



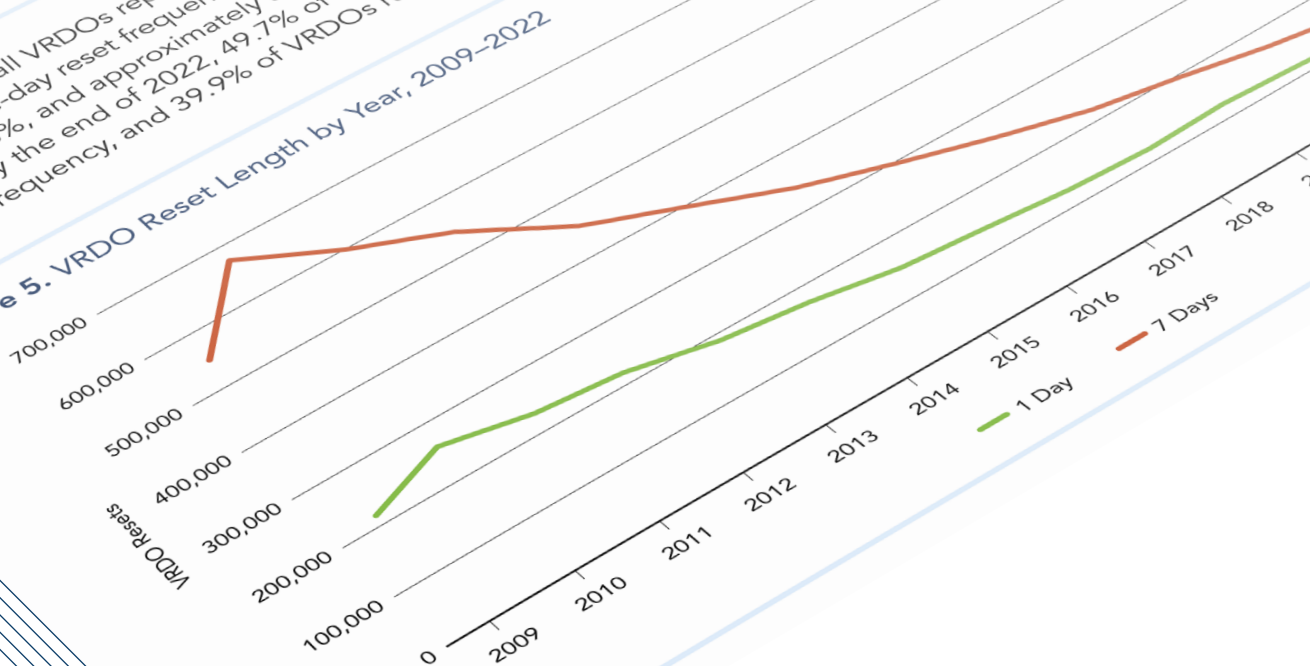
Municipal Securities Rulemaking Board

MAY 2023

# Municipal Variable-Rate Demand Obligations and Auction-Rate Securities (2009–2022)

In 2009, 71.7% of all VRDOs reported to the MSRB had a one-day interest rate reset frequency and 28.3% had a seven-day interest rate reset frequency. By 2014, the number of seven-day interest rate resets declined slightly to 69.6%, and approximately 30% of VRDOs reported to the MSRB had a one-day interest rate reset frequency. By the end of 2022, 49.7% of VRDOs reported to the MSRB had a one-day interest rate reset frequency, and 39.9% of VRDOs reported to the MSRB had a seven-day interest rate reset frequency.

Figure 5. VRDO Reset Length by Year, 2009–2022



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## Introduction<sup>1</sup>

Starting in early 2009, the MSRB began collecting information about municipal variable-rate demand obligations (VRDOs) and auction-rate securities (ARS) through its Short-term Obligation Rate Transparency (SHORT) System. In conjunction with related trade data collected through its Real-Time Transaction Reporting System (RTRS), the MSRB provides a comprehensive source of data for the ARS and VRDO markets. The MSRB's Electronic Municipal Market Access (EMMA<sup>®</sup>) website provides free public access to collected information.

