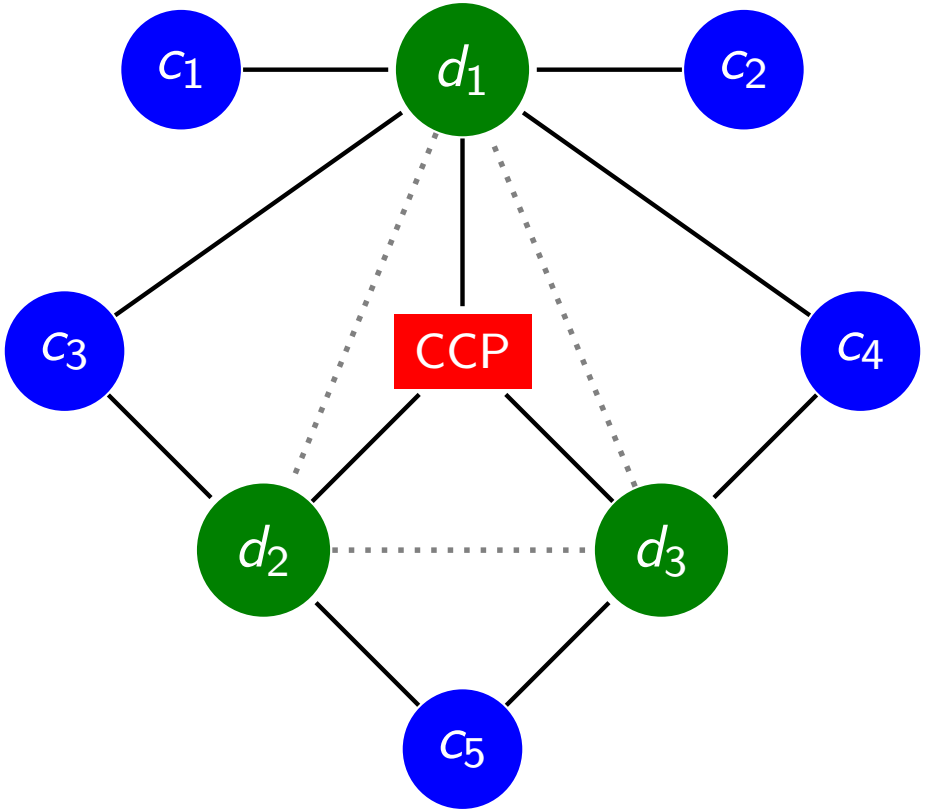

Figure: Treasury Market Practices Group (2018) estimates that a firm faces a CCP on 22.4% of all treasury transactions.

