

SEPTEMBER 2010

# MUNICIPAL AUCTION RATE SECURITIES AND VARIABLE RATE DEMAND OBLIGATIONS

## Interest Rate and Trading Trends

Prepared by the MUNICIPAL SECURITIES RULEMAKING BOARD

## INTRODUCTION

Auction Rate Securities (ARS) and Variable Rate Demand Obligations (VRDOs) currently comprise nearly 15 percent of the \$2.8 trillion<sup>1</sup> municipal securities market. Both ARS and VRDOs have long-term maturities and short-term interest rates that reset periodically. In early 2009, the MSRB launched a transparency program to collect and disseminate interest rates and important descriptive information about these securities. This program provides investors and other market participants with centralized access to previously unavailable information.

The MSRB collects ARS and VRDO information through its Short-term Obligation Rate Transparency (SHORT) System and also collects related trade data through its Real-Time Transaction Reporting System (RTRS). These programs provide a comprehensive source of information about the ARS and VRDO markets. The MSRB's Electronic Municipal Market Access (EMMA) website at [emma.msrb.org](http://emma.msrb.org) provides free access to collected information. A description of ARS and VRDOs as well as the MSRB's transparency programs can be found at the end of this report.

This report summarizes key interest rate information for ARS and VRDOs from early 2009 through May 2010, including the following:<sup>2</sup>

- The number of ARS resets decreased 22 percent.
- Average interest rates for ARS set at auction with a seven-day reset frequency decreased 74 percent.
- Average interest rates for ARS set at the maximum rate with a seven-day reset frequency decreased 31 percent.
- The number of VRDO resets decreased 10 percent.
- Average interest rates for VRDOs with a seven-day reset frequency decreased 69 percent.
- Average interest-rates for VRDOs with a one-day reset frequency decreased 59 percent.

Also, summarized in this report is trading activity from January 2008 through May 2010.

- The number of ARS trades decreased 98 percent.
- ARS par volume traded decreased 97 percent.
- The number of VRDO trades decreased 70 percent.
- VRDO par volume traded decreased 38 percent.

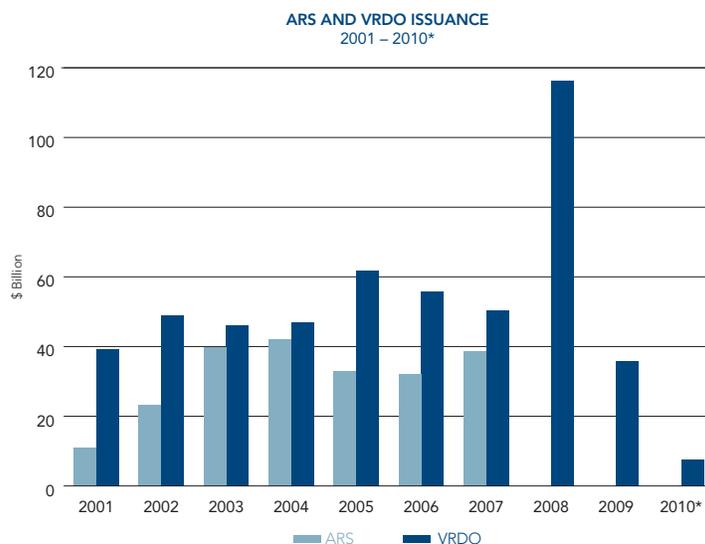
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<sup>1</sup> Federal Reserve statistical release, "Flow of Funds Accounts," June 10, 2010.

<sup>2</sup> ARS and VRDO data used in this report were derived from information collected through the MSRB's SHORT System. Certain reported ARS and VRDOs may have been excluded based on the lack of descriptive information available to the MSRB. The MSRB obtains some information on the characteristics of securities included in this report from Standard & Poor's Financial Services LLC and Thomson Reuters.

## OVERVIEW OF ARS AND VRDO MARKETS

ARS and VRDOs each represent significant components of the \$2.8 trillion municipal securities market — \$65 billion and \$339 billion, respectively.<sup>3</sup> However, these securities, particularly ARS, comprised a more substantial portion of the market in early 2008, with ARS outstanding totaling approximately \$200 billion.<sup>4</sup> Shortly after the broader financial crisis that began in the second half of 2007, the ARS market experienced widespread failed auctions and effectively “collapsed” in early 2008 resulting in no new ARS issuance since December 2007. Meanwhile, new issuance of VRDOs surged in 2008 as issuers replaced ARS debt with VRDOs as an alternative financing vehicle.