This is the fourth version of the report on [Municipal Variable-Rate Demand Obligations and Auction-Rate Securities](#). The MSRB began periodically publishing this report as a means to provide transparency into the ARS and VRDO marketplace by summarizing the data compiled since the inception of the SHORT system data. The last report published by the MSRB covered the ARS and VRDO market until 2014. This report builds on the previous reports and provides analysis through the end of December 2022.

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<sup>1</sup> The views expressed in the research papers are those of the author(s) and do not necessarily reflect the views and positions of the MSRB Board and other MSRB staff.

## Background

The MSRB instituted a variable-rate security regulatory regime to address the significant impacts of the global financial crisis of 2007–2008. The crisis exposed systemic problems in the ARS market that led to widespread failed auctions and collapse. As variable-rate programs struggled during the global financial crisis, the number of variable-rate securities coming to market and available for trading declined significantly from 2009. Much of the decline in volume can be explained by the deleveraging of Tender Option Bond (TOB) programs, which used variable-rate debt to leverage their portfolios and buy additional fixed-rate bonds. During the global financial crisis, TOB programs were forced to sell their fixed-rate debt and retire much of their short-term debt because of the substantial losses in their portfolios. Further, banks faced with a significant increase in credit risk on their loans outstanding were less willing to renew expiring letters of credit. These developments led to failed auctions in the ARS market, which in turn caused a decline in issuance and trading in variable-rate securities and a substantial amount of short-term variable rate debt to be retired.<sup>2</sup>

As a result, the variable-rate municipal market never again approached the levels of issuance and trading seen prior to the financial crisis. Issuance of VRDOs reached nearly \$120 billion in 2008 but quickly decreased to an annual average of \$14.6 billion between 2009 and 2022. VRDO trading volume also decreased significantly with volume reaching 598,687 trades and \$2.1 trillion in 2008 before rapidly declining to an annual average of 184,796 trades and \$895 billion since 2009. Variable-rate securities accounted for 15% of overall trading in 2008, compared to 2% in 2022.

