

Global Banking and Markets

Treasury Floating Rate Notes

DATE: April 2012

Recommendation summary

- **The USD 7trn money market should support significant FRN issuance from the Treasury. This would diversify the Treasury's funding by increasing its exposure to short term rates**
- **HSBC strongly recommends FRN issuance be concentrated in a short final maturity (maximum of two years) to comply with money fund maturity constraints**
- **A FRN is likely to offer limited benefits to the Treasury, and cost more increasing bill issuance. However, it should achieve a better outcome for the Treasury and investors than an alternative of holding bill supply constant and further increasing coupon issuance.**
- **HSBC favors the DTCC GCF repo index for the FRN. Investors should price a floater to achieve a given yield target and to compensate them for price and basis risk. This index offers the best compromise of the alternatives, so it should minimize the Treasury's long-term funding costs**

1. Would FRNs attract new investors into the Treasury market for a sustained period of time?

- **A Treasury FRN would create a new, large, and liquid money market security, so demand would develop to absorb the supply**
- **Treasury bills and repo are a large component in the nearly USD7trn money market, (page 6). However, the FRN market is of modest size, with average annual issuance of roughly USD300bn/yr over the past two years for USD200mm or larger issues, based on Bloomberg league tables**
- **Treasury bill issuance significantly lagged the growth in coupon issuance, as a result of the Treasury's objective of increasing the average life of its debt**
- **Thus, demand for low price-volatility investments should support a Treasury FRN program**
- **That said, investors would likely prefer increased bill issuance rather than a new FRN if that was an option.**

2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

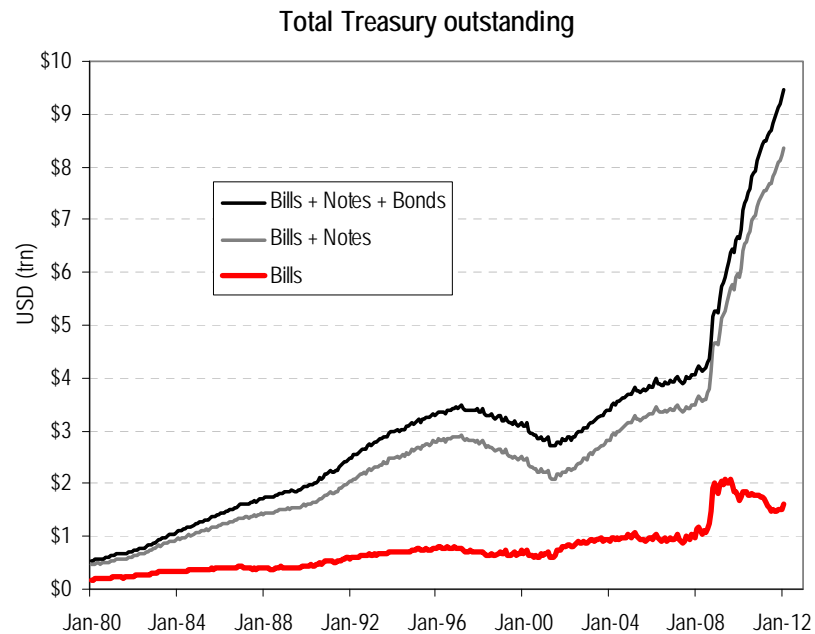
Favourable conditions for a Treasury FRN

- **The supply of money market assets, both from the Treasury and the private sector, has been falling (pages 5 and 6).**
- **Bill supply is not expected to increase given the Treasury's desire to increase the average life of its borrowing**
- **A Treasury FRN would provide an alternative, low volatility, investment option for traditional bill and money market investors in the face of limited supply**
- **FRNs are an established market, accounting for roughly 20% of US bond issuance in 2011, but this sector is small in size compared to the money market**
- **Traditional fixed rate Treasury note and bond investors may also participate in a Treasury FRN based on their views of its valuation and macro-economic conditions**

