# Office of Debt Management

Initial Assessment of Potential 2-Month Treasury Bill Program

*November 3, 2015*

# Review

- *May 2015 Quarterly Refunding Statement:*
  - "Treasury believes that it is prudent to increase the level of Treasury bills outstanding … This increase in issuance will help to achieve our objective of lowest cost of funding over time and will enhance market functioning and liquidity."

- *May 2015 Minutes of the Treasury Borrowing Advisory Committee (TBAC):*
  - "The Committee suggested that Treasury focus this additional bill issuance in one- and three-month securities, and study **the potential for a two-month bill auction program**."

- *Primary Dealer Auction Size Survey (October 26, 2015): Scope for Increasing Supply*
  - By focusing additional bill issuance in one- and three-month tenors, auction sizes could soon surpass dealer-recommended maximums - if there are no additions to the current suite of securities.

| Tranche | Maximum auction size that could be issued without causing significant yield deviations from fair value ($bil) | |
|---|---|---|
| | Mean | Std. |
| Bills | | |
| 1-month | 51 | 3.5 |
| 3-month | 38 | 3.8 |
| 6-month | 37 | 3.1 |
| 1-year | 30 | 2.2 |

# Increasing Demand for Treasury Bills

- Elevated demand for high-quality liquid assets is a well-documented phenomena that existed well before the financial crisis and regulatory response (Stein et al 2011).

- As discussed during the May 2015 TBAC meeting, there is a variety of changes that have already increased, and are expected to further increase, demand for Treasury bills, including:[1]
  - Market participants expect money fund reform to result in a significant reallocation of assets from prime to government-only funds.
  - New regulations have increased the costs for banks to fund with "non-operational" deposits. Accordingly, expectations are that at least a portion of these deposits may transition to government-only money market funds (MMFs) as a substitute.
  - Bank liquidity rules have encouraged an increased demand for high-quality liquid assets (HQLA) and a reduction of shorter-term or less stable funding sources.
  - Leverage ratios have also encouraged banks to reduce capital-intensive, low-return businesses such as repo (an imperfect Treasury bill substitute).
  - Under new derivatives margin requirements being implemented pursuant to Dodd-Frank, Treasury bills as collateral have a favorable haircut treatment.



[1] Source: May 2015 TBAC Presentation

# Money Market Mutual Funds (MMFs)

- Market participants expect inflows into government-only MMFs could total upwards of $1 trillion over the coming year. If portfolio allocations were to remain consistent, incremental demand for Treasury bills from MMFs could conceivably rise by $200 billion over the same time frame.