## Variable Rate Demand Obligations

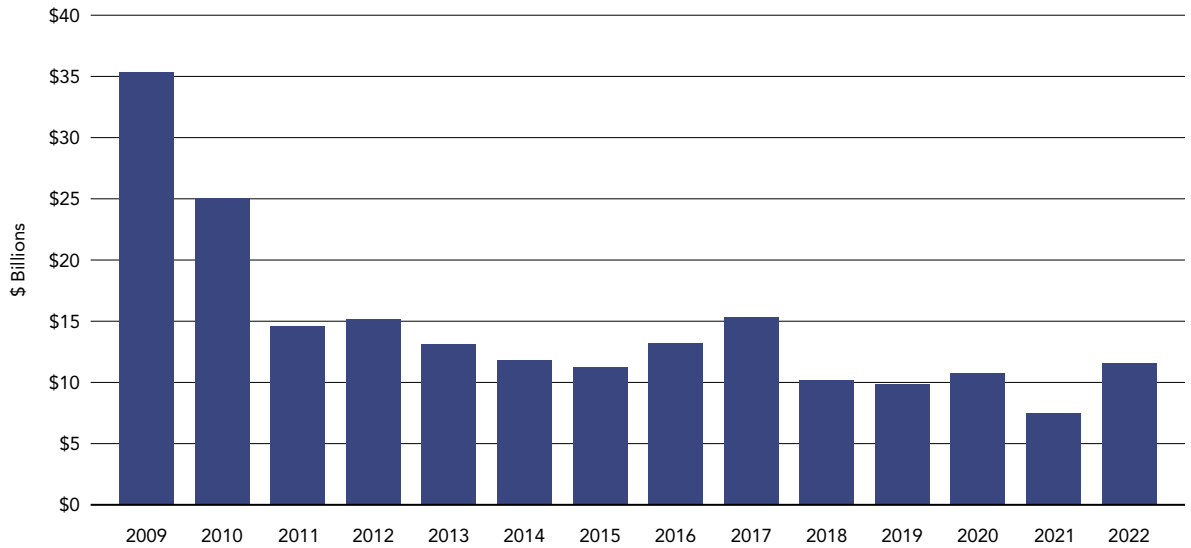
### VRDO Primary Market Activity

VRDO issuance decreased considerably in 2009 following the global financial crisis and then remained relatively stable at substantially lower levels through 2022. An annual average of \$14.6 billion in new issuance from 2009 to 2022 is a significant contrast with the annual average of \$66 billion issued between 2004 and 2008. With the exception of an increase in 2017, on average, VRDO issuance remained relatively stable starting in 2011, fluctuating between \$10 billion and \$15 billion before decreasing to a low of \$7.5 billion in 2021 and increasing back to \$11.5 billion in 2022. Also of note, between 2021 and 2022, issuance by par amount increased by 54% or \$4 billion. This time period likely corresponds to the start of the Federal Reserve raising the federal funds benchmark rate. The increase in interest rates may have caused issuers to issue variable-rate securities, particularly VRDOs, instead of being locked into higher long-term rates.

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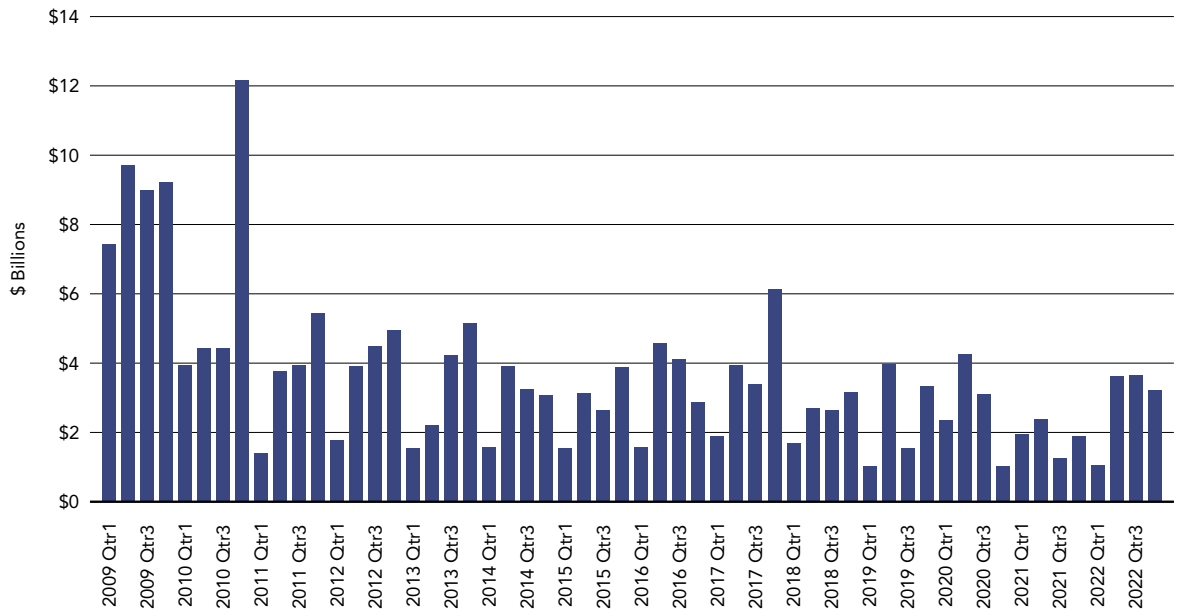
<sup>2</sup> See “Municipal Securities Market, Trade Activity 2007-2021,” Municipal Securities Rulemaking Board, May 2022