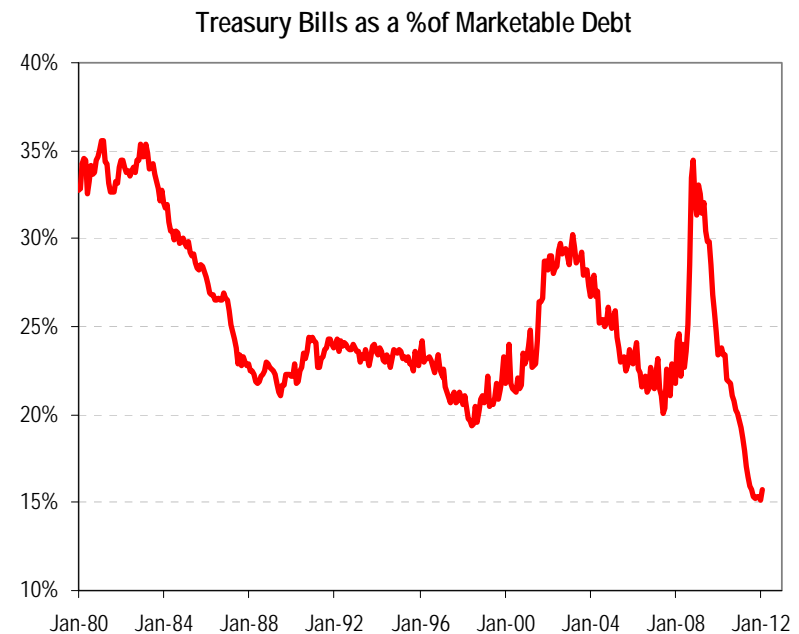
2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

Coupon Treasuries outstanding increased by over USD 5trn since 2008, while bill supply increased only USD 0.5trn

Bills outstanding are now at a record low as a percentage of public debt



Source: US Treasury, Bloomberg

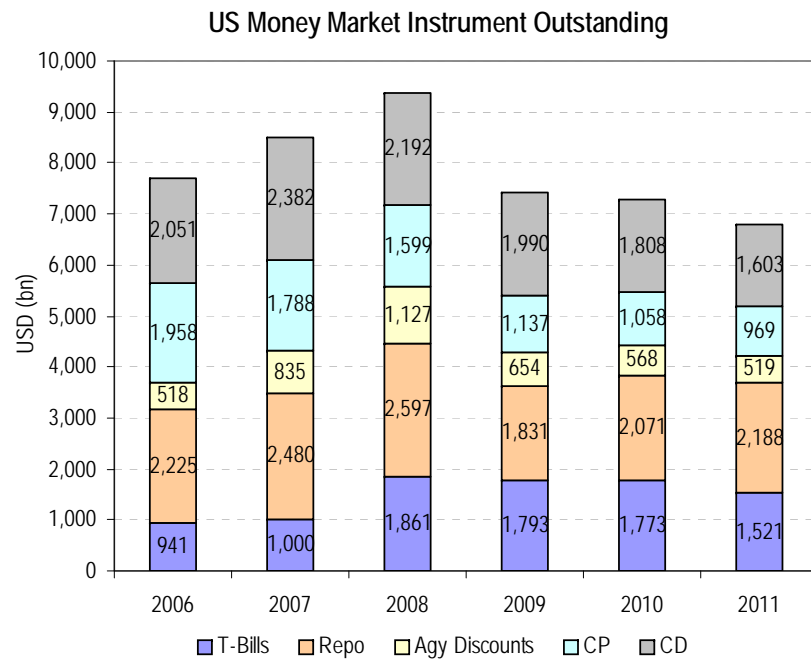


Source: US Treasury, Bloomberg

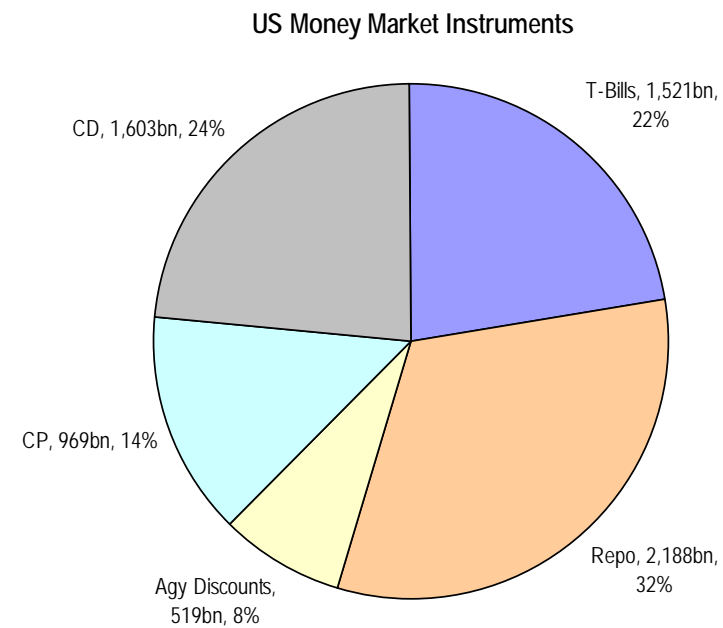
2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

The supply of short-duration assets available to investors have been shrinking

Bills and repos make 54% of the assets in the money market.