Broad central clearing frees up dealer balance sheet space

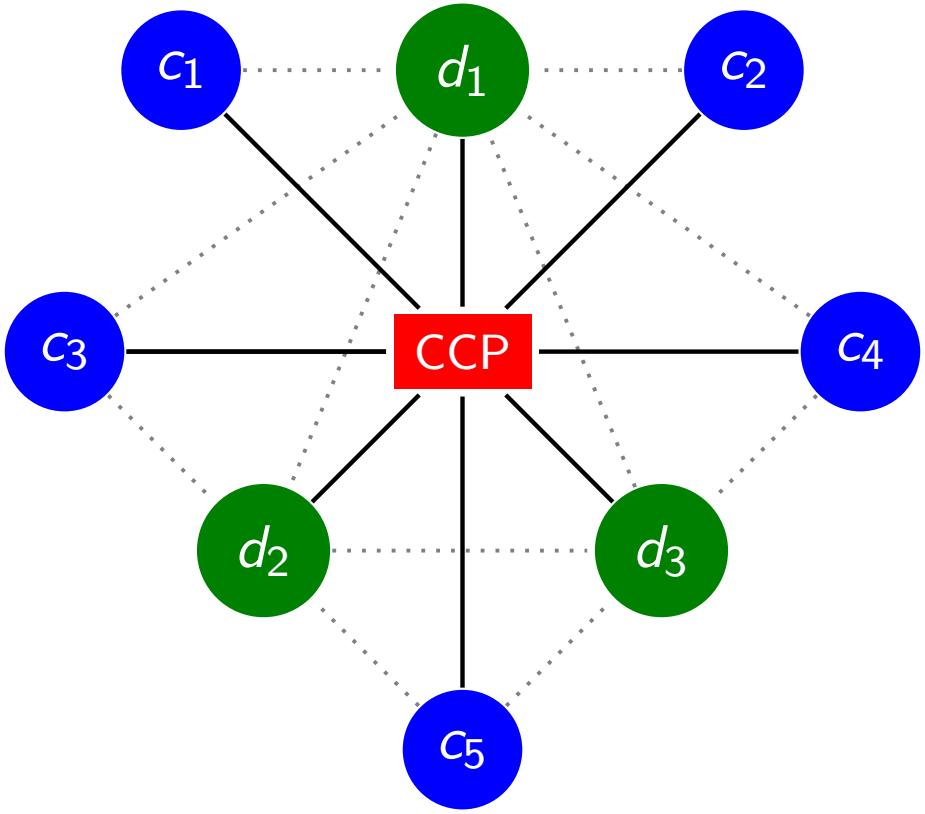

Figure: A rule requiring the central clearing of transactions of all firms actively trading Treasuries would relieve some of the need to warehouse trade flows on dealer balance sheets. Dealers would be better able to net their buy and sell trades with central counterparties (CCPs). Further, with a broad-market CCP, some treasury transactions could flow directly from ultimate sellers to ultimate buyers, without necessarily impinging on dealer balance sheet space.