Includes securities with 13 months or more in maturity  
\* As of May 2010  
Source: Thomson Reuters

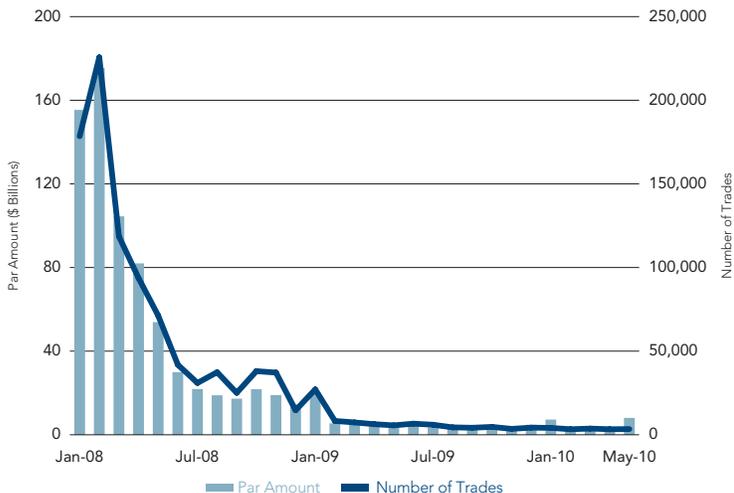
The collapse in the ARS market is also apparent in the sharp decline in trading activity. During the first five months of 2010, ARS trading volume averaged \$4.5 billion and 3,246 trades, compared to a monthly average of \$113.6 billion and 137,225 trades for the same period in 2008.<sup>5</sup> VRDO trading activity has not declined as sharply as the ARS activity, but has also decreased significantly since 2008. In the first five months of 2010, VRDO trading volume averaged \$123.4 billion and 20,644 trades, compared to \$200.4 billion and 69,514 trades in the first five months of 2008.

<sup>3</sup> Based on information submitted through the MSRB’s SHORT system and information on outstanding values provided by Bloomberg, LLC.

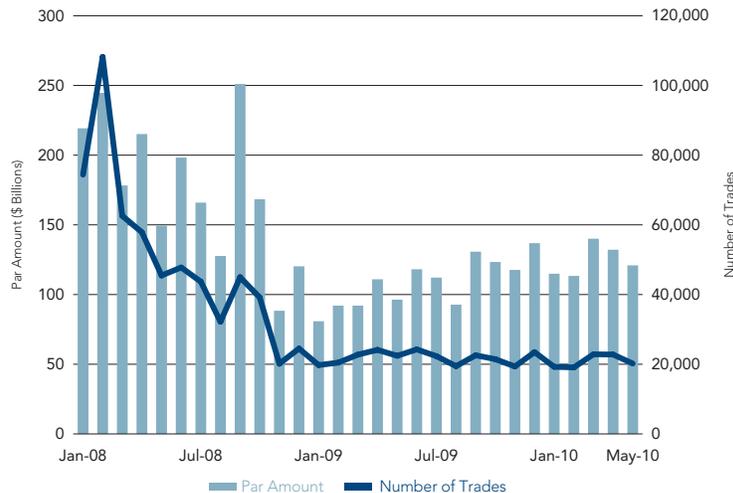
<sup>4</sup> Jeffrey Rosenberg, et. al., “Debt Research” — Cross Product, Bank of America, February 13, 2008.

<sup>5</sup> As described in a G-14 interpretive notice from January 2, 2008 (Reporting of Transactions in Certain Special Trading Situations), some transactions are subject to special conditions indicating that they are not a typical arms-length transaction and possibly a misleading indicator of the market value of a security. These transactions may be excluded from MSRB’s transparency products, including data disseminated through EMMA, but may be included in this report.

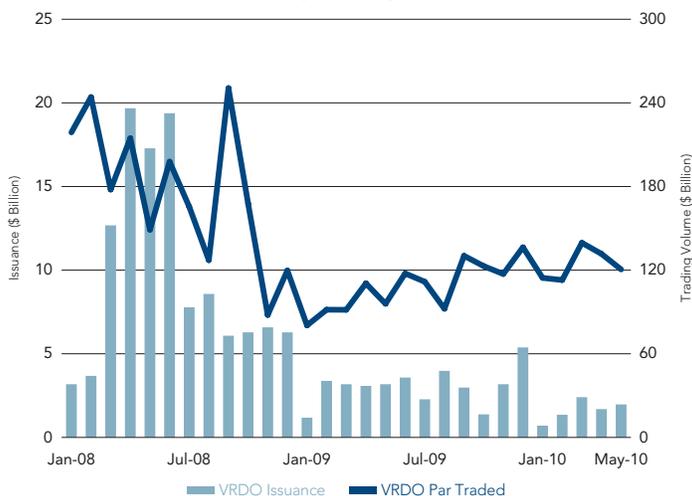
**MUNICIPAL ARS TRADING VOLUME**  
Jan 2008 – May 2010



