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Auction-Rate Securities: Bidder's Remorse?

A Primer

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Auction-rate securities (ARS) are long-term variable-rate instruments with their interest rates reset at periodic and frequent auctions. They are often marketed to issuers as an alternative variable-rate financing vehicle and to investors as an alternative to money market funds. Investors have historically been able to liquidate ARS positions at face value at frequent auctions, leading many to consider them cash-like. After hundreds of auction failures in February 2008, however, the *Wall Street Journal* declared that the ARS market had "virtually collapsed."

Recent media coverage has pointed to broker-dealers withdrawing support from this market. Many articles have discussed credit rating downgrades of monoline insurers. We believe the auction-rate market encompasses securities and issuers of varying characteristics and that an understanding of recent events requires detailed analyses of these characteristics.

This paper explores auction-rate securities in depth. First, we describe the ARS market and explain the "Dutch auction" process. Next, we review the evolution of these securities through the present crisis. We then describe responses to auction failures including issuer restructuring, corporate write-downs, and litigation.

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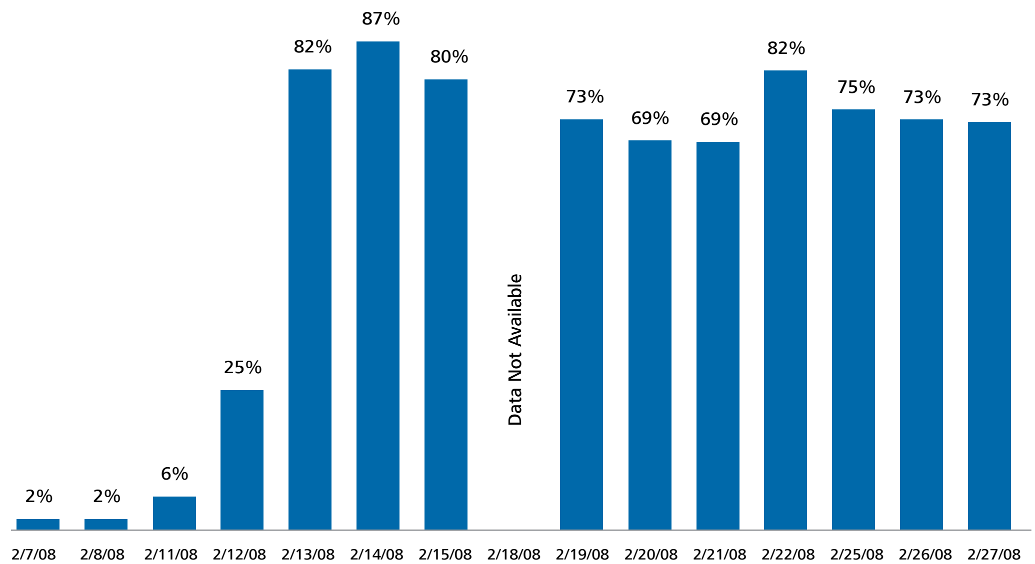
The Auction-Rate Securities Market

Auction-rate securities (ARS) are long-term variable-rate instruments with their interest rates reset at periodic and frequent auctions. They are often marketed to issuers as an alternative variable-rate financing vehicle and to investors as an alternative to money market funds. Investors have historically been able to liquidate ARS positions at face value at frequent auctions, leading many to consider them cash-like. After hundreds of auction failures in February 2008, however, the *Wall Street Journal* declared that the ARS market had "virtually collapsed."[1] As seen in Exhibit 1, the percentage of failing auctions rose dramatically in February 2008.

Exhibit 1: **Auction Failure Rate** | 7 February 2008 through 27 February 2008



Sources: Bank of America, Reuters, Dow Jones.

The auction-rate market is estimated at about $330 billion outstanding.[2] There are two primary types of auction-rate instruments: long-term, often tax-exempt, debt instruments issued by municipalities or other entities (approximately 75% of the market)[3] and perpetual preferred equity instruments primarily issued by closed-end mutual funds (approximately 20% of the market).[4] Other types of issuers, which represent but a small portion of the market, include corporations and collateralized debt obligations (CDOs). Exhibit 2 (*following page*) shows the size and composition of the auction-rate market.