One-day settlement risk: SPDR SP500 versus 10-year note

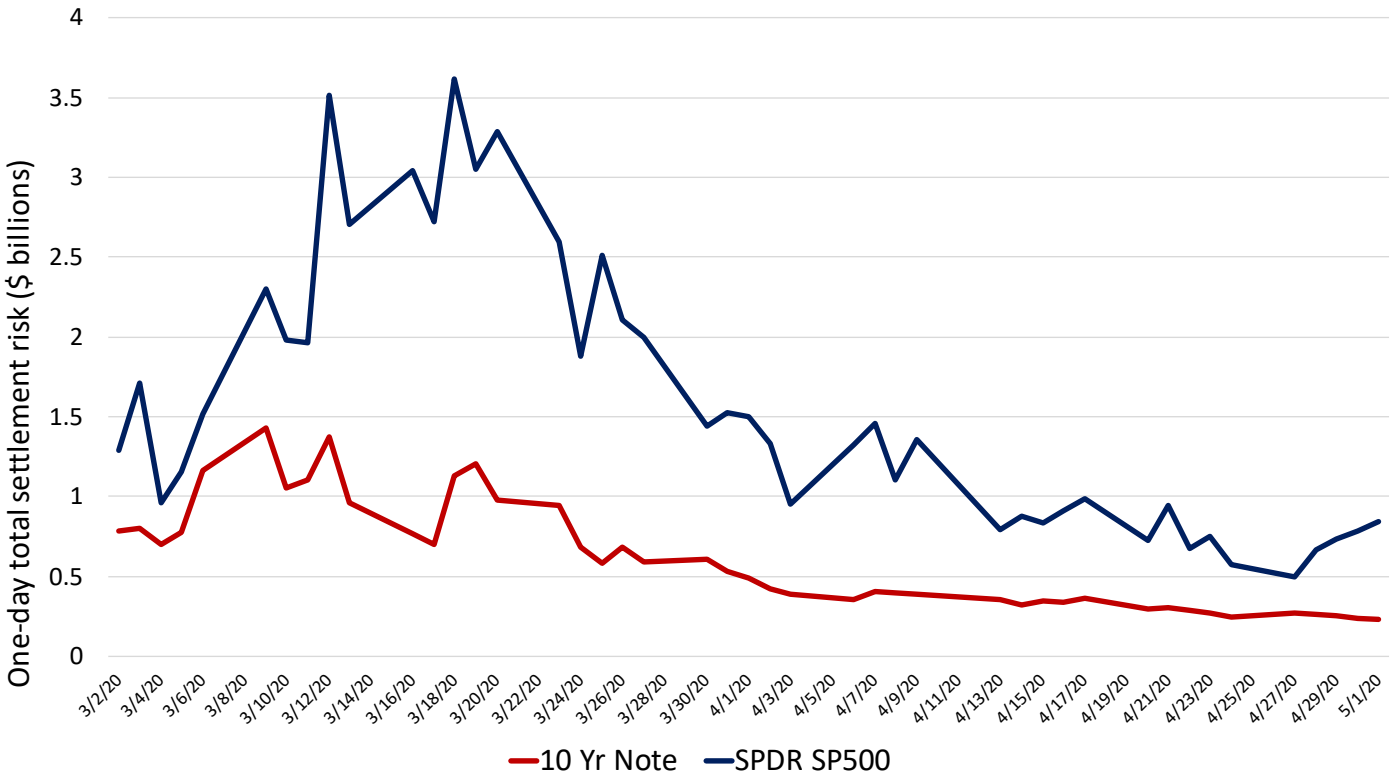

Figure: Estimated market-total one-day gross settlement risk, on-the-run 10-year U.S. treasury notes and SPDR SP 500 ETF. One-day gross settlement risk is estimated as the dollar market value of the volume of trade multiplied by the option-implied standard deviation of daily returns. Treasuries trades normally settle in one day (T+1), whereas exchange-traded equities such as the SPDR SP500 ETF settle in two days (T+2). Underlying data sources: FINRA, U.S. Treasury Department, CBOE, NYSE-Arca.