**MUNICIPAL VRDO TRADING VOLUME**  
Jan 2008 – May 2010



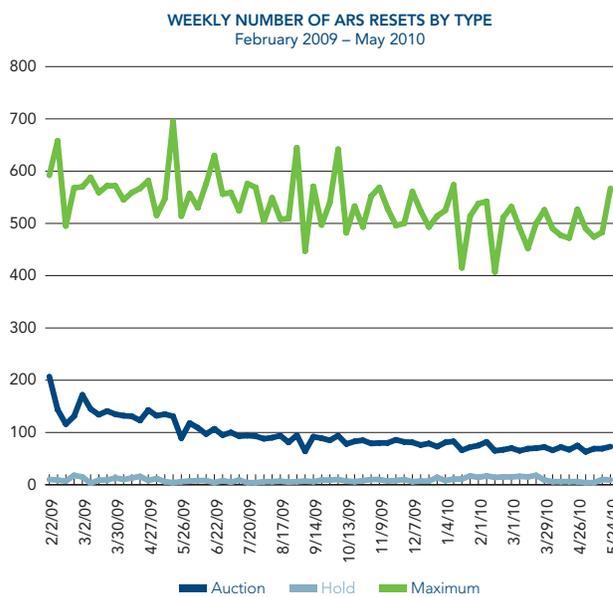
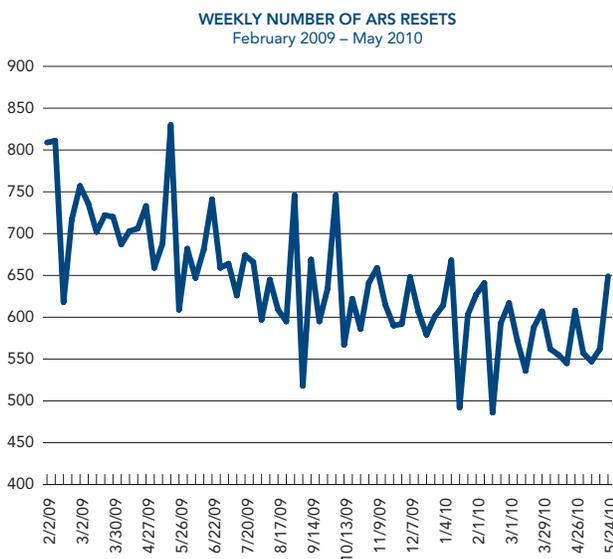
**VRDO ISSUANCE AND TRADING ACTIVITY**  
January 2008 – May 2010



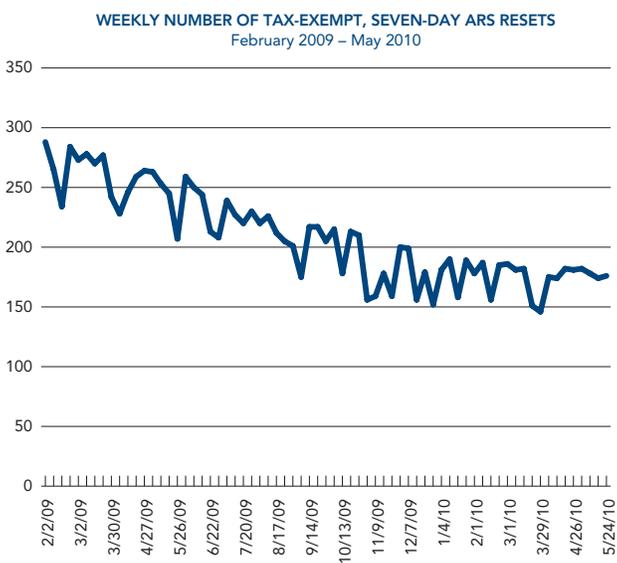
**ARS INTEREST RATE RESETS**

In addition to trading information, the MSRB also collects interest rate information for ARS. Approximately 44,137 municipal ARS rate resets were reported to the MSRB from the inception of the SHORT System in February 2009 through May 2010. Approximately 36,938 resets, or over 83 percent, were identified as being set at the maximum rate for the security, which typically indicates a failed auction, and 6,572 resets were identified as being determined through a successful auction, or “set at auction.”<sup>6</sup> The number of ARS rate resets decreased from a weekly average of 739 in February 2009 to a weekly average of 579 in May 2010, a decrease of nearly 22 percent. This decrease was most noticeable in the 54 percent decline in the number of rate resets set at auction, from a weekly average of 150 resets in February 2009 to a weekly average of 69 resets in May 2010. The number of ARS rate resets set at the maximum rate declined from a weekly average of 578 to a weekly average of 504 in the same period.

<sup>6</sup> Approximately 627 rate resets were set at an “All Hold Rate” indicating that all existing holders either did not place an order or decided to hold at any interest rate.