1 James B. Stewart, "Common Sense: Risks of a 'Safe' Investment Are Found Out the Hard Way," *Wall Street Journal*, 27 February 2008, sec. J.

2 Jeffrey Rosenberg, et al., "Debt Research – Cross Product Research," *Bank of America*, 13 February 2008.

3 In this category we include many types of issuers such as student loan lenders, states and state agencies, cities, colleges and universities, toll bridges, sewer and water authorities, and others. Sometimes municipalities or government agencies issue ARS on behalf of "conduit" issuers. The underlying borrowers may be entities such as hospitals, student loan lenders, or other institutions. Sometimes several borrowers, each with relatively small borrowing needs, will issue debt together to achieve a larger issue size.

4 Usage varies, and sometimes the term "auction rate securities" refers only to debt instruments while "auction rate preferred" refers to preferred equity instruments. We use the term "auction rate securities" more broadly to include both the debt and preferred equity instruments. The preferred ARS issued by closed-end funds differ from the debt ARS in that they are perpetual (have no maturity date), and are not bound to pay dividends the way debt ARS must pay coupons. Preferred ARS dividends are generally cumulative, so any missed dividend payments accumulate until they are all paid. ARS are sometimes referred to as "auction rate certificates."

Exhibit 2:
Size and Composition of the Auction-Rate Market | Year End 2007

Total = $330bn

- Municipal ($165bn, 50%)
  - Tax-Exempt (146bn, 44%)
  - Taxable........ (19bn, 6%)
- Student Loan ($85bn, 26%)
  - Tax-Exempt ($29bn, 9%)
  - Taxable....... ($56bn, 17%)
- Closed-End Fund Preferred ($63bn, 19%)
  - Tax-Exempt ($30bn, 9%)
  - Taxable........ ($33bn, 10%)
- Other ($17bn, 5%)

Source: Jeffrey Rosenberg, et al., "Debt Research – Cross Product Research," *Bank of America*, 13 February 2008.

While we present data on auction-rate securities by issuer type, we believe the auction-rate market encompasses securities and issuers of varying characteristics and that an understanding of recent events requires detailed analyses of these characteristics. We focus most of this paper's discussion on auction-rate securities issued by municipal and closed-end fund issuers.

Municipalities such as counties and school districts issue debt to fund specific projects like construction of roads, bridges, buildings, and sewer systems, or to meet general financing needs. They make debt payments with revenues from sources such as taxes and tolls. While municipalities are major participants in the auction-rate market, ARS comprise a small portion of municipal debt outstanding.[5] That said, for any particular municipal issuer, ARS may comprise a large share of its debt.

Closed-end mutual funds are investment companies that issue a fixed number of shares; these shares are typically traded on an exchange. After issuance, an investor does not purchase or redeem shares directly with the fund but instead buys and sells shares of the fund on the open market.[6] Unlike open-end mutual funds, which are prohibited from using most types of leverage, closed-end funds typically do use leverage to enhance returns to their common shareholders.[7] Closed-end funds are required to have a 300% asset coverage ratio when using debt, meaning that the value of their assets must be at least three times larger than the value of their debt; they are only required to have 200% asset coverage when using preferred stock.[8] This may be one reason why preferred stock has become the dominant form of leverage for closed-end funds.[9] One might find that a closed-end mutual fund has one-third of its assets funded by preferred stock and two-thirds funded by common equity. Auction-rate preferred is one type of closed-end fund preferred stock.

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5 The total municipal securities market is $2.6 trillion as of 31 December 2007. Board of Governors of the Federal Reserve System, "Flow of Funds Accounts of the United States, Flows and Outstandings Fourth Quarter 2007," Federal Reserve statistical release, Washington DC, 6 March 2008, Z.1 p. 60. ("Board of Governors of the Federal Reserve System, Flow of Funds Fourth Quarter 2007").