Appendix charts

Growth of marketable treasuries relative to dealer positions

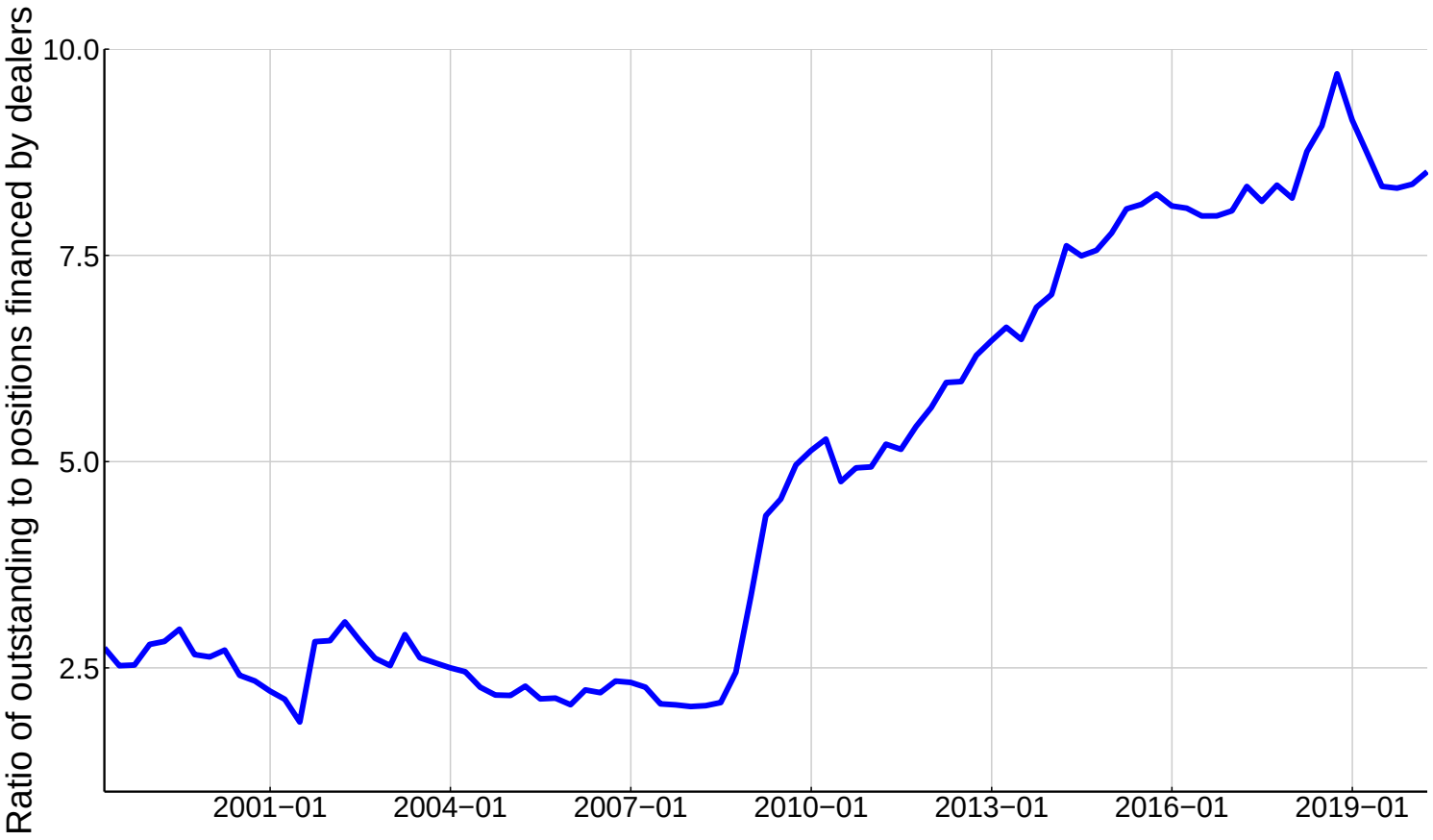

Figure: The ratio of the stock of outstanding marketable treasuries to the total of treasury positions for which primary dealers received financing with repurchase agreements and securities lending. Data sources: FRED and Federal Reserve Bank of New York.