Most of the ARS rate resets were for securities that reset every seven days, accounting for nearly half, or 23,070, of all resets from February 2009 to May 2010. Other reset frequencies reported include ARS with a 35-day reset (21 percent), 28-day reset (14 percent) and one-day reset (7 percent).<sup>7</sup> Comparing ARS by tax status, tax-exempt ARS accounted for 21,072 resets while the number of remaining rate resets were equally distributed between taxable (11,374) and securities subject to alternative minimum tax (11,011).<sup>8</sup> The weekly average number of resets for seven-day, tax-exempt issues — the most common type of ARS — decreased to 178 in May 2010 from 268 in February 2009.

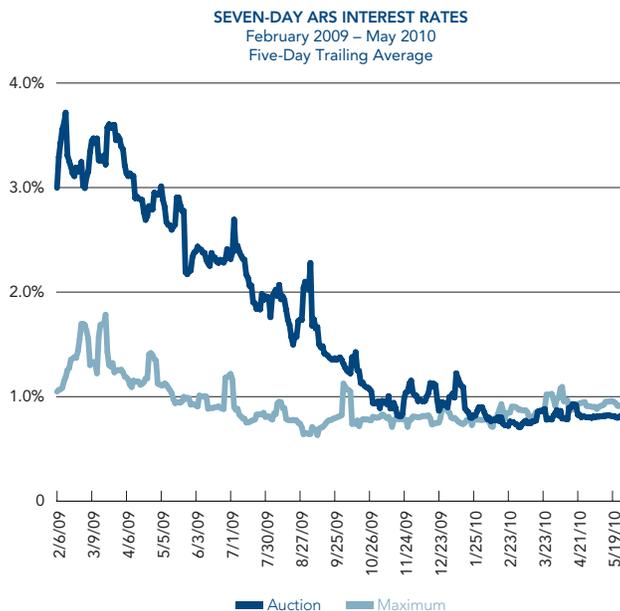


<sup>7</sup> The remaining 2,593 resets were for securities with other periodic reset frequencies.

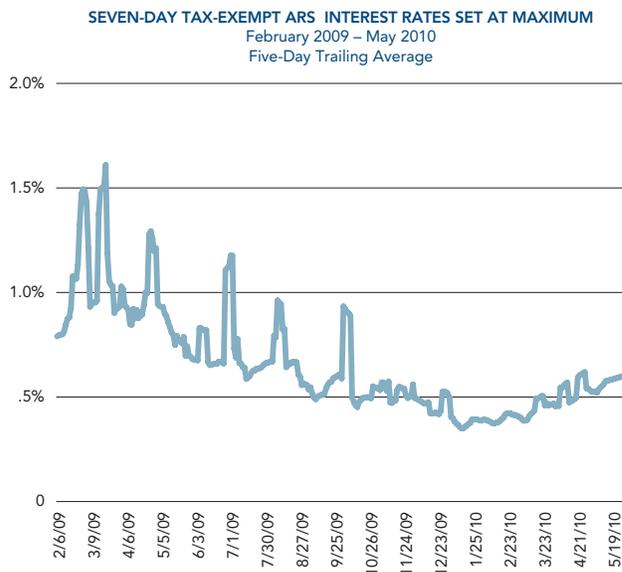
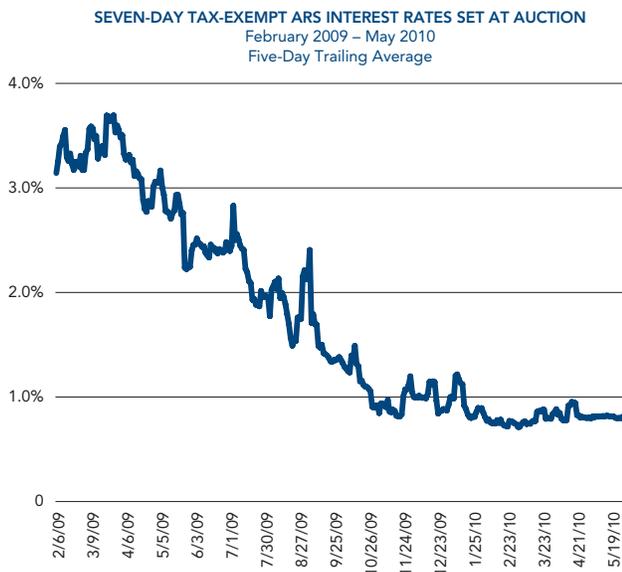
<sup>8</sup> Included securities are classified as municipal ARS based on information provided by the CUSIP Service Bureau.

### ARS INTEREST RATES

Average interest rates for municipal ARS reported to the MSRB with a seven-day reset frequency set at auction fell from 3.21 percent in February 2009 to 0.82 percent in May 2010. During the same period, average interest rates for seven-day ARS set at the maximum rate fell from 1.34 percent to 0.93 percent.