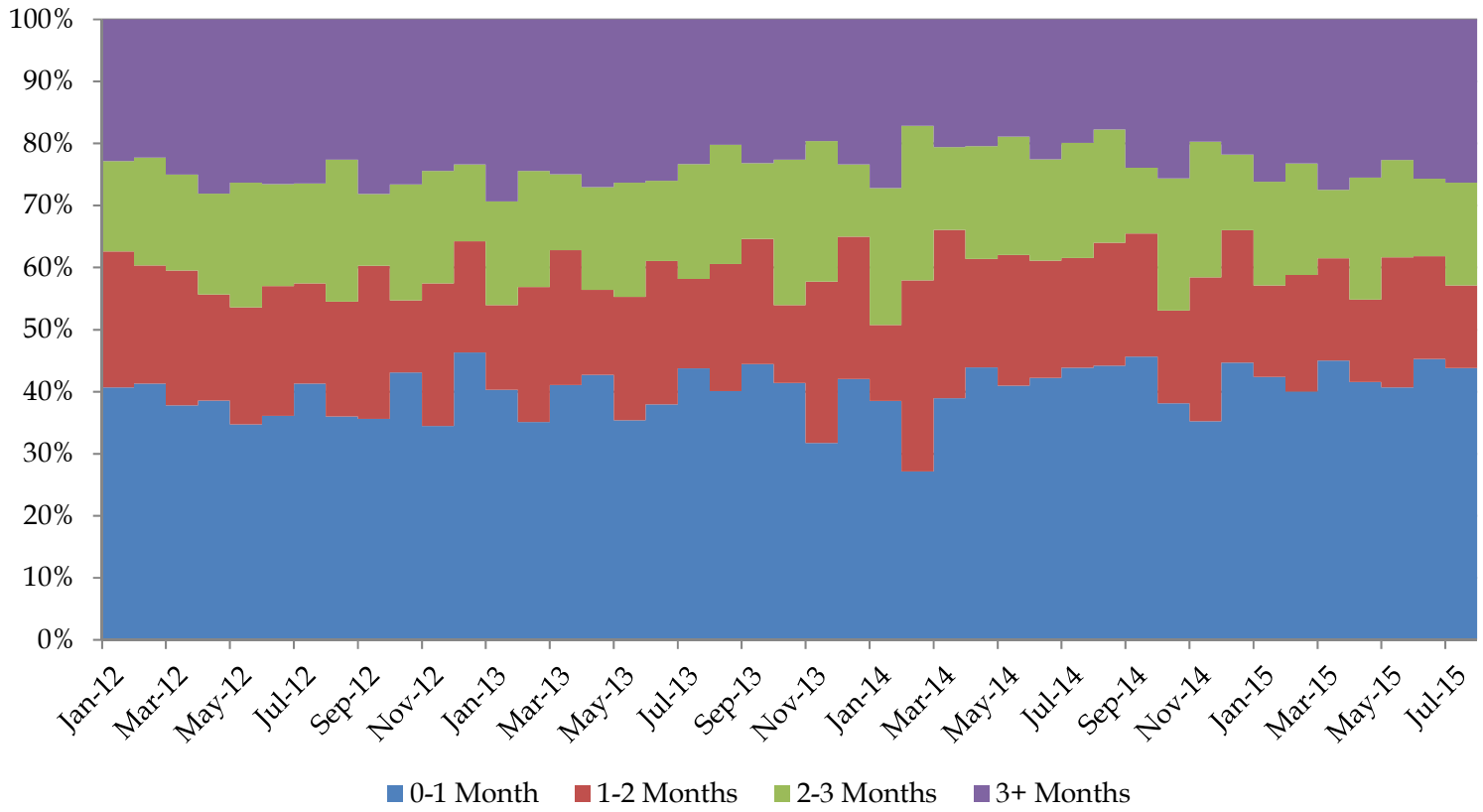
- MMFs tend to invest predominantly in short-maturity Treasury securities because of regulatory constraints that include:
  - The maximum weighted-average maturity (WAM) permissible for MMF portfolios is 60 days.
    - Note: In these calculations, the Treasury FRN is deemed to have a remaining maturity of one day.
  - The maximum weighted-average life (WAL) permissible for MMF portfolios is 120 days.
    - Note: Conversely, the actual maturity date of a Treasury FRN is incorporated into WAL.
  - 10 percent of assets must offer daily liquidity, for which Treasury securities qualify, and 30 percent of assets must offer weekly liquidity.

- Accordingly, expectations are that the majority of this additional demand will be focused in tenors of three months or fewer.

# Money Market Mutual Funds (MMFs), cont.

- From January 2012 through July 2015, 40 percent of government-only MMF Treasury holdings (excl. FRNs) typically mature within one month, and 76 percent within three months.[2]