Fed purchases of treasuries during the Covid Crisis

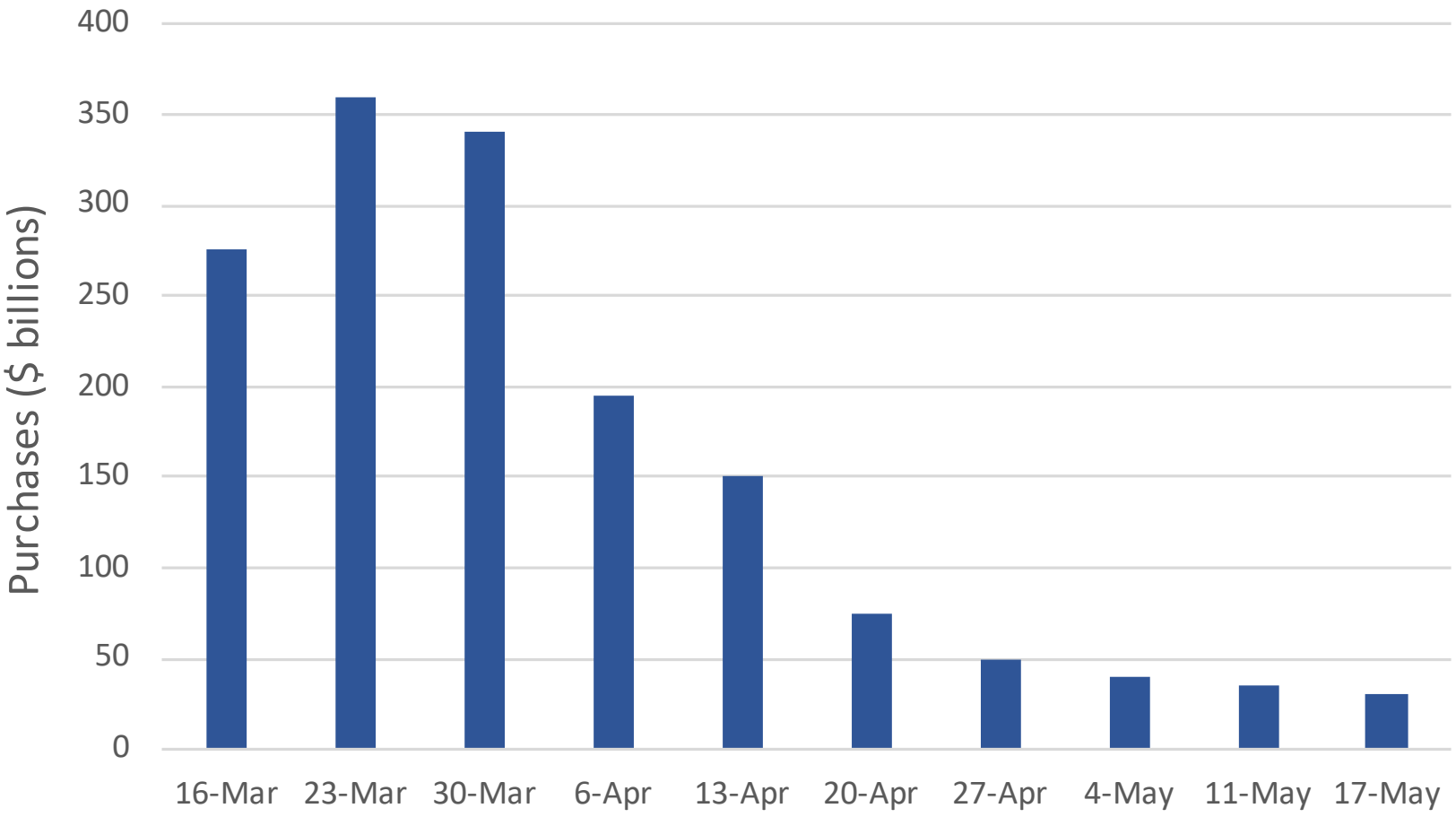

Figure: The Fed's purchases of treasuries, March 16 to May 17, 2020. May data include Fed projections. Data source: Federal Reserve Bank of New York.