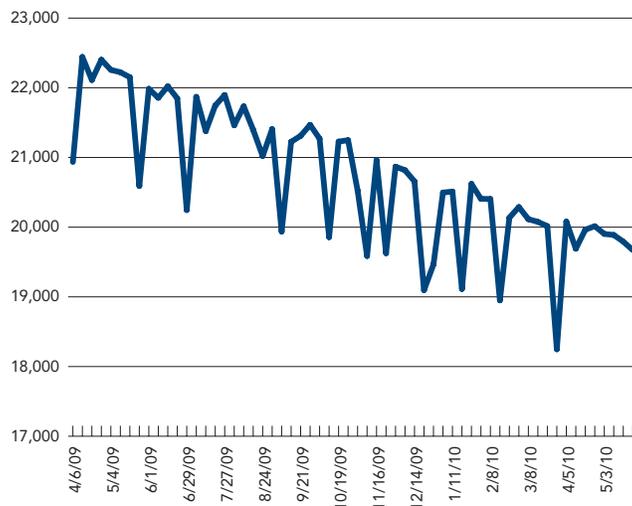
Interest rates for tax-exempt ARS set at auction with a seven-day reset frequency averaged 3.25 percent in February 2009 compared to 0.81 percent in May 2010. In contrast, tax-exempt ARS with a seven-day reset frequency set at the maximum rate averaged 1.05 percent and 0.57 percent during the same period. Taxable ARS with a seven-day reset frequency set at the maximum rate averaged 2.22 percent in February 2009, dropped to an average of 1.19 percent in August 2009 and have since increased to an average of 1.88 percent in May 2010.



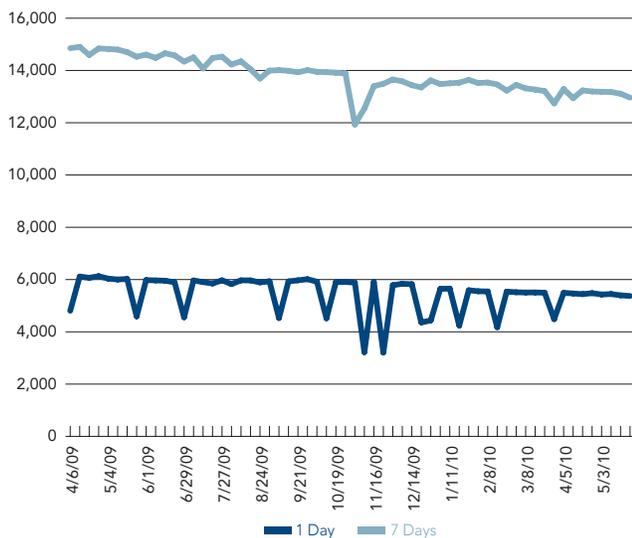
### VRDO INTEREST RATE RESETS

More than 1.26 million municipal VRDO rate resets have been reported to the MSRB since April 2009. The number of interest rate resets reported on a weekly basis has decreased from an average of approximately 21,972 in April 2009 to an average of approximately 19,814 in May 2010. VRDOs with a seven-day interest rate reset frequency accounted for 66 percent of all interest rate resets and one-day resets accounted for 26 percent.<sup>9</sup> The majority, or 65 percent, of all VRDO rate resets are for tax-exempt VRDOs. An additional 27 percent of VRDO rate resets are for issues subject to the alternative minimum tax and 6 percent are for taxable issues.<sup>10</sup>

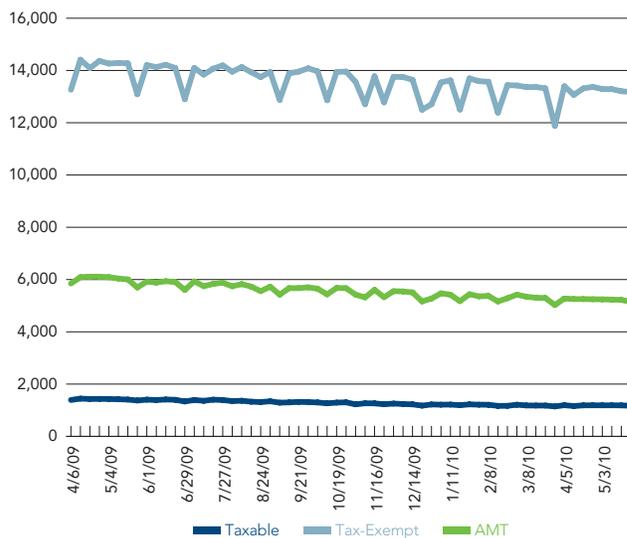
WEEKLY NUMBER OF VRDO RATE RESETS  
April 2009 – May 2010