Source: SIFMA, Federal Reserve Bank of New York



Source: SIFMA, Federal Reserve Bank of New York

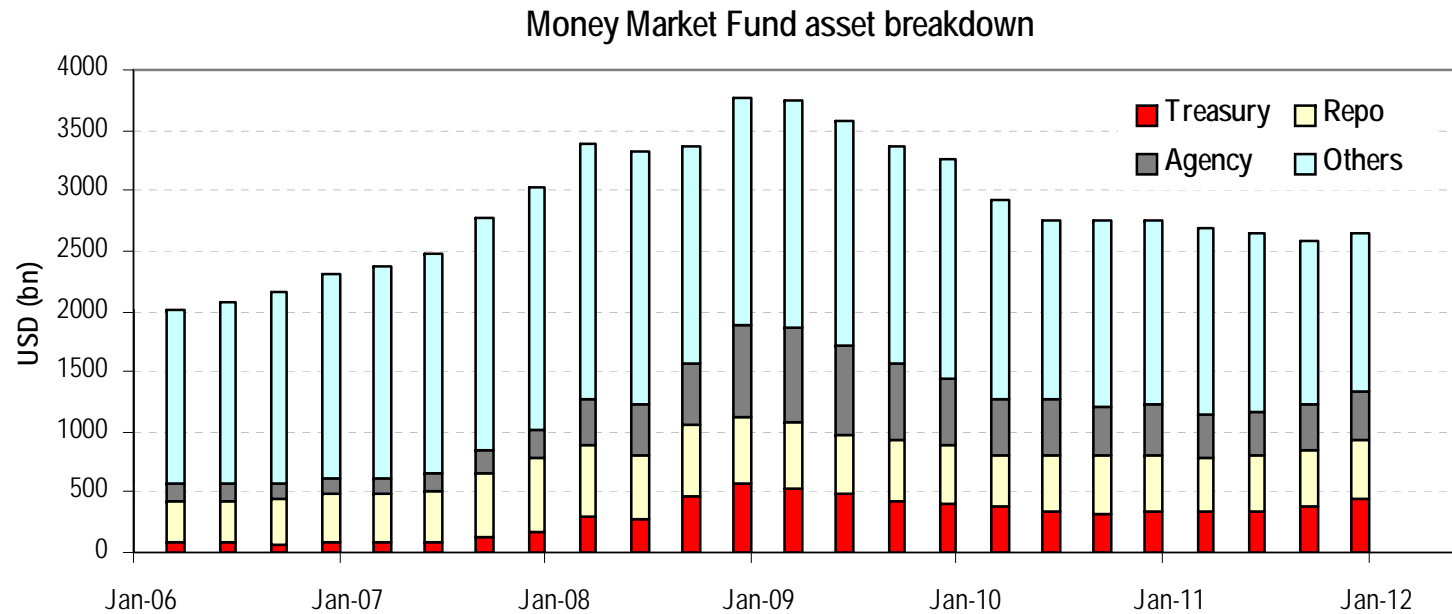
2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

Money market funds

- **Money market funds are a major source of demand for short duration assets. However, assets under management at money funds have fallen from a peak of USD 3.9trn in 2009 to USD 2.6trn (page 8).**
- **Money market funds hold about 1/3 of all money market assets. This sector is unlikely to grow quickly as low market rates limit its attractiveness to investors**
- **SEC regulations limit the maximum maturity to 25 months and a portfolio's weighted average maturity to a maximum of 60 days. A floater should have a maximum maturity of two years to be eligible for such funds; a shorter maturity would be more attractive**
- **Money funds hold roughly 30% of the outstanding bill supply and 22% of outstanding repo positions. They are an important, but not the only, buyer in the money market**

2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

Assets held by taxable money market funds show Treasury bills and repos make up roughly 1/3 of total assets.