**Figure 1. VRDO Issuance by Year, 2009–2022**



Source: Refinitiv

**Figure 2. VRDO Issuance by Quarter, 2009–2022**



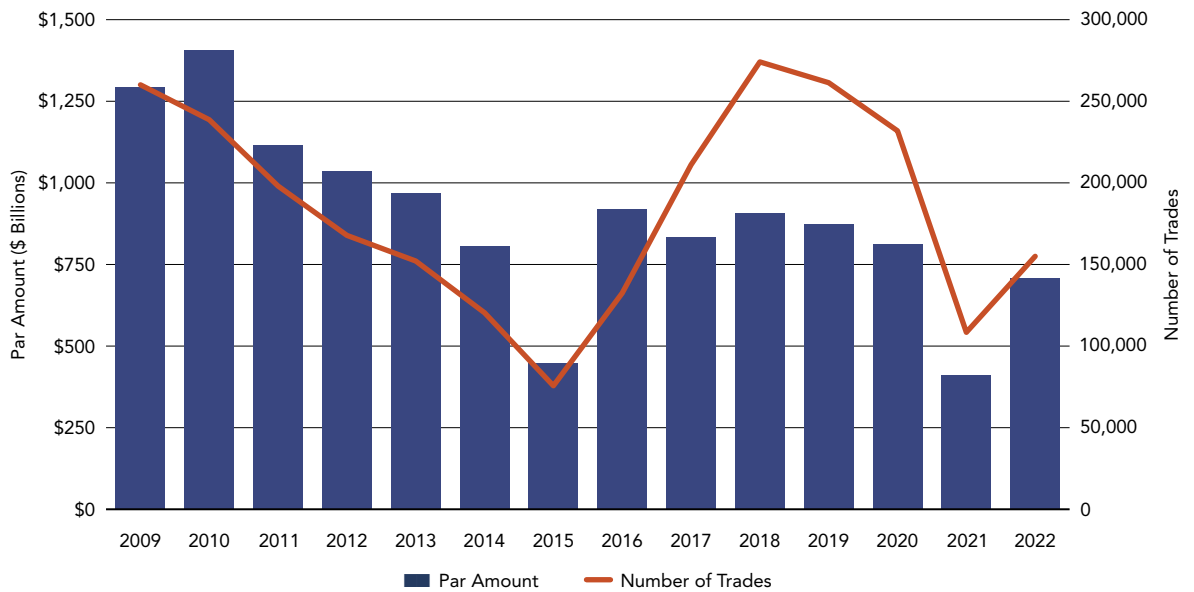
Source: Refinitiv

The decrease in issuance after the global financial crisis has led to a decline in the overall size of the VRDO market. Compared to an estimated \$222 billion in early 2014, the VRDO market size decreased to approximately \$72 billion at the end of 2022, or 67.5% lower.

## VRDO Secondary Market Activity

VRDO par volume and the number of trades decreased sharply from 2009 to 2015 when it reached approximately 76,000 trades and \$450 billion. Beginning in 2016, the number of trades increased quickly to nearly 275,000 trades in 2018 before decreasing to about 108,000 trades in 2021 before rising to 155,000 trades in 2022. Between 2016 and 2020, par volume traded was much more stable at \$870 billion per year before decreasing to about \$400 billion in 2021 then rebounding to \$700 billion in 2022.