WEEKLY NUMBER OF VRDO RATE RESETS BY RESET PERIOD  
April 2009 – May 2010



WEEKLY NUMBER OF VRDO RATE RESETS BY TAX STATUS  
April 2009 – May 2010

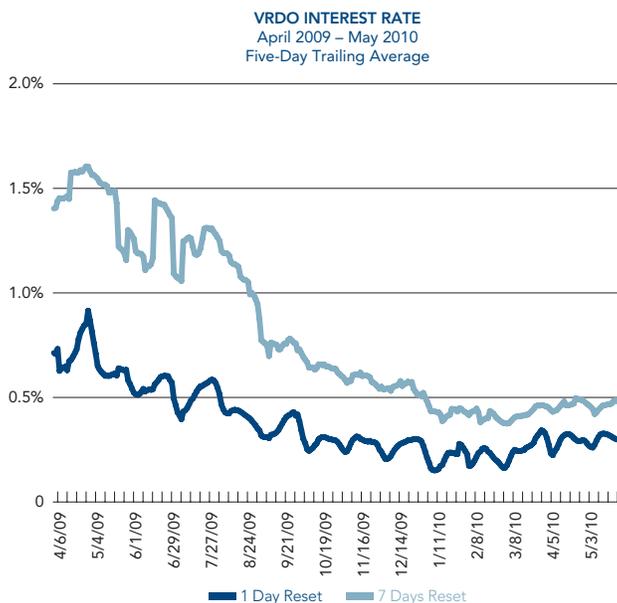


<sup>9</sup> Remaining VRDO interest rate reset frequencies included resets that occurred between two and six days and greater than seven days.

<sup>10</sup> The remaining 2 percent of VRDOs could not be categorized by tax status based on available information.

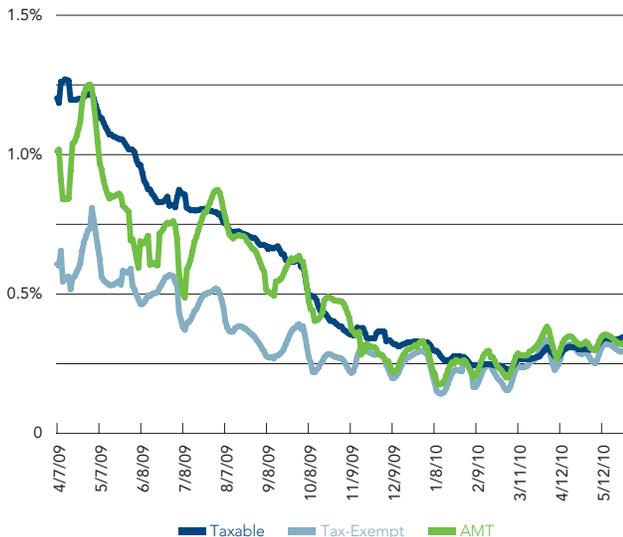
### VRDO INTEREST RATES

Average interest rates for VRDOs reported to the MSRB with a seven-day reset frequency fell nearly 69 percent from 1.47 percent in April 2009 to 0.46 percent in May 2010. The average interest rates of VRDOs with a one-day reset frequency also decreased significantly from 0.73 percent in April 2009 to 0.30 percent in May 2010.

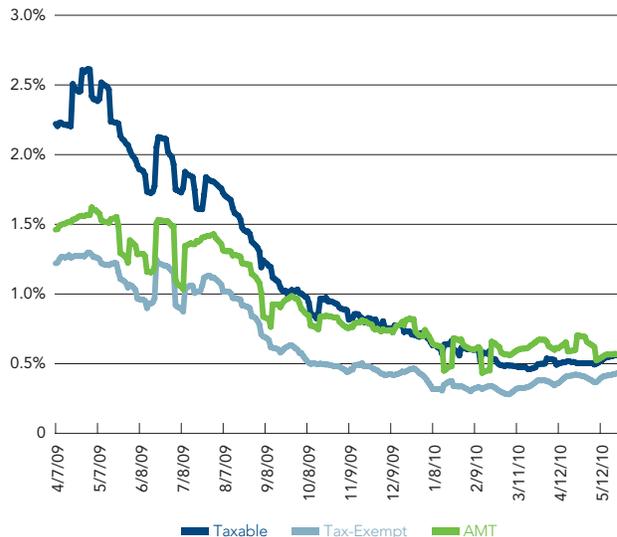


The average interest rate reported for all VRDOs has fallen significantly since April 2009. The average interest rate spread between tax-exempt and taxable VRDOs with a one-day reset frequency was approximately 60 basis points in April 2009. This spread decreased to approximately four basis points in May 2010. For VRDOs resetting every seven days, the average interest rate spread between tax-exempt and taxable securities decreased from approximately 110 basis points in April 2009 to approximately 13 basis points in May 2010.