6 In contrast, when an investor buys a share of an open-end fund, the number of shares of the open-end fund will increase. Closed-end funds are less common than open-end funds. As of year end 2007, there were 688 closed-end funds with more than $314 billion in assets, compared to over 8,000 funds with over $12 trillion in assets in mutual funds overall. Investment Company Institute, "Frequently Asked Questions About Closed-End Funds and Their Use of Leverage," March 2008, available from http://www.ici.org/funds/abt/faqs_closed_end.html. ("ICI, FAQ About Closed-End Funds and Their Use of Leverage."). For overall mutual fund statistics, see Investment Company Institute, "Trends in Mutual Fund Investing - December 2007," 30 January 2008, available from http://www.ici.org/stats/mf/trends_12_07.html#TopOfPage.

7 ICI, FAQ About Closed-End Funds and Their Use of Leverage; The Investment Company Act of 1940, Section 18f – Capital Structure of Investment Companies, published by The University of Cincinnati College of Law, available from http://www.law.uc.edu/CCL/InvCoAct/sec18.html.

8 The Investment Company Act of 1940, Sections 18a 1A and 2A – Capital Structure of Investment Companies, published by The University of Cincinnati College of Law, available from http://www.law.uc.edu/CCL/InvCoAct/sec18.html. ("Investment Company Act of 1940, Sections 18a 1A and 2A").

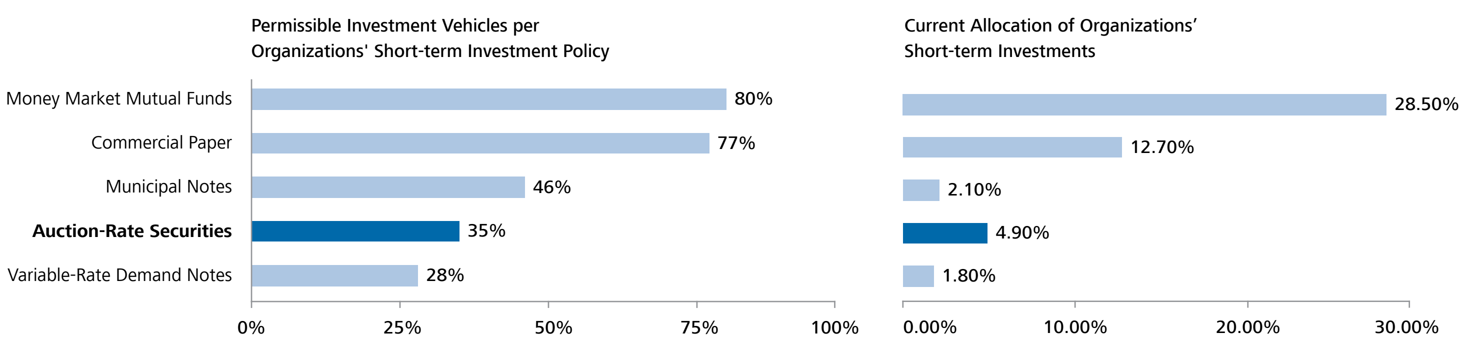
9 ICI, FAQ About Closed-End Funds and Their Use of Leverage.

Motivations for issuing auction-rate securities will vary from issuer to issuer. Once an issuer has determined that it prefers a variable-rate instrument to a fixed-rate instrument, it can choose from different types of variable-rate instruments. If it issues a traditional variable-rate instrument for which it pays a set spread over a benchmark rate, this fixes the issuer's credit spread for the life of the instrument.[10] Auction-rate securities allow the issuer's credit spread to vary over time. In addition, some alternative variable-rate instruments may require the issuer to periodically renew a liquidity facility, which auction-rate securities do not.[11] For some issuers, the auction-rate market has historically been attractive as a source of lower cost financing.[12] Issuer and investor preferences at the time of issuance will influence the choice of financing instrument.

Purchasers of auction-rate securities are generally wealthy individuals or corporate treasuries, and the minimum investment amount is usually $25,000. This contrasts with the broader set of buyers in the overall municipal debt market which also includes commercial banks, insurance companies, and government-sponsored enterprises, among others.[13] In general, closed-end fund investors are individuals who "tend to have much greater household financial assets than either individual stock or mutual fund investors."[14] A May 2006 study by the Association for Financial Professionals indicated that just 35% of companies allowed any portion of their short-term investments to be allocated to ARS, as the left panel of Exhibit 3 shows.[15] ARS made up a relatively small fraction of corporate treasury investments, as the right panel of Exhibit 3 shows, averaging only 5% for surveyed corporations. However, for any individual corporation, its auction-rate holdings might comprise a much larger portion of its short-term investments.