**Figure 3.** Yearly VRDO Trade Volume (by Trade and Par Amount), 2009–2022

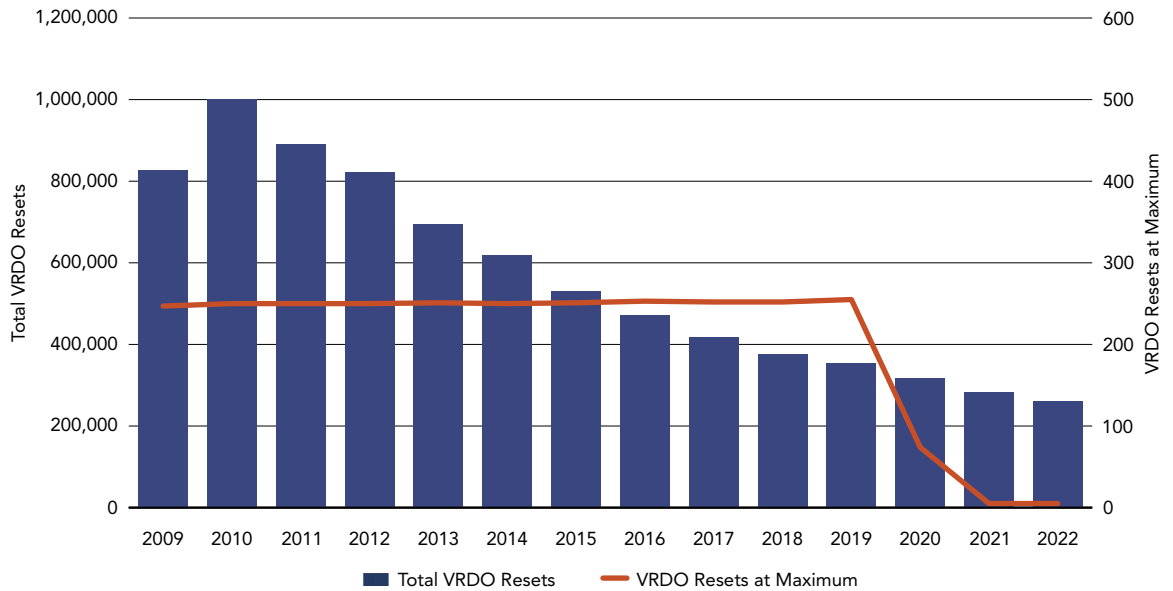


## VRDO Interest Rate Resets

The number of municipal VRDO rate resets continued to decrease following the global financial crisis. After peaking in 2010 with over one million resets, the annual volume of resets has been declining steadily through 2022. There have been only seven out of 56 quarters between 2009 and 2022 when the number of resets increased. Overall, the number of interest rate resets has declined for an average quarter-over-quarter decline of 2.7%.

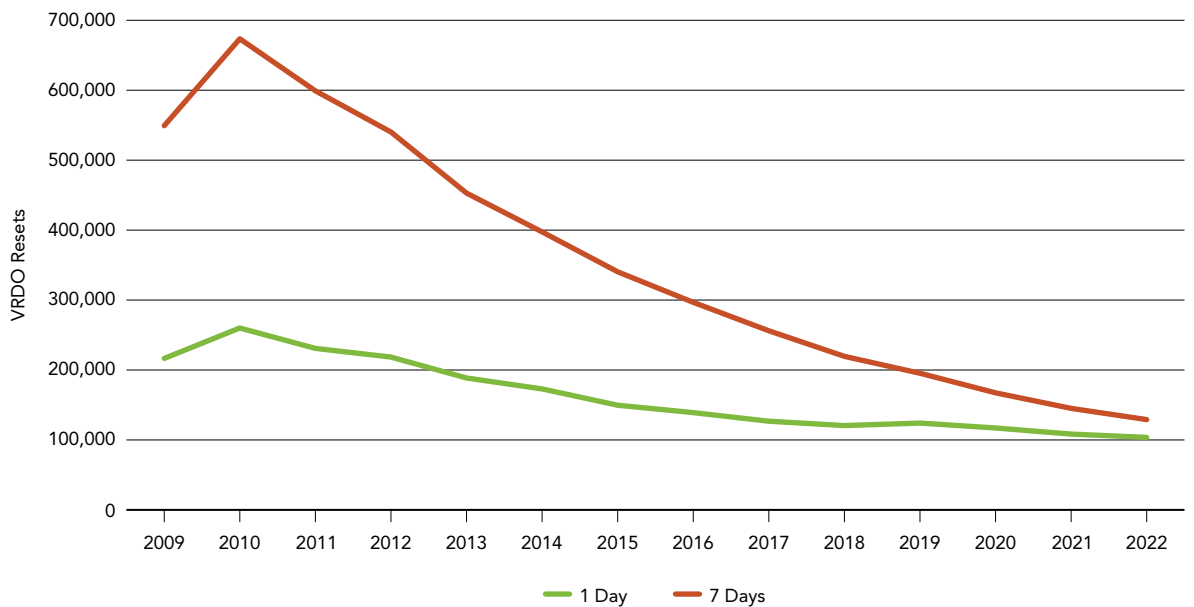
The regularity of maximum rate resets also changed. They stopped abruptly in the first quarter of 2022 and there have only been 14 maximum rate resets since then.