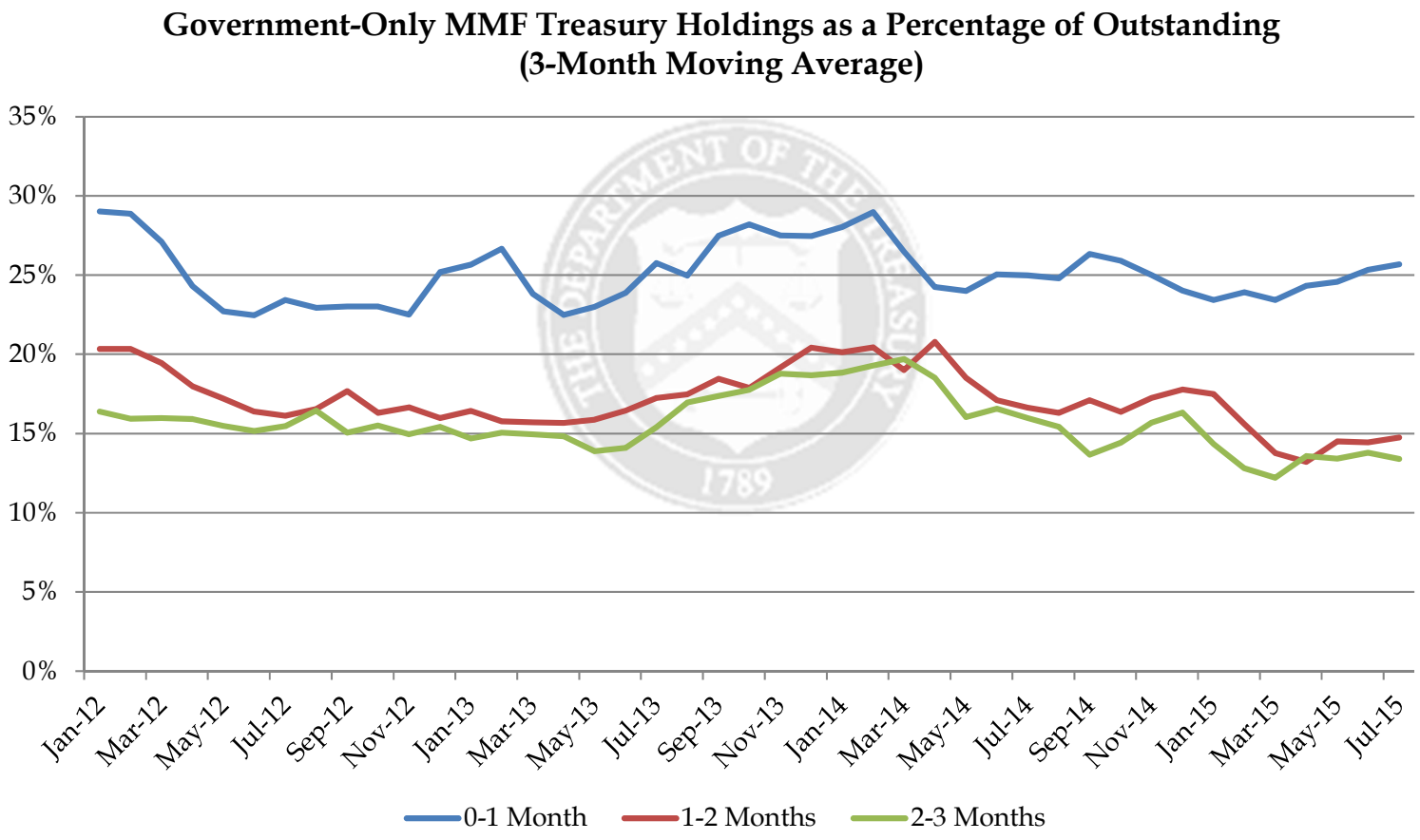
**Government-Only MMF Treasury Maturity Profile (Excl. FRNs)**




[2] Source: SEC and Department of the Treasury – Office of Financial Research

# Money Market Mutual Funds (MMFs), cont.

- Government-only MMFs typically own approximately 20 percent of Treasuries outstanding with less than three months to maturity.[3]

