Implementing Monetary Policy –
Short-term Money Markets Monitoring

Domestic Money Markets, FRBNY
September 29, 2015
Agenda – Short-term Money Markets

I. Unsecured money markets
   i. Federal Funds / Eurodollars
   ii. Commercial Paper / Certificates of Deposit

II. Secured money markets - General Collateral (GC) repo
   i. Temporary Open Market Operations (TOMO)

III. U.S. Money Market Mutual Funds (MMMF)

IV. Risk Outlook

Useful abbreviations:
EFFR – Effective fed funds rate
FBO – Foreign banking organization
GSE – Government Sponsored Enterprises (Fannie Mae, Freddie Mac, Farmer Mac, Federal Home Loan Banks [FHLB])
IOER – Interest on Excess Reserves
Short-term Wholesale Funding Markets

- Short-term wholesale funding markets provide financial intermediaries with funds that supplement retail deposits and long-term debt issuance.

- Motivations to borrow in funding markets:
  - To finance assets
  - To meet liquidity needs
  - Earn a spread by lending borrowed funds at a higher rate or depositing proceeds at the Fed (e.g. fed funds “IOER arbitrage” trades)

- Who lends in funding markets?
  - Institutions seeking returns on their cash positions (e.g. banks, GSEs, MMMFs, Securities Lenders, central banks, supranational)

- Transactions can be secured or unsecured

- Money market rates can reflect marginal borrowing costs, influence yields on longer-term assets (e.g. Treasury yields)
Federal Funds

- What are Federal Funds?
  - Unsecured loans of reserve balances at Federal Reserve Banks of eligible institutions
  - Governed by the Board of Governors of the Federal Reserve System’s Regulation D (imposes reserve requirements on depository institutions)
  - In the current environment of increased excess reserve, the primary reason to borrow funds is to leave balances at the Fed for liquidity buffers and IOER

- Market Participants
  - Depository Institutions, Banks, Thrifts Eligible to **Lend**, **Borrow**, and receive **IOER**
  - Agencies and branches of foreign banks in the U.S. eligible to **Lend**, **Borrow**, and receive **IOER**
  - Federal Agencies (GSEs) Eligible to **Lend**
  - Government Security Dealers Eligible to **Lend**
Broadly in line with other money market rates, though secured and unsecured rates at times have diverged

April/May 2013 FOMC Minutes:
Several participants raised the possibility that the “federal funds rate might not, in the future, be the best indicator of the general level of short-term interest rates…”

July 2014 FOMC Minutes:
“Almost all participants agreed that it would be appropriate to retain the federal funds rate as the key policy rate, and they support continuing to target a range of 25 basis points for this rate at the time of liftoff and for some time thereafter.”
FRBNY and FR Board began new data collection: the *Report of Selected Money Market Rates* (FR 2420)

- Since April 2014, daily transaction is collected on federal funds, Eurodollar time deposits, and certificates of deposit (CDs) of all tenors
- Data collection covers U.S. depository institutions with total assets of $26 billion or more, and U.S. branches and agencies of foreign banks with third party assets of $900 million or more
- Accounts for approximately 80 percent of total fed funds outstanding
- Banks required to report by 7:00 am on the day after execution

Data fields include:

<table>
<thead>
<tr>
<th>All Product Types</th>
<th>Additionlly for CDs</th>
</tr>
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<tbody>
<tr>
<td>Volumes</td>
<td>Fixed or floating rate</td>
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<tr>
<td>Rates</td>
<td>Reset period</td>
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<tr>
<td>Maturity date</td>
<td>Reference rate</td>
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<td>Negotiable or non-negotiable</td>
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CD Data is reported with a 2-day lag; Fed funds and Eurodollar time deposits are reported with a 1-day lag.
Money Markets Rate Data for Market Monitoring

- FR 2420 data is expected to improve our ability to monitor money market conditions
  - Allows the Federal Reserve to collect both brokered and direct as well as term fed funds, Eurodollar time deposit transactions, and large CDs
- Enhanced data allow more flexibility
  - Allows for more expansive view into money market functioning
  - May be helpful for compliance with emerging financial benchmark best practices
  - Flexibility in considering broad-based unsecured funding rates for policy purposes
On February 2, 2015, the New York Fed announced\textsuperscript{1}:

- intention to transition the source of the data used to calculate the effective fed fund rate from the major fed funds brokers to the FR 2420 data collection; and
- expectations to begin publishing an overnight bank funding rate (OBFR) that is calculated using FR 2420-reported transactions in both federal funds and Eurodollars.

Liberty Street Economics blog: The FR 2420 Data Collection: A New Base for the Fed Funds Rate\textsuperscript{2}.

Liberty Street Economics blog: The Eurodollar Market in the United States\textsuperscript{3}.

\textsuperscript{1}http://www.newyorkfed.org/markets/opolicy/operating_policy_150202.html


\textsuperscript{3}http://libertystreeteconomics.newyorkfed.org/2015/05/the-eurodollar-market-in-the-united-states.html#.Vfv-4_n9xtA
Revisions to FR 2420

- Revisions are underway to expand and enhance the data collection effort
  - Refine fed funds definition to align with Regulation D
  - Expand Eurodollar collection
  - Add data fields such as country where Eurodollar transactions are booked and counterparty type
- Reporters will begin submitting revised data on October 20th, 2015
  - Federal Register Notice was published in April 2015
  - Public Comment Period ended in June 2015
    - Commentary focused on implementation date and 7am reporting deadline
Offshore U.S. Dollar Funding

Related markets:
- **Eurodollar deposits**: USD deposits in a bank or bank branch outside the U.S.
- **FX Swaps**: Essentially a repo transaction with currency as collateral.