**Figure 4. VRDO Resets by Year, 2009–2022**



In 2009, 71.7% of all VRDOs reported to the MSRB had a seven-day interest rate reset frequency and 28.3% had a one-day reset frequency. By 2014, the number of seven-day interest rate resets declined slightly to 69.6%, and approximately 30% of VRDOs reported to the MSRB had a one-day reset frequency. By the end of 2022, 49.7% of VRDOs reported to the MSRB had a seven-day interest rate reset frequency, and 39.9% of VRDOs reported to the MSRB had a one-day reset frequency.

**Figure 5. VRDO Reset Length by Year, 2009–2022**

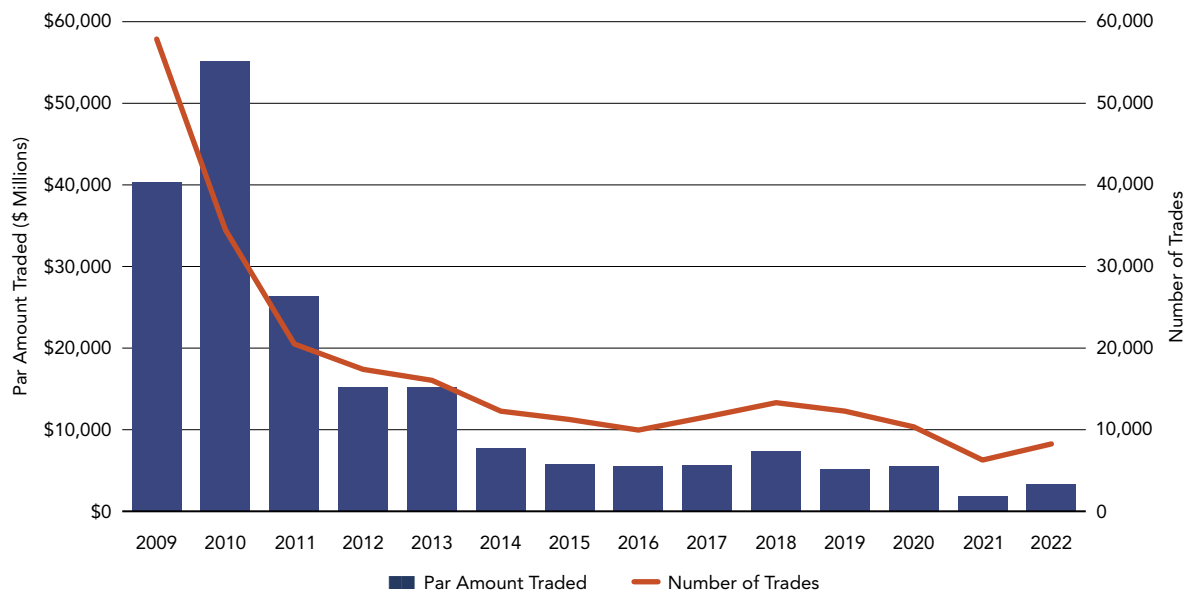


## Auction Rate Securities

### ARS Secondary Market Activity

Between 2009 and the end of 2022, the total volume of ARS trades plummeted. In 2009, there were a total of 57,870 ARS trades. By 2022 there were only 8,258 trades, a decline of 85.7%. Also, during this time, the total par amount traded declined from \$40 billion in 2009 to \$3.3 billion in 2022. Although the market was already contracting, in 2010, the total par amount traded increased 37% before declining. This may be the result of dealers repurchasing outstanding securities as part of legal settlements with state and federal regulators.<sup>3</sup> The decline in both the volume and par amount traded in ARS was expected. In 2008, the auction-rate market collapsed, and since that time, there have been no new issuances of ARS securities. As a result, the total market outstanding has been contracting.