Financing of primary-dealer treasury inventories

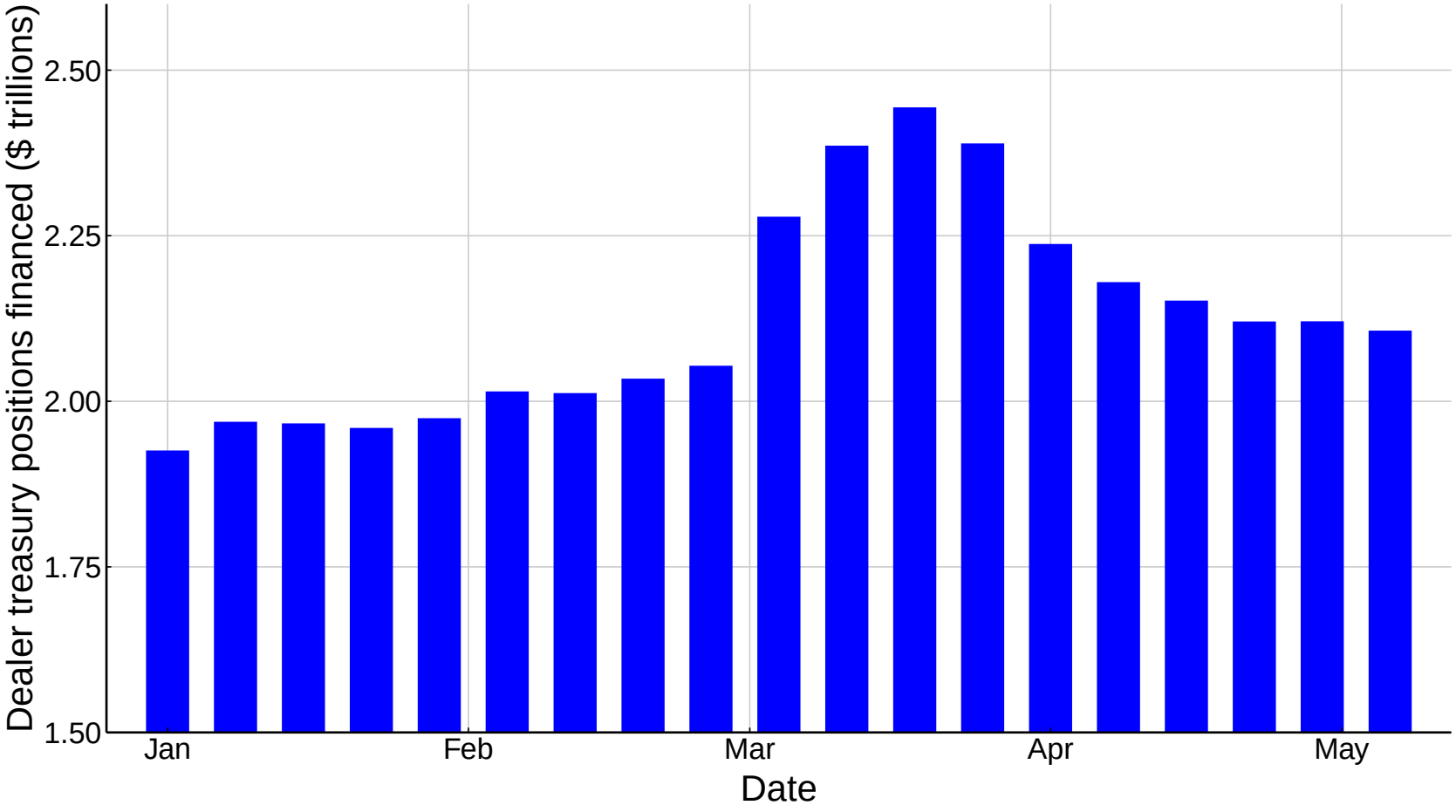

Figure: Total of all treasury positions for which primary dealers received financing with repurchase agreements and securities lending, January to May, 2020. Data source: Federal Reserve Bank of New York.