Source: Flow of funds report

2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

Total return managers

- **Many of these money managers are benchmarked versus total return indices. The most common indices include fixed rate securities maturing in one year or more. A Treasury FRN would not be included in the typical benchmark. This may limit demand from these investors, as was the case with TIPS**
- **A liquid floating rate note would be an attractive investment for these investors in some economic environments; it would not be so in others**
- **Demand would depend upon the steepness of the yield curve and the expected path of interest rates**
- **A derivatives market on the underlying index would allow an arbitrage between fixed- and floating-rate cash flows on Treasury securities and likely increase participation by these investors**

2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

Bank and insurance companies

- **These investors seek to earn a return on assets that is greater than their cost of funds. The low yield of a money market asset means that it would appeal to these investors in a limited way**

2. Would a Treasury FRN help meet the investment needs of retail and institutional investors?

Central banks

- **Central banks held USD350bn in Treasury bills (nearly 25% of the supply) and USD3.3trn in coupon Treasuries (nearly 40% of the supply) at the end of 2011. These investors have a preference for safe, liquid investments that would fit well with a Treasury floater**
- **They are also conservative and may be slow to commit to a new market**
- **Floater would be a natural alternative to rolling maturing Treasury bills as a core investment strategy for central banks**

3. How liquid would you expect FRNs to be in the secondary markets?

- **A Treasury FRN would be less liquid than comparable maturity coupon Treasuries, but more liquid than TIPS, a more specialized product**
- **The FRN would tend to appeal more to a buy-and-hold investor:**
 - **Trading costs would be higher than for other money market assets. A basis point bid-to-offer on a two-year floater would have a dollar value eight times that of a three-month bill and twenty-four times that of a one-month bill.**
 - **By its design, a FRN would be less sensitive to macroeconomic events than a fixed-rate note. This would appeal to investors, but make it less attractive to traders**
- **HSBC anticipates a bid/offer spread of ½ to 1bp for a two-year benchmark and 1bp to 2bp for a seasoned issue**
- **Given lower liquidity, an FRN's pricing is likely to be more sensitive to large market flows than coupon Treasuries. This market impact is another measure of liquidity**

4. What is the ideal structure for a Treasury FRN?

a. What is the ideal final maturity for a Treasury FRN?

- **HSBC believes strongly that a Treasury FRN program should concentrate issuance in short intermediate maturities**
- **A new issue yield curve could be created with maturities spread between benchmark points of one to five years. However, market acceptance is expected to fall as maturity increases**
- **Given investors' historical preference for short to intermediate maturity floaters, HSBC believes that maturities longer than two years would be suboptimal for Treasury floaters**
- **A FRN could be issued in the TIPS auction week**
- **If issue sizes are expected to be less than USD 20bn, then a quarterly maturity with monthly re-openings should be used.**

4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

General considerations for an index

- **An overnight rate index, such as DTCC repo or Federal funds effective, would minimize the interest rate volatility of the floater’s price**
- **Shorter maturity indices should appeal to money market funds where price volatility is a significant concern given their commitment to redeem funds at par. Spread changes are likely to be the main cause of price volatility for this product**
- **A one-month or three-month index based on Treasury bills is possible, as most current floaters are based on these terms versus the LIBOR index**
- **An index with a liquid derivatives market aids arbitrage between fixed- and floating-rate bonds, which should improve liquidity and pricing for a FRN**
- **A 0% floor on coupon payments is needed to prevent operational problems for investors**