**Figure 6.** Yearly ARS Trading Volume, 2009–2022

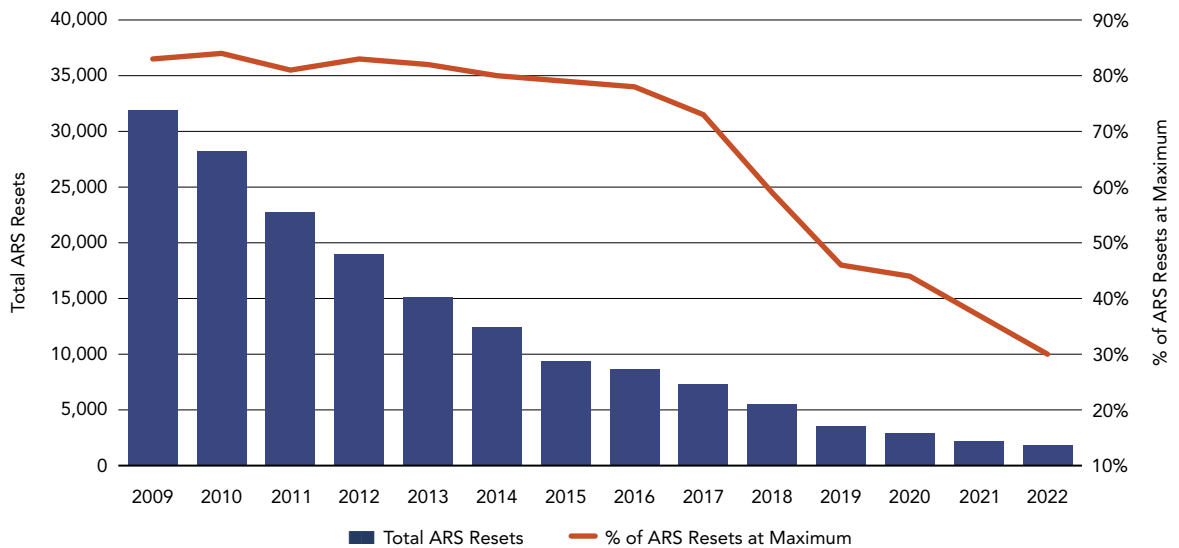


<sup>3</sup> Song Han and Dan Li, “The Fragility of Discretionary Liquidity Provision—Lessons from the Collapse of the Auction Rate Securities Market,” Finance and Economics Discussion Series Divisions of Research & Statistics and Monetary Affairs Federal Reserve Board, Washington, D.C., July 2020.

## ARS Interest Rate Resets

The total number of ARS rate resets has maintained a gradual but considerable decline since 2009, when it totaled 31,908 compared to 1,857 in 2022. Since 2019, when the usage of a maximum reset dominated the ARS reset market and accounted for 83% of all resets, the number of resets being set at maximum has declined significantly and accounted for only 30% of all resets in 2022.

**Figure 7. ARS Resets by Year, 2009–2022**



## Conclusion

The 2007–2008 global financial crisis fundamentally changed the composition of the municipal variable-rate market. Prior to the financial crisis, the amount of VRDO trading increased as money market assets rose from \$242 billion in 2000 to a peak of \$510 billion in 2008. The market plummeted in 2009, then continued to contract more gradually from 2010 through 2015 before it stabilized and even grew slightly from 2015 to 2018 before stabilizing again. Although VRDO issuance and trading declined significantly in the years following the financial crisis, the VRDO market remains an important part of the municipal bond market for investors and issuers alike.

The ARS market is in run-off mode, having dwindled to less than 10,000 trades in 2022. It is no longer a significant part of the municipal bond market.



## ABOUT THE MSRB

The Municipal Securities Rulemaking Board (MSRB) protects and strengthens the municipal bond market, enabling access to capital, economic growth, and societal progress in tens of thousands of communities across the country. The MSRB fulfills this mission by creating trust in our market through informed regulation of dealers and municipal advisors that protects investors, issuers and the public interest; building technology systems that power our market and provide transparency for issuers, institutions, and the investing public; and serving as the steward of market data that empowers better decisions and fuels innovation for the future. The MSRB is a self-regulatory organization governed by a board of directors that has a majority of public members, in addition to representatives of regulated entities. The MSRB is overseen by the Securities and Exchange Commission and Congress.



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