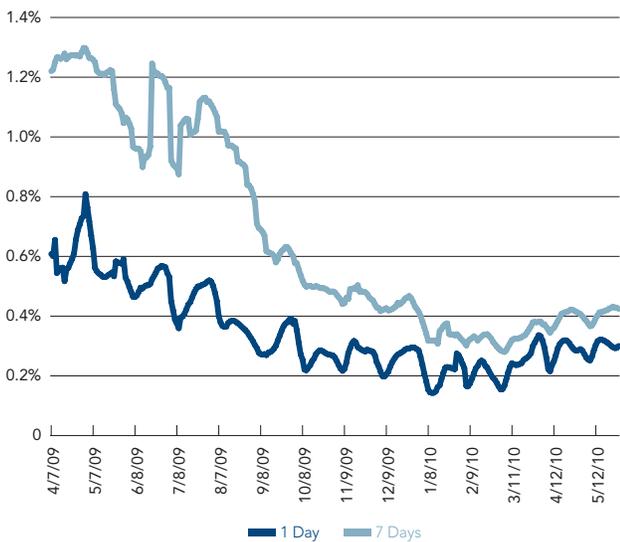
**ONE-DAY VRDO INTEREST RATES BY TAX STATUS**  
 April 2009 – May 2010  
 Five-Day Trailing Average



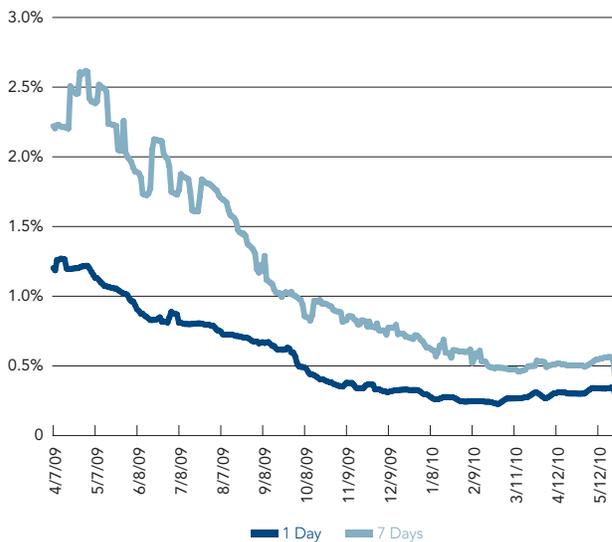
**SEVEN-DAY VRDO INTEREST RATES BY TAX STATUS**  
 April 2009 – May 2010  
 Five-Day Trailing Average



**TAX-EXEMPT VRDO INTEREST RATES**  
 April 2009 – May 2010  
 Five-Day Trailing Average



**TAXABLE VRDO INTEREST RATES**  
 April 2009 – May 2010  
 Five-Day Trailing Average



## ARS PROGRAM DEALERS AND VRDO REMARKETING AGENTS

Certain municipal securities dealers called “program dealers” submit orders to an auction agent for their own account or on behalf of other market participants to buy, sell or hold ARS through the auction process. For VRDOs, “remarketing agents” are responsible for setting interest rates and reselling positions in VRDOs that existing investors have tendered. The MSRB collects information on the dealers that act as program dealers and remarketing agents for ARS and VRDOs.

The tables below show the top 10 ARS program dealers and VRDO remarketing agents, based on the number of securities for which information was reported to the MSRB during the time periods indicated.

TOP 10 ARS PROGRAM DEALERS FEBRUARY 2009 – MARCH 2009	Number of Securities	ARS PROGRAM DEALERS APRIL 2010 – MAY 2010	Number of Securities
UBS Securities LLC	460	UBS Securities LLC	324
Citigroup Global Markets Inc.	434	Citigroup Global Markets Inc.	303
J.P. Morgan Securities Inc.	263	RBC Capital Markets Corporation	195
RBC Capital Markets Corporation	261	Merrill Lynch, Pierce, Fenner	138
Banc of America Securities LLC	195	J.P. Morgan Securities Inc.	126
Morgan Stanley & Co. Incorporated	182	Wells Fargo Advisors	122
Merrill Lynch, Pierce, Fenner	170	Banc of America Securities LLC	119
Goldman, Sachs & Company	168	Morgan Stanley & Co. Incorporated	117
Wachovia Securities, LLC.	153	Goldman, Sachs & Company	117
Kildare Capital	29	Cross Point Capital LLC	73

TOP 10 VRDO REMARKETING AGENTS APRIL 2009 – MAY 2009	Number of Securities	TOP 10 VRDO REMARKETING AGENTS APRIL 2010 – MAY 2010	Number of Securities
Banc of America Securities LLC	1,858	J.P. Morgan Securities Inc.	1,511
J.P. Morgan Securities Inc.	1,708	Wells Fargo Bank, N.A. Municipal Products Group	1,307
Citigroup Global Markets Inc.	1,229	Banc of America Securities LLC	1,207
Wachovia Bank, N.A. Municipal Group	1,087	Citigroup Global Markets Inc.	1,081
Goldman, Sachs & Company	766	Merrill Lynch, Pierce, Fenner	831
SunTrust Robinson Humphrey, Inc.	695	PNC Capital Markets LLC	734
RBC Capital Markets Corporation	660	Goldman, Sachs & Company	710
Merrill Lynch, Pierce, Fenner	617	RBC Capital Markets Corporation	587
Piper Jaffray & Co.	538	Barclays Capital Inc.	503
Morgan Keegan & Company	522	Morgan Stanley & Co. Incorporated	440

## BACKGROUND

A description of ARS and VRDOs and of the MSRB transparency programs referenced in this report are described below.