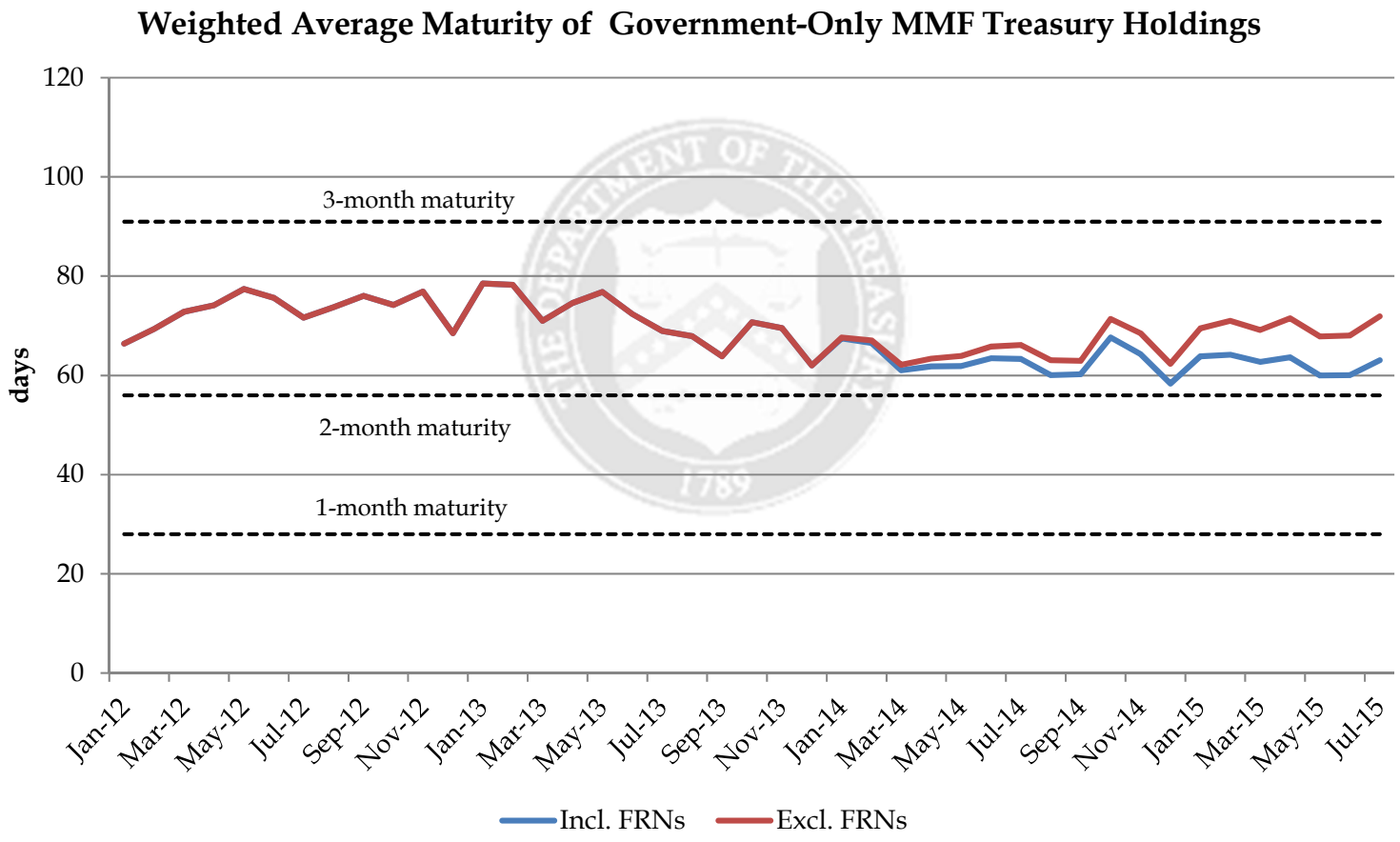





[3] Source: SEC and Department of the Treasury – Office of Financial Research

# Money Market Mutual Funds (MMFs), cont.

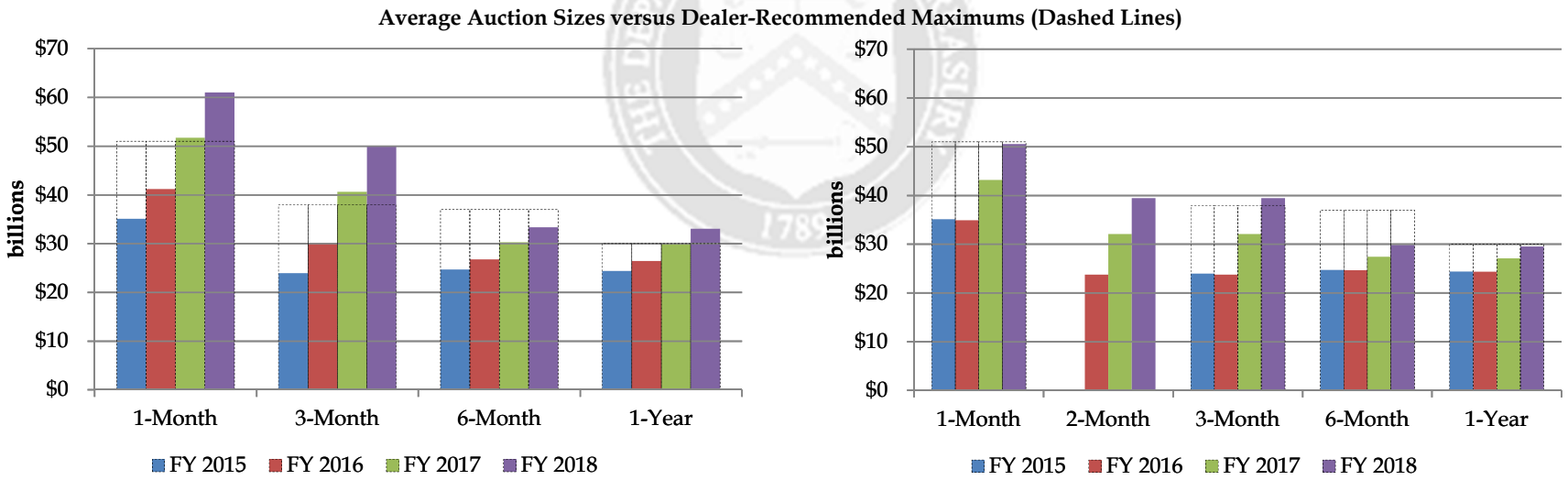
- The weighted-average maturity of government-only MMF Treasury holdings has oscillated between 60-80 days in recent years, roughly equidistant between a 2- and 3-month maturity.[4]




[4] Source: SEC and Department of the Treasury – Office of Financial Research

# Potential Benefits of a 2-Month Bill Maturity

- If Treasury were to meet funding gaps over the next three years solely using bills, biasing the additional supply towards 1- and 3-month tenors could result in rapidly increasing auction sizes.
  - Within 2-3 years, average bill auction sizes could exceed dealer-recommended maximums.
    - This dynamic might affect auction pricing, resulting in sizable variations from fair value.[5]
- Introducing a 2-month tenor would enable Treasury to moderate increases in auction size at other maturity points. Additionally, Treasury could more effectively ladder its maturity profile with a 2-month tenor, potentially reducing the size of future weekly adjustments to bill issuance.