Recent auction failures have focused attention on this relatively small corner of the debt world. Recent disruptions in this market provide an interesting example of the interconnectedness of modern financial markets.

Exhibit 3: **Corporate Short-Term Investment Vehicles**



Source: AFP 2006 Liquidity Survey.

10 The issuer's credit spread is the difference between the issuer's borrowing rate and a credit risk-free benchmark rate.

11 Jill D'Ambrosio, "Auction-Rates Enjoy Turnaround As Volume Jumps Nearly 50%," *Bond Buyer*, 7 August 2006, vol. 358, p. 4.A.

12 For example, the Dallas-Fort Worth International Airport cited interest rate cost savings of $40 million since 2002 as a result of using auction-rate securities. To some degree, this may simply result from issuing debt with short-term reset frequency in an interest rate environment with an upward sloping yield curve, i.e., where short-term rates are lower than long-term rates. Richard Williamson, "Deal in Focus: Denver Selling $456M to Refund Airport Auction Rates," *Bond Buyer*, 1 April 2008, vol. 363, p. 8.

13 Based on Federal Reserve data as of 31 December 2007. Board of Governors of the Federal Reserve System, "Flow of Funds Fourth Quarter 2007."

14 Investment Company Institute, "2007 Investment Company Factbook, 47th Edition," (Washington, DC, 2007), Section 4: Closed-End Funds, pp. 41 – 45, available from http://www.icifactbook.org/fb_sec4.html#characteristics.

15 In comparison, only 28% allowed investment in variable-rate demand notes. See this paper's section "Responses to Current Failures" for discussion of other securities with short-term reset frequencies. Association for Financial Professionals, *AFP Liquidity Survey, Report of Survey Results*, Underwritten By Credit Suisse, July 2006, p. 6.

The Auction Process

In general, coupon-paying bonds may be "fixed-rate" or "variable-rate." Fixed-rate bonds pay coupons of the same amount every period based on one fixed rate, while variable-rate coupons vary in amount and are based on a rate that changes from one period to the next. This variable rate is typically set as a spread over some benchmark rate, for example, LIBOR or Fed Funds.[16] In the case of auction-rate securities, this variable rate is periodically re-determined through modified "Dutch auctions," as detailed below.[17] In other words, the auction is an alternative mechanism for resetting the coupon rate or dividend on the bond or preferred stock. The auctions are facilitated by broker-dealers ("remarketing agents")[18] and are generally held every 7, 28, 35, or 49 days. ARS are auctioned at par and are remarketed by one or more broker-dealers. There is rarely a resale market outside the periodic auctions. After a successful auction, new purchasers and continuing holders receive the rate determined at auction, and sellers, who have been receiving interest payments, get back the face value of their investment. If the auctions are continuously successful, ARS share characteristics with short-term, liquid securities.

Prior to a typical ARS auction, broker-dealers survey investor interest and give guidance to potential investors called "price talk." This is the range of rates within which the broker-dealer believes the auction is likely, though not guaranteed, to clear. The broker-dealer may consider factors such as prevailing market conditions and clearing rates for recent auctions of comparable securities. Current holders may sell, continue to hold at any clearing rate, or indicate that they wish to hold only if the clearing rate is at or above a particular level. Interested buyers submit purchase bids, and sellers submit sale bids.

In summary, there are four types of bids:

Buy .... The potential investor's bid includes a given rate and a quantity it will buy if the clearing rate is equal to or greater than this given rate;

Hold .... The current holder will continue to hold a given quantity at any clearing rate;

Hold-at-Rate .... The current holder will continue to hold a given quantity if the clearing rate is equal to or greater than the given rate, otherwise it will sell at the clearing rate;[19]

Sell .... The current holder will sell a given quantity at any clearing rate.