4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

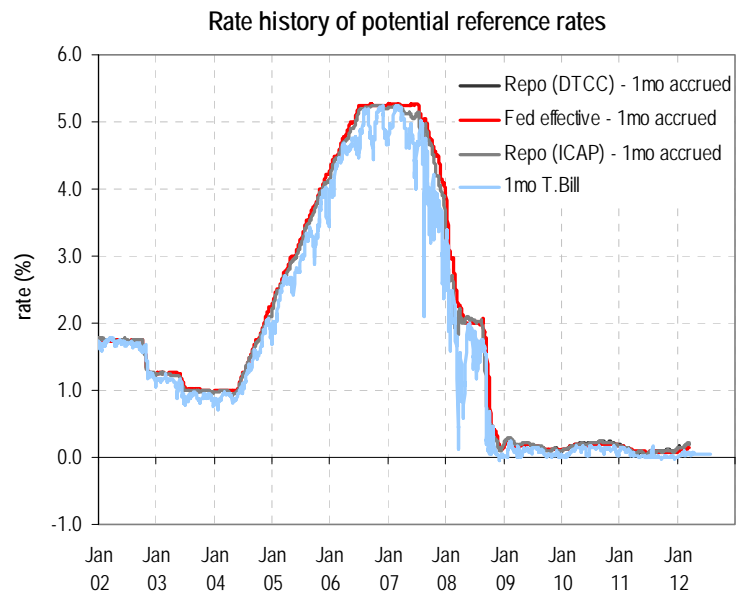
Bill index

- **The FRN should be set off the most recent bill auction, ensuring a transparent and broad investor base for the FRN coupon**
- **A one-month T-Bill auction would set a monthly coupon payment. Alternatively, a three-month T-Bill auction would set a quarterly coupon payment**
- **LIBOR index FRN coupons match coupon reset frequency with payments: A Treasury bill based FRN should follow this practice**
- **Treasury bills tend to get a “safe haven” bid when there is liquidity or credit risk. In contrast, the Fed funds index tends to cheapen during these periods (page 16)**
- **Investors price FRNs with different indices to achieve an expected yield target, so an index with a lower yield would result in a wider spread (page 17)**

4. What is the ideal structure for a Treasury FRN?

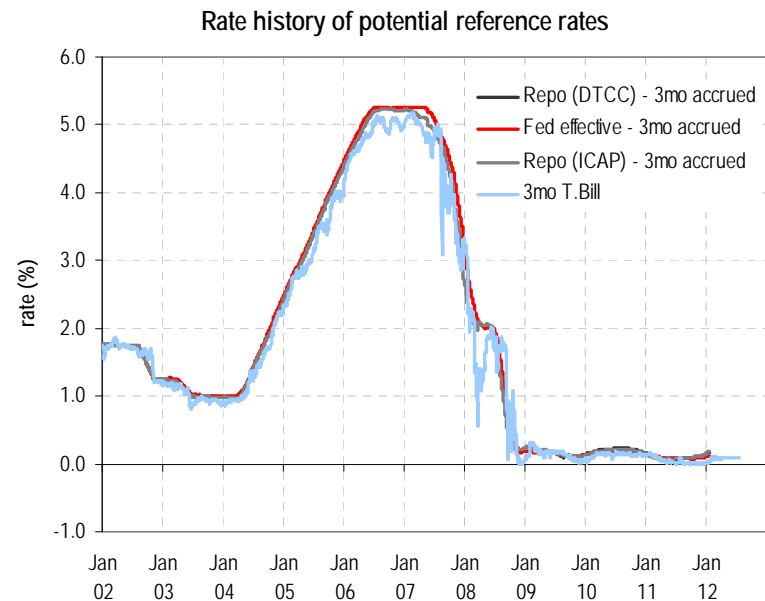
b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

Safe haven and liquidity demand may cause one-month bill yields to fall versus other indices. Chart shows one-month holding period return simulation for bills versus other indices