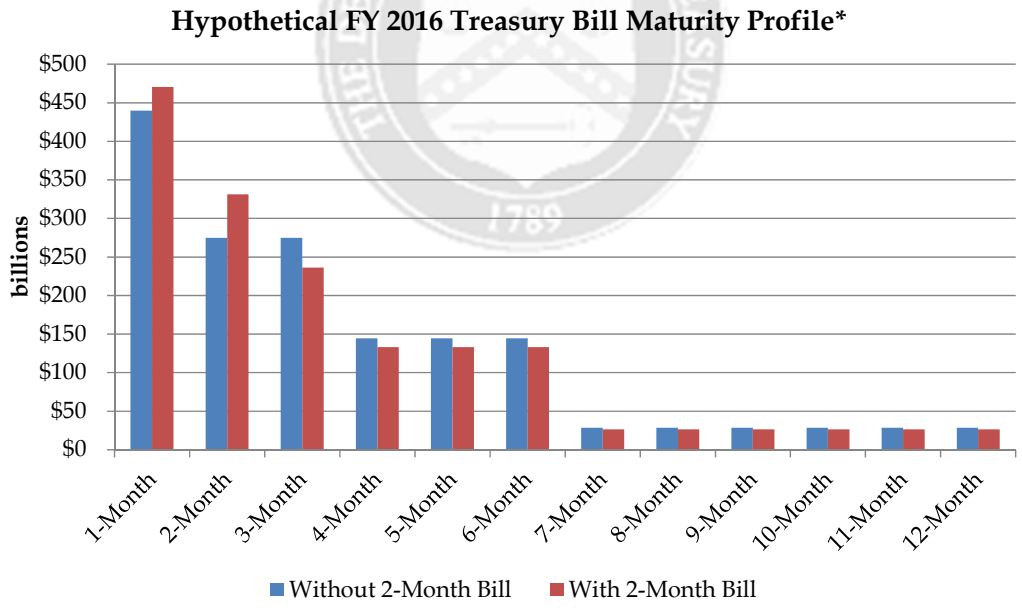

*Assumptions: 1) No SOMA reinvestment; 2) Increased auction sizes are biased 75-25 in favor of securities with tenors of 3-months or fewer; 3) Initial 2-month auction size is set equal to the 3-month.*



[5] During FY 2015, the 1-month auction size varied from a high of $50 billion to a low of $10 billion.

# Potential Benefits of a 2-Month Bill Maturity, cont.

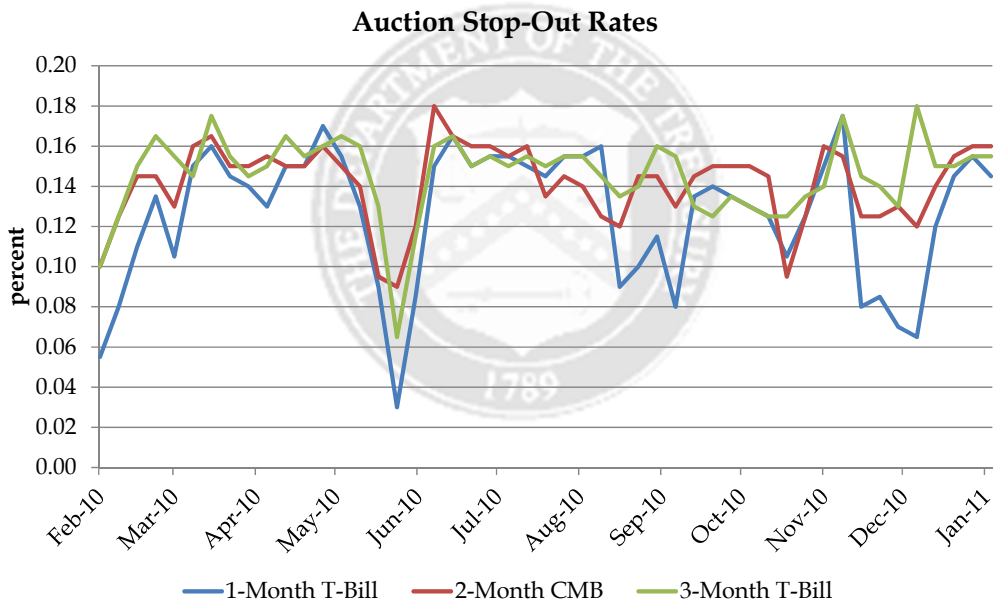
- A 2-month bill maturity could generate significant demand from MMFs, given their typical holdings.
  - For example, at eight weeks to maturity, a 2-month tenor would immediately fall within MMFs' 60-day WAM limit and would fall comfortably within MMFs' 120-day WAL limit.
  - Could present MMFs with greater opportunity to balance potential yield benefits as compared to a 1-month bill with lessened effects on WAM as compared to a 3-month bill.
  - Similar to Treasury, MMFs could also benefit from the ability to more easily ladder its maturity profile, and relatedly more easily manage its redemptions.