### AUCTION RATE SECURITIES

ARS are long term securities that have variable interest rates that reset on a short-term basis. The typical auction process is one referred to as a Dutch auction in which securities are sold at the lowest interest rate, or "clearing rate," at which all of the securities that have been offered for sale by current holders of the securities will clear the market. Auctions are conducted by agents of the issuer of the auction rate security, called auction agents, and orders are submitted to the auction agent by certain dealers, called program dealers, that have rights granted to them through an agreement with the issuer to submit orders.

Official documents for ARS address situations that can occur when a clearing rate cannot be determined through the auction process. An "all hold" interest rate is set for auctions where existing holders either do not enter an order or instruct program dealers to hold at any interest rate. Such "all hold" rates often are linked to a market index and generally are intended to be lower than a clearing rate. In the event that all of the securities offered for sale in an auction are unable to be sold, the auction "fails" and a maximum rate is set. Maximum rates can be absolute values or linked to a market index.

### VARIABLE RATE DEMAND OBLIGATIONS

VRDOs are long-term securities with short-term interest rate periods. Interest rates are reset periodically through programs operated by dealers, called remarketing agents, on behalf of the issuers of the securities. The interest rate is set to allow the securities to be sold at par.

A distinguishing characteristic of VRDOs is the existence of a "put" or "tender" feature that allows a holder to liquidate a position, at par, on a periodic basis. Through the put or tender feature, holders seeking to liquidate a position can put the securities to a tender agent. A specified amount of notice is required to be provided to the tender agent and during that notification period, the remarketing agent seeks to find a purchaser for the securities that have been tendered. If the remarketing agent is unable to find a purchaser for the tendered securities, the tender agent will draw on a liquidity facility, such as a letter of credit or standby bond purchase agreement, to fund the purchase price of the tendered VRDO if the remarketing agent does not otherwise purchase the tendered VRDO.

VRDOs typically have a high minimum denomination requiring a minimum investment of \$100,000 and historically have been purchased primarily by institutional investors.

### SHORT-TERM OBLIGATION RATE TRANSPARENCY SYSTEM

The SHORT System provides a centralized source of information about municipal ARS and VRDOs. MSRB rules require ARS program dealers and VRDO remarketing agents to report to the MSRB current interest rates and other key information on the day that an ARS auction or VRDO interest rate reset occurs. Information collected by the SHORT System is posted to the EMMA web site in real-time and the MSRB plans to offer a subscription service to this information in the future.<sup>11</sup>

The MSRB plans to increase the information collected by the SHORT System to provide greater transparency for the ARS and VRDO markets.<sup>12</sup> For ARS, the MSRB plans to collect from program dealers information about all orders submitted for an auction and whether these orders were executed as well as certain documents that define auction procedures and interest rate setting mechanisms for ARS. For VRDOs, the MSRB plans to collect additional information from VRDO remarketing agents including information about current holders of the VRDO and the outstanding size of the security as well as documents detailing liquidity provisions, such as the letters of credit and standby bond purchase agreements.

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<sup>11</sup> See MSRB Notice 2010-25 (August 10, 2010).

<sup>12</sup> See MSRB Notice 2010-31 (August 26, 2010).

## REAL-TIME TRANSACTION REPORTING SYSTEM

The MSRB Real-Time Transaction Reporting System (RTRS) serves two major functions in the municipal securities market — price transparency and market surveillance. The implementation of RTRS in January 2005 created “real-time” transaction price transparency. MSRB rules require dealers to report to the MSRB transaction data on all municipal securities trades with customers and with other dealers within 15 minutes of the time of trade, with limited exceptions. Transaction prices are electronically disseminated immediately after transactions are received by the MSRB and automated error checking is completed. Information reported to RTRS is available to subscribers, which include information vendors, and to the MSRB’s EMMA website in real-time.

## ELECTRONIC MUNICIPAL MARKET ACCESS

EMMA is a centralized online database that provides free public access to official disclosure documents associated with municipal securities issued in the United States. EMMA also provides real-time trade data for approximately 1.2 million outstanding municipal securities and current interest rates for auction rate securities and variable rate demand obligations. EMMA provides transparency of information for investors in this important financial market and makes it easy — and free — for them to access bond disclosures and pricing data that can inform investment decisions. Information available on EMMA includes snapshots of daily trade data based on security size, sector, maturity and source of repayment; educational material about municipal securities and their associated documents; and a comprehensive glossary of municipal securities terms.

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