



The Depository Trust & Clearing Corporation

# DTCC GCF REPO INDEX



**DTCC**



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## INTRODUCTION

On November 1, 2010 The Depository Trust & Clearing Corporation (DTCC) began publishing the financial service industry's first index to list average daily interest rates for the multi-billion dollar daily market in General Collateral Finance repurchase agreements (GCF Repo) transactions. The DTCC GCF Repo Index® lists the average interest rate paid each day for the most traded general collateral repos involving U. S. Treasury securities, federal agency securities and mortgage-backed securities issued by Fannie Mae and Freddie Mac. The index also records the total par value of the GCF Repo transactions each day.

The DTCC GCF Repo Index is based on an average daily funding of \$331 billion (dealer to dealer overnight trades and excludes inter-dealer broker activity) in the GCF Repo funding market. The GCF Repo process makes it difficult for the index to be manipulated because actual transactions are completed unlike other benchmarks which use estimates from 19 dealers. The DTCC GCF Repo Index provides transparency to the market, helps the Fixed Income Clearing Corporation's (FICC) members manage risk, and assists regulators in conducting risk management oversight in the large and dynamic GCF Repo market.

The Index was developed in response to concerns of the Treasury Markets Practice Group (TMPG), sponsored by the Federal Reserve Bank of New York, regarding the need for enhanced transparency in the Treasury, agency debt and mortgage-backed securities markets.

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## GCF REPO TRADE PROCESSING

**T**he GCF Repo® service enables the 72 dealers who are members of the Fixed Income Clearing Corporation's (FICC's) Government Securities Division (GSD) to trade GCF Repos (based on rate, term, and the underlying product), throughout the day without requiring intra-day, trade-for-trade settlement on a delivery versus payment basis.

Dealers execute GCF Repos through inter-dealer brokers, who are also members of GSD, on an anonymous or "blind" basis. Brokers are then required to enter data on GCF Repo transactions for submission to FICC shortly after trade execution. Upon receipt of the data, FICC immediately reports the transaction details to the dealers. The most recent trades and position information are displayed simultaneously. Position information is available both at the individual CUSIP level and the cumulative, overall level.

When GSD receives the data, it becomes the settlement counterparty to each dealer and guarantees settlement of the transactions. GCF Repo transactions are settled on a tri-party basis, which requires dealer participants to have an account with either one or both of the participant clearing banks – The Bank of New York Mellon or J. P. Morgan Chase.

GCF Repo participants trade in generic CUSIP numbers throughout the day and then, after the cutoff of trading, GSD conducts an afternoon net exclusively for GCF Repo activity. To establish a single net receive or deliver position in each generic CUSIP, the netting process combines each dealer's new GCF Repo activity eligible for settlement with the dealer's carry-over activity, including previous term and previously submitted forward-starting activity that has reached its start leg settlement date.

For each such CUSIP, a dealer member is either a net securities borrower (i.e. money lender) or a net securities lender (i.e. money borrower). Bank of New York Mellon and J. P. Morgan Chase provide the mechanism for allowing a chain of simultaneous collateral and cash movements to occur between GSD and its dealer members, and also to allow those securities to be available for various purposes, including tri-party processing and bank loans.

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## INDEX COMPOSITION

During the development phase of the DTCC GCF Repo Index®, it was determined that not all GCF Repo® eligible CUSIPs were appropriate to include in the index calculation because their activity could not support the daily production of an index. As a result, the following three most traded CUSIPs are included in the index:

- U. S. Treasury < 30 year maturity (371487AE9) – Average Daily Volume = 166B
- Non-Mortgage Backed U. S. Agency Securities (371487AH2) – Average Daily Volume = 22B
- Fannie Mae & Freddie Mac Fixed Rate MBS (371487AL3) – Average Daily Volume = 102B

The following CUSIPs are not used in the index calculation:

- U. S. Treasury <10 year maturity (371487AD1)
- Strips (371487AF6)
- Fannie Mae and Freddie Mac Adjustable Rate MBS (371487AM1)
- GNMA (371487AQ2)
- GNMA Adjustable Rate MBS (371487AR0)

*\* Year-to-date through December 31, 2013*



# AGGREGATION AND CALCULATION OF THE INDEX

## Securities included in the computation of the index:

- Overnight transactions that are completed on a daily basis for each of the three CUSIPs

## Securities not included in the computation:

- Term trades (transactions where settlement date equals trade date plus two business days or greater)
- Forward start repos

For each of the CUSIPs a weighted average rate is calculated on a daily basis using the following formula:

Par weighted rate =  $\text{SUM (for each overnight trade: Dollar amount} \times \text{GC rate} / \text{SUM (for each overnight trade: Dollar amount)}$

<b>Example:</b>	<b>Trade Amount</b>	<b>Rate</b>	<b>Sum</b>
	\$3,000,000	.03	90,000
	\$2,000,000	.05	100,000
	\$2,000,000	.04	80,000

$$270,000 / \$7,000,000 = .0386 \text{ weighted average rate}$$

Prior to the index being posted, each CUSIP undergoes a validation check where the current weighted average rate is compared to the prior day's rate. In the event that the current rate fails the validation check, GSD Operations reviews the underlying transactions for inadvertent rates. If all rates are deemed satisfactory, the index can then be posted.

The DTCC GCF Repo Index® is posted to the DTCC website ([www.dtcc.com](http://www.dtcc.com)) and to Bloomberg (gcfr) on a daily basis at approximately 3:30 p.m. EST. Both postings are automated and include the following information for each of the three CUSIPs:

- Weighted average rate of GCF Repo® transactions submitted each day for clearing to DTCC's FICC,
- 52-week high and low weighted average rates,
- The previous week's weighted average rate, and
- Total par value, that is, the total nominal dollar value in US\$ billions.

The DTCC website provides graphs which show the activity over the past 12 months. It also allows the user to view each of the CUSIPs separately or against one or both of the other CUSIPs. Users also have the ability to view daily activity within each CUSIP.

For example, the Treasury CUSIP in the month of June, 2013 had a weighted average range that went from a low of 0.027 to a high of 0.142, while volumes ranged from \$105 billion to over \$200 billion daily.

Additionally, Securities Industry Financial Markets Association (SIFMA) posts the DTCC GCF Repo Index on their website ([www.sifma.org](http://www.sifma.org)) monthly.

## CONTROLLING INDEX MANIPULATION

Unlike other indices, the DTCC GCF Repo Index® is calculated using transactions that are settled on a daily basis. Various controls are in place to reduce the possibility of manipulating the index:

A check will be performed on each GCF Repo transaction comparing the rate of the current day's trade versus the previous day's published index rate, using a pre-determined variance. If the current trade falls outside of the tolerance, the transaction will be routed to an exception screen monitored by the GSD operations department. Operations will notify the dealers that a trade was flagged, giving them the opportunity to cancel the transaction and submit new trades with a corrected rate, or confirming that the submitted trade is correct.

Access to trade entry is restricted to the DTCC operations and technology teams only, which prevents internal manipulation of the DTCC GCF Repo Index. All transactions processed by these DTCC teams are captured on an audit report and reviewed by management. In addition, all of the trading parties have full transparency into the trade, which becomes part of their settled positions. Collaboration among trading parties to manipulate the DTCC GCF Repo Index, while unlikely, is possible, but would require cooperation between two broker-dealers as well as the inter-dealer broker.

The secure file transfer of the DTCC GCF Repo Index to DTCC's website ([www.dtcc.com](http://www.dtcc.com)) and Bloomberg is done systemically through Fixed Income Data Online (FIDO), a system that was developed by DTCC in 2011. For submissions, DTCC sends the data to Bloomberg's DTCC GCF Repo Index page "gcfr."