* Hypothetical maturity profile is generated using average auction sizes from slide 8.

# Potential Drawback of a 2-Month Bill Maturity

- When Treasury issued the 2-month CMB in 2010-2011 during the Supplementary Financing Program (SFP), auction demand was lackluster in comparison to the 1- and 3-month tenors.
  - This lackluster performance is evidenced by a 2-month rate that typically printed closer to the 3-month rate than the 1-month rate, despite a smaller auction size, as well as a heavier reliance on the primary dealers:




**Simple Averages**

| | Stop-Out Rate | Auction Size | Primary Dealer Allocation |
|---|---|---|---|
| 1-Month T-Bill | 0.126% | $28.3bn | 57.5% |
| 2-Month CMB | 0.142% | $25.0bn | 67.0% |
| 3-Month T-Bill | 0.146% | $28.2bn | 56.5% |

# Potential Drawback of a 2-Month Bill Maturity

- However, there are some important caveats to the aforementioned results - principally that:
  - The 2-month program was not formally introduced as a permanent addition to Treasury's existing suite of securities. Accordingly, investors could not be convinced that these securities were going to be a consistent part of Treasury's portfolio moving forward. Instead:
    - The 2-month was issued as part of the Supplementary Financing Program (SFP), which raised cash specifically for use in the Federal Reserve's lending and liquidity initiatives. This cash was held in a segregated account at the Federal Reserve and was not available to Treasury as a means to fund outlays.
    - The 2-month was issued as a cash management bill (CMB), and although issued weekly, the program was in effect for less than a year.
  - Moreover, the 2-month was issued at a time when funding needs were already at historical highs. This fact, in conjunction with the aforementioned caveats, may have affected auction pricing.

# FHLB 2-Month Discount Note Auction

- Results from the FHLB 2-month discount note (DN) auction program reinforce the premise that market demand for a 2-month Treasury bill could be robust.
  - The FHLBs typically auction the 2-month DN on a twice-weekly basis alongside 1-, 3-, and 6-month DNs.
    - On a relative basis, the FHLBs' 2-month DN auction yield has been roughly equidistant to the 1- and 3-month DN auction yields. In the year ending July 9, 2015, the average auction statistics were as follows:[6]

| | Simple Averages | |
|---|---|---|
| | Stop-Out Rate | Auction Size |
| 1-Month DN | 0.052% | $2.5bn |
| 2-Month DN | 0.073% | $4.1bn |
| 3-Month DN | 0.087% | $4.6bn |

    - Beginning on July 14, 2015, the FHLBs adjusted the maturity profile of their 2-month DN auction from nine weeks to eight weeks. Since that time, the yield relationship between those three securities has remained fairly consistent:

| | Simple Averages | |
|---|---|---|
| | Stop-Out Rate | Auction Size |
| 1-Month DN | 0.049% | $1.1bn |
| 2-Month DN | 0.106% | $3.6bn |
| 3-Month DN | 0.155% | $4.9bn |



[6] Source: FHLBanks Office of Finance

# Questions

- The introduction of a 2-month maturity would enable Treasury to moderate increases to issuance at its other tenors, lessening the risk of exceeding dealer-recommended maximums.
  - Given the projected increases to bill supply, should Treasury consider alternative issuance cycles to reduce the amount of securities settling on individual days: for example, Monday-to-Monday, Tuesday-to-Tuesday, Wednesday-to-Wednesday, or Friday-to-Friday?

- Given that Treasury conducts auctions on most business days, totaling upwards of 270+ auctions annually, where in the current calendar would a 2-month best fit? Considerations could include:
  - Day of week and time of day, as well as market holidays.
  - Length of time between auction and settlement.
  - Proximity to other Treasury auctions or Federal Reserve operations, given competing demands on market resources.

- How frequently should Treasury issue a 2-month (weekly, bi-weekly, monthly, etc.)?

- At its introduction, how large of a 2-month bill program would be advisable?

- To what extent might the 2-month cannibalize existing demand for 1- and 3-month Treasury bills?

# Committee Discussion