Settlement fails

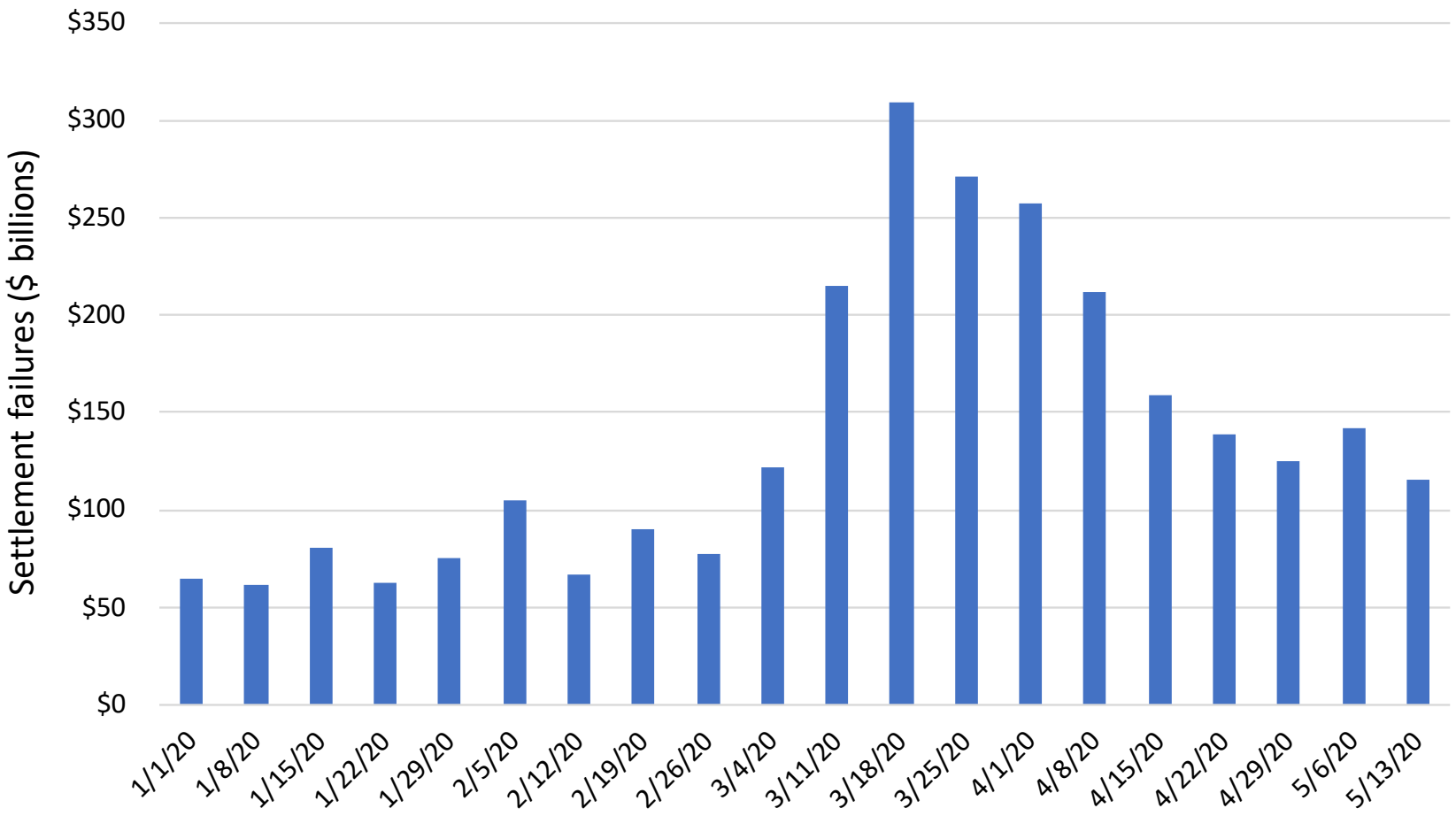

Figure: Settlement fails in treasury securities transactions involving primary dealers. Data source: Federal Reserve Bank of New York.

Yield Curve Noise and Volatility

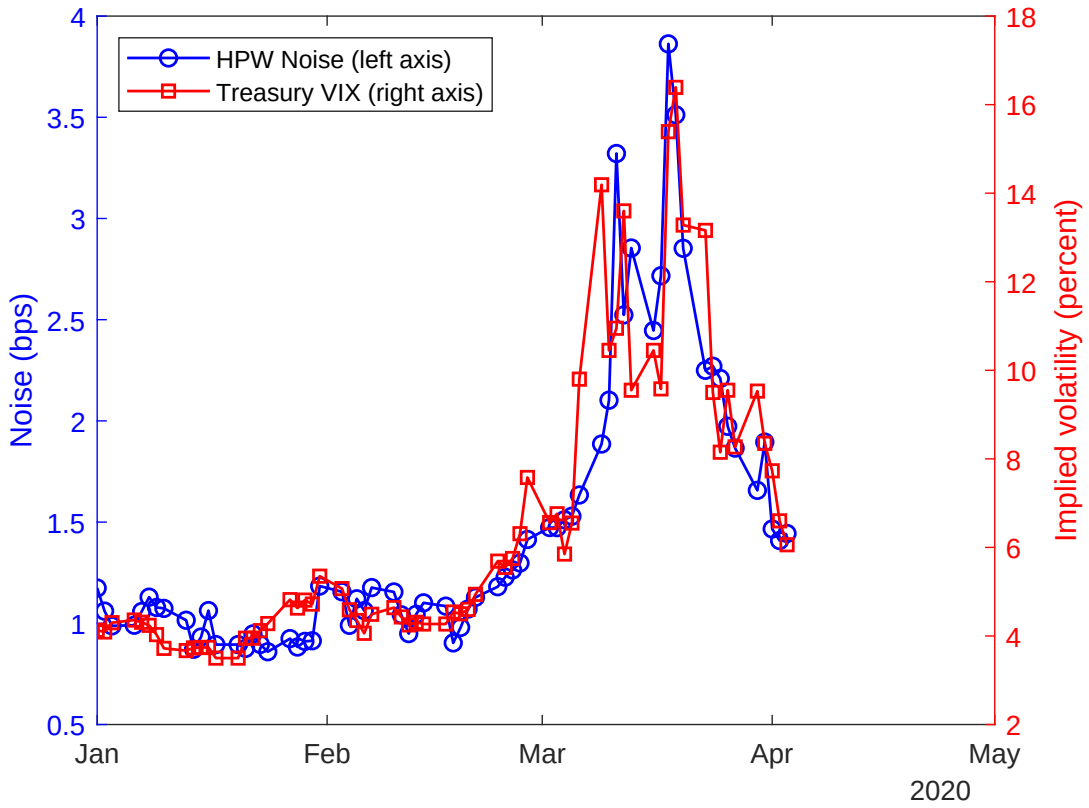

Figure: Implied volatility of the 10-year treasury note and the Hu-Pan-Wang measure of yield curve noise, in basis points. The implied volatility measure is from CBOE TYVIX data, based on options on the 10-year treasury note. The Hu-Pan-Wang (2013) noise measure of treasury market illiquidity is the square root of the mean squared error (RMSE) obtained when fitting the prices of treasury securities to a smooth model of the yield curve. Figure source: Professor Jun Pan.