An analysis was done to determine the average size of a transaction needed to move the DTCC GCF Repo Index one basis point. Data from the previous 5 months was used and all three CUSIPs were analyzed. The results are as follows:

		National required To Move up 1bp		National required To Move down 1bp	
		Times Maximum national	% of total national	Times Maximum national	% of total national
Average	TSY	10.68	30%	10.12	30%
	Agency	7.65	44%	7.06	42%
	MBS	11.65	37%	10.86	35%

As the data shows, in order to move the index up or down 1 basis point, a transaction would need to be 30%-44% of the total notational. The detailed examples below highlight the size of trades needed to move the index:

### EXAMPLES

#### October 12, 2011 – CUSIP 371487AL3 (FNMA/FHLMC Fixed)

- Maximum notational = 4B
- Total Notational = 145.82B
- Move the index up 1 point = 91.14B (22.78 times the maximum ); 63% of the overall volume
- Move the index down 1 point = 27B (6.75 times the maximum); 19% of the total notational

#### November 16, 2011 – CUSIP 371487AH2 (Agency)

- Maximum Notational = 2B
- Total Notational = 42.56B
- Move the index up 1 point = 17B (8.5 times the maximum); 48% of the total notational
- Move the index down 1 point = 3.4B (1.7 times the maximum); 8% of the overall volume

## INDICES IN THE MARKET

**L**IBOR is the interest rate that banks charge each other for one-month, three-months, six-months and one-year loans. The rate is compiled by the British Bankers Association (BBA), and is published at 11:00 a.m. EST each day in conjunction with Reuters. It is comprised from a panel of banks representing countries in each of the quoted currencies. Based on the results of their survey, the BBA quotes the LIBOR rate for each of 10 currencies.

LIBOR is used to set the rates for adjustable rate loans, and interest rate swaps based on short LIBOR rates currently trade on the interbank market. Additionally, Chicago Mercantile Exchange's Eurodollar contracts are based on 3 month US dollar LIBOR rates.

Overnight Indexed Swaps (OIS), considered less volatile than LIBOR, is an interest rate swap whereby the periodic floating rate of the swap is equal to the average of an overnight index. In the U. S., OIS rates are calculated by reference to the daily fed funds rate. The spread between OIS rates and LIBOR are an important measure of risk and liquidity in the market. A higher spread is typically interpreted as indication of a decreased willingness to lend by major banks, while a lower spread indicates higher liquidity in the market.

The Federal Funds (Fed Funds) rate is the interest rate at which depository institutions lend balances to one another overnight. The Fed Funds target rate is determined by the Federal Open Market Committee (FOMC), which normally occurs eight times a year.

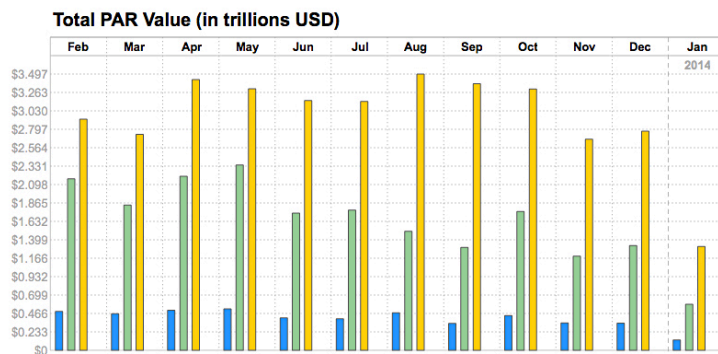
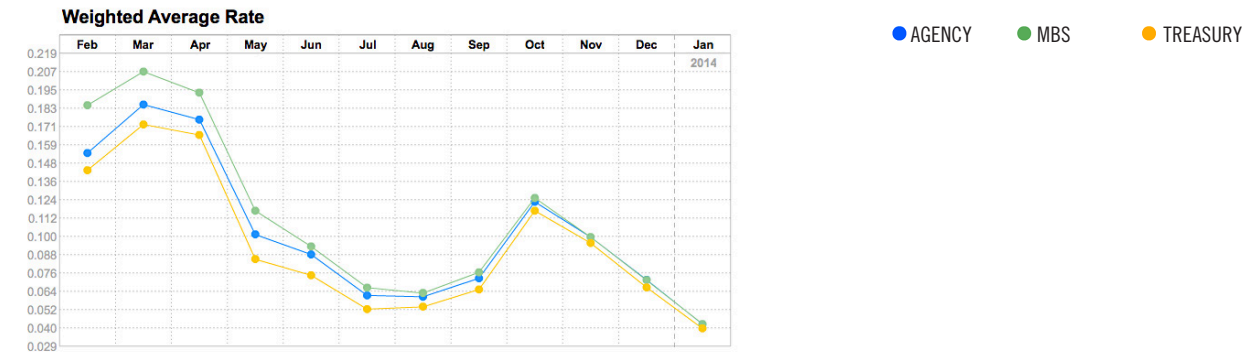
### COMPARISON OF INDICES