Source: US Treasury, Bloomberg

Three-month bill shows these effects but to a lesser extent

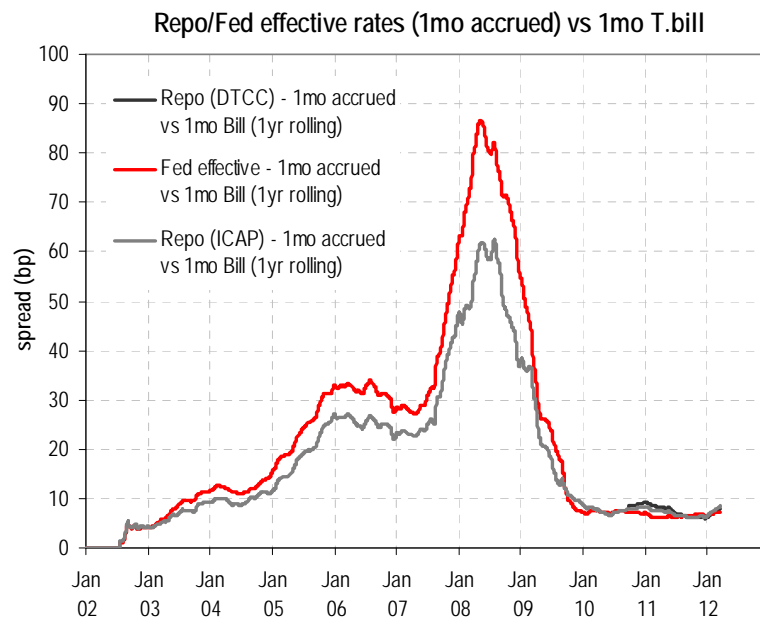


Source: US Treasury, Bloomberg

4. What is the ideal structure for a Treasury FRN?

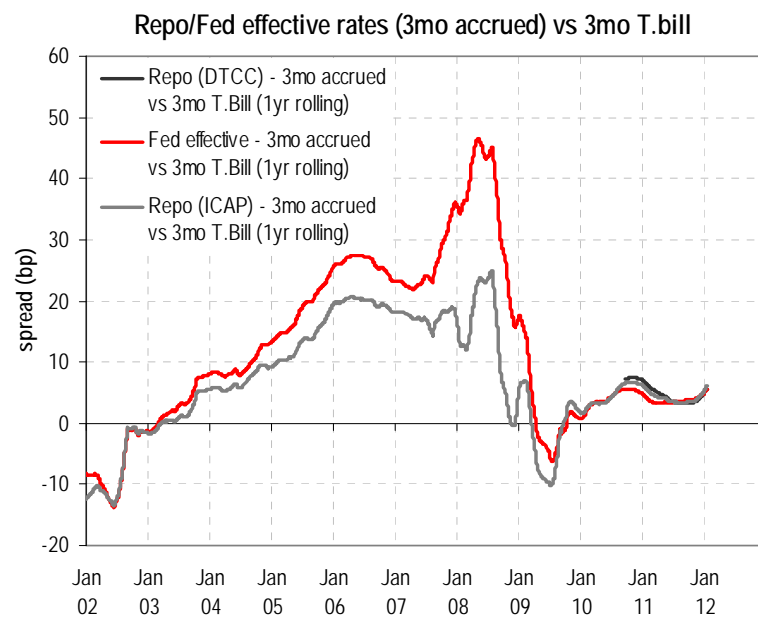
b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

Historical spread needed for one-month bill to equalize return to repo and Fed funds indices over rolling one-year period



Source: US Treasury, Bloomberg

Historical spread needed for three-month bill to equalize return to repo and Fed funds indices over rolling one-year period