Funding metrics:
- **LIBOR**: Benchmark for the average rate at which a leading bank can obtain unsecured funding in the London market.
- **LIBOR-OIS**: Spread between LIBOR and the Overnight Indexed Swap (OIS). Used to quantify stress in the interbank market, removes policy rate component from LIBOR rates, and therefore represents counterparty credit risk.
- **FRA-OIS**: Market expectations for LIBOR-OIS.
- **FX Swap Basis**: The basis is the premium paid by international institutions to obtain dollars in the FX swap market.

![Spread Between Term Interbank and Expected Federal Funds Rates]

![Cross-Currency Swap Basis*]

* *3-month LIBOR less 3-month overnight index swap (OIS); ** 3-month Forward Rate Agreement (FRA) less 3-month OIS three months forward (3x6 FRA-OIS spread)

* Sign of change inverted so widening indicates higher cost of swapping currencies to USD.

Source: Bloomberg
- Financial commercial paper (CP) outstanding balances have increased earlier in the year, but most recently remained steady.
- CP curve steepened in line with market expectations for Fed policy tightening, similar to the trend observed ahead of the liftoff in the last tightening cycle.
- Rates on lower-rated (A2/P2) nonfinancial CP reached their highest levels in more than two years.
Repurchase Agreement (Repo)

- What is repo?
  - Economically similar to a collateralized loan
  - Primary mechanism for temporarily adding or draining reserves – indirectly affect fed funds rates

- Tri-party vs. DVP
  - Securities dealers finance positions, intermediate cash and securities flows (matched-book)
  - Tri-party: Settle through Clearing Banks
  - DVP: OTC, settle bilaterally
General Collateral (GC) Repo Market Trends

GC repo rates for Open Market Operations (OMO)-eligible collateral are highly dependent on calendar date and collateral settlement dynamics

- Example: Treasury repo rates firm (increase) on settlement dates, soften on quarter-ends, as balance sheet constraints create collateral scarcity. Rates also rise.

GCF repo rates have been elevated during 2015 amid increased volatility, particularly near reporting dates.

- Stricter regulations and associated risk controls were named as the main drivers behind the recent dynamic in the GCF market.
Temporary Open Market Operations (TOMO)

- First mention of fixed-rate, full-allotment (FRFA) overnight reverse repurchase agreement (RRP) facility in minutes from July 2013 FOMC meeting
- September 20, 2013 Statement Regarding Overnight Fixed-Rate Reverse Repurchase Agreement Operational Exercise
  - FOMC authorized the Desk to conduct a series of daily overnight, fixed-rate RRP operations beginning the week of September 23, 2013 and potentially extending through January 29, 2014.
  - Following the January FOMC meeting, the authorization to conduct this exercise was extended.
Money Market Funds Behavior

- Prime money market funds (MMFs) are active investors in secured and unsecured markets. As of 8/31/15, 60 percent of prime MMF AUM was invested in CDs, unsecured CP, and repo.

- MMFs are most vulnerable to a tightening of available short-term investment opportunities on quarter-ends.
  - Quarter-end balance sheet reduction by foreign banks and primary dealers results in a harp decrease in activity in the overnight funding markets.
  - Regulatory reforms, including Basel III Leverage Ratio and intermediate holding company (IHC) reporting requirements contributed to reduction in foreign bank borrowings.
  - MMMF demand in O/N RRP operation increases on quarter-ends. This is particularly the case for prime funds as their private investment opportunities are drastically reduced.
On July 23, 2014 the SEC voted to adopt further amendments to Rule 2a-7, which governs MMMFs under the Investment Company Act. The reforms were designed, in part, to reduce MMMFs’ susceptibility to destabilizing runs by investors.

The two principal amendments to Rule 2a-7 require certain types of funds (1) to transact at a floating net asset value (NAV) per share, and (2) allow, under certain conditions, a fund to impose liquidity fees or redemption gates, subject to the fund’s board of directors.

Changes will go into effect after a two-year implementation period. Full compliance with new SEC rules required by October 2016.

Some MMF shareholders have a strong preference for a stable NAV, and aversion to fees and gates.
Money Market Funds Reform

- MMF complexes are starting to respond to SEC reforms by adjusting their product offerings, including fund conversions
  - E.g. Fidelity converting $114 bln. prime retail fund (Fidelity Cash Reserves)
- To date, MMF complexes announced about $140 billion in MMF AUM converting from prime to government
- Status of prime funds representing $850 billion in AUM has not been determined yet
- Market expectations for MMF reallocations are varied
  - Anecdotally, some market participants expecting total shift of up to $750 billion

![Expected Outflows from Prime Funds (% of respondents)](image)

<table>
<thead>
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<th>Expected Outflows from Prime Funds (% of respondents)</th>
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<tbody>
<tr>
<td>Institutional prime</td>
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<tr>
<td>Retail prime</td>
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<td>Survey received 247 investor responses.</td>
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<td>Source: Citi Money Market Industry Survey.</td>
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Risk Outlook

- Implementation of SEC Rule 2a-7 reform governing MMMFs
- Regulatory changes, e.g. Basel III, Dodd-Frank legislation (LCR, NSFR, SLR, LR)
- Tri-party reform
- Policy expectations, i.e. interest rates outlook, use of monetary polity tools