	DTCC	LIBOR	OIS	FED FUNDS
<i>Measured by</i>				
Executed Transactions	YES	NO	YES	NO
Number of Dealer Inputs	Over 70 members	19 U.S. banks	Unknown	N/A
Volume Based	Volumes posted daily	NO	NO	NO
Multiple Product Sets	MBS/Treasury/Agency	1 Month 3 Months 6 Months 1 Year	N/A	N/A

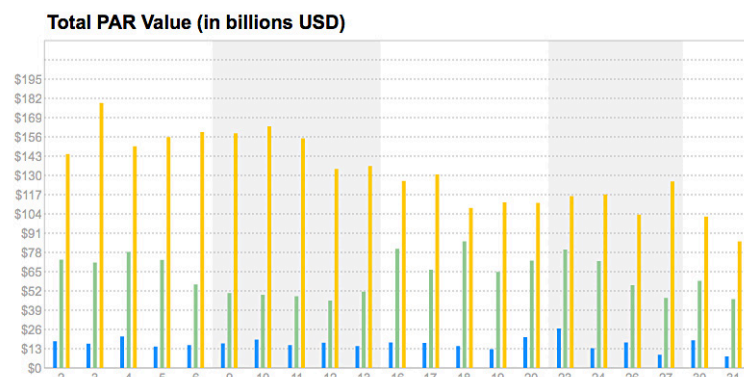
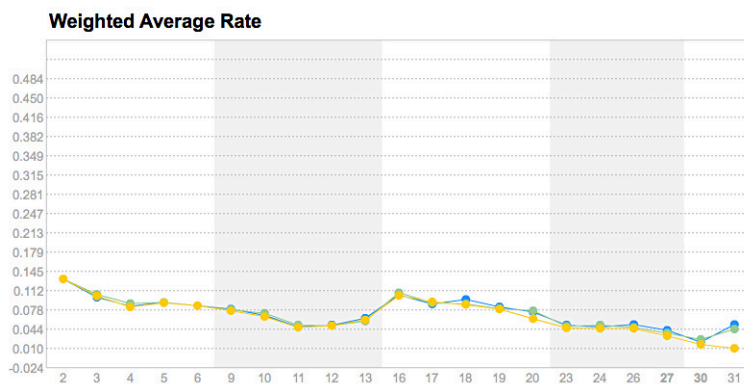


# DTCC GCF REPO INDEX: SAMPLE DATA

12-MONTH DATA • 2013



MONTHLY DATA • DECEMBER 2013



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### Disclosure:

*This description is for informational purposes only. This Service is governed by applicable Rules, Procedures, and Services Guide for each DTCC subsidiary, which contain the full terms, conditions, and limitations applicable to this Service.*

*We may provide you with additional information about our products and services from time to time. If at any time you wish to be removed from our distribution list, please send an email to [PrivacyOffice@dtcc.com](mailto:PrivacyOffice@dtcc.com).*