Source: US Treasury, Bloomberg

4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

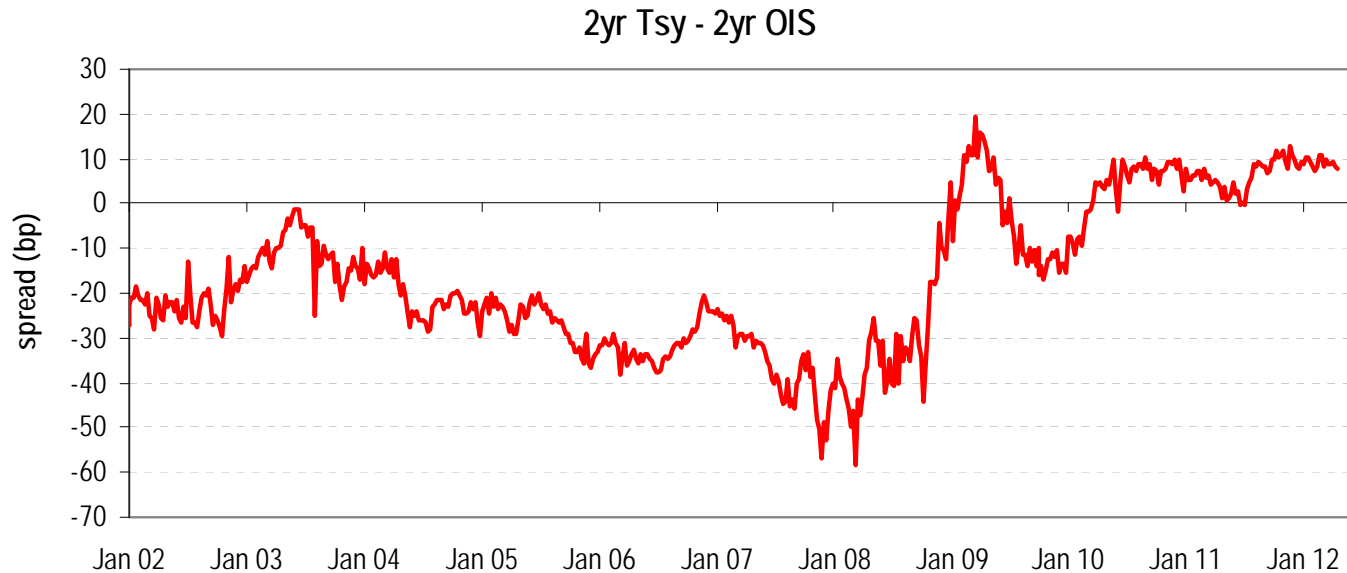
Federal funds effective index

- **The spread between two-year Treasuries and OIS implies a “fair value” spread for a two-year maturity Fed funds floater of -30bp in 2006 and +10bp today (page 19)**
- **The exposure to bank credit and Fed actions means the funds index has idiosyncratic liquidity and credit risks compared to a bill or repo based index**
- **The funds rate reacted more than other money market rates when the FDIC instituted a 10bp fee on bank balance sheets, for example**
- **This volatility could result in increased costs to the Treasury given the likely shifts in the fair value spread and investors’ dislike of volatility**

4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

The two-year Treasury shifted from trading through the Fed funds effective OIS swap to above it. This reflects the shift in the structure of the funds market due to QE. The ultimate cost of outstanding Fed funds floaters to the Treasury would likely increase as the Fed withdrew liquidity



4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

DTCC repo index

- **DTCC repo index is the weighted average of the interest rates paid each day on the General Collateral Finance Repurchase agreements based on US government securities by the Deposit Trust & Clearing Corporation**
- **The rate is based on a large daily transaction volume, between USD100 and USD200bn per day over the past year, which ensures market driven price discovery**
- **This index reflects a major investment alternative in the money market and is highly correlated to other money market rates (pages 6 and 17)**

4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

Cross currents for supply and demand for repo

- **Basel III and Dodd/Frank rules for banks and dealers are likely to limit balance sheet sizes and increase the cost of committing balance sheets to the low-margin repo market**
- **This should increase relative demand for securities, such as FRNs, while reduced supply could lower rates**
- **The Federal Reserve will likely use repo as part of the exit strategy for its over USD1.5trn in excess reserves. (The excess reserves represent nearly 50% of money fund assets.)**
- **This would increase the supply of repo significantly but it would likely affect all money market rates rather than just repo**

4. What is the ideal structure for a Treasury FRN?

b. What are the pros and cons of using the following reference rates for a Treasury FRN: Treasury bills, a Treasury general collateral-based repurchase agreement (“repo”) rate, and the federal funds effective rate? Are there any other reference rates that merit consideration?

Derivatives on Treasury FRN Index?

- **In theory, money market investors or dealers would not need to hedge a Treasury floater as it should simply accrue coupon and have low price volatility**
- **However, in practice, the ability to compare the floater to fixed-rate Treasury securities should help to limit any discount and increase liquidity in the FRN market**
- **A swap market for GC is developing and would likely benefit from a Treasury security based on the GC index. The OIS market is large and liquid**
- **Bills do not currently have a liquid derivative market. The risk from safe haven and liquidity demands, and the possibility of negative repo rates, makes this a more difficult derivative market to develop**

4. What is the ideal structure for a Treasury FRN?

c. What would be the appropriate coupon payment frequency of a Treasury FRN?

The ideal structure depends upon the index chosen by the Treasury

- **A daily accrual index, such as repo or Fed funds, should have a monthly or quarterly coupon payment**
- **A monthly Treasury bill index setting should have a monthly coupon**
- **A three-month Treasury bill index setting should have a quarterly coupon payment**

5. What changes to trading, settlement and accounting systems would be needed to accommodate FRNs?

- **HSBC Securities discussions with investors find any of the discussed benchmarks would require no meaningful adjustments to trading, settlement, and accounting systems for most investors**

6. Are there any other operational issues that Treasury should be aware of when deciding on whether to issue FRNs?

- **No. We expect the issuance procedures would be consistent with other Treasury issues, which investors and dealer are quite familiar with**

7. Given the above considerations, are FRNs a useful debt management tool that Treasury should consider?

- **Yes, a FRN market should support significant issuance from the Treasury**
- **It would diversify the Treasury's funding mix by increasing its exposure to the money market area**
- **Money market investors should benefit from a higher yielding, short duration investment alternative**