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[16] The London Interbank Offered Rate (LIBOR) is an interest rate at which banks lend to each other in the London interbank market. LIBOR exists for multiple currencies (banks may lend each other US dollars, Japanese yen, or other currencies) at different maturities such as overnight, one week, one month, and three months. British Bankers' Association, "BBA LIBOR – Frequently asked questions," 8 January 2008, available from http://www.bba.org.uk/bba/jsp/polopoly.jsp?d=225&a=1416.

The federal funds rate ("Fed Funds") is the interest rate at which US depository institutions make overnight loans of deposits held at the Federal Reserve to other depository institutions. Board of Governors of the Federal Reserve System, "Policymaking - Federal Open Market Committee," 22 April 2008, available from http://www.federalreserve.gov/monetarypolicy/fomc.htm.

[17] In addition, issuers sometimes enter into interest rate swaps with their ARS underwriters, effectively turning their variable-rate ARS into fixed-rate debt. Moody's Investors Service, "Moody's Assigns Aa2/VMIG 1 Ratings to Chelan County Pud Consolidated System Revenue Bonds, Refunding Series 2008B (AMT)," Press Release 5 March 2008.
See Appendix 2, Issuer Interest Rate Swaps, for a description of how these swaps work. For discussion of alternate auction types, see R. Preston McAfee and John McMillan, "Auctions and Bidding," *Journal of Economic Literature*, June 1987, v. 25, issue 2, pp. 699-738.

[18] See Exhibit 8 for a summary of recent litigation actions, including many against broker-dealers. The underwriter receives a fee based on a percentage of principal of securities sold, typically 25 basis points. "Corporate Governance: An Overview of the Auction Rate Securities Market," Morgan Stanley, available from http://www.morganstanley.com/about/company/governance/ars.html; "Description of Merrill Lynch's Auction Rate Securities Practices and Procedures," Merrill Lynch Global Markets & Investment Banking Group, available from http://ml.com/media/70501.pdf; Darrell Preston, "Auction Debt Succumbs to Bid-Rig Taint as Citi Flees," *Bloomberg*, 21 February 2008, available from http://www.bloomberg.com/apps/news?pid=20601087&sid=aXXucptLVGuc&refer=home.

[19] If an existing holder does not submit a bid, most auction procedures treat this as a hold bid. Securities Industry and Financial Markets Association, "Best Practices for Broker-Dealers of Auction Rate Securities," 2007, pg. 6, available from http://www.sifma.org/services/pdf/AuctionRateSecurities_FinalBestPractices.pdf. ("SIFMA Best Practices").

Bids are submitted to broker-dealers, who collect the information and pass it on to the "auction agent" by a particular deadline. Some broker-dealers allow bid submission right up until their own deadline with the auction agent, and some have an earlier internal deadline to allow time for processing. The auction agent determines if bids are such that the auction will succeed, i.e., if there is enough buyer demand to cover seller supply. Then the auction agent determines the clearing rate. Bids for each broker-dealer are then filled, sometimes on a *pro rata* basis, generally with settlement on the next business day. Broker-dealers in turn fill bids for their individual clients. Hold bids are filled first, followed by hold-at-rate and buy bids below the clearing rate, followed by hold-at-rate bids at the clearing rate, and finally, buy bids at the clearing rate. Hold-at-rate and buy bids above the clearing rate are not filled. An example helps illustrate.

An Example Auction

Take a hypothetical $100 million ARS. With a unit size of $25,000[20] this equates to 4,000 units outstanding. If holders of all 4,000 units decide to hold regardless of the clearing rate, i.e., they all submit "hold" bids, an "all-hold" auction occurs and the rate automatically resets to the all-hold rate specified in the security's official documents. If there are any hold-at-rate or sell bids, an all-hold auction cannot occur. For this example assume holders of 1,000 units have submitted holds (to hold at any rate). This means that there are 3,000 units potentially for sale in this auction. Assume the following bids:

1,000 sell
500 hold at 3% — bids of current holders
1,500 hold at 4%

700 buy at 3.5% — bids of potential investors
400 buy at 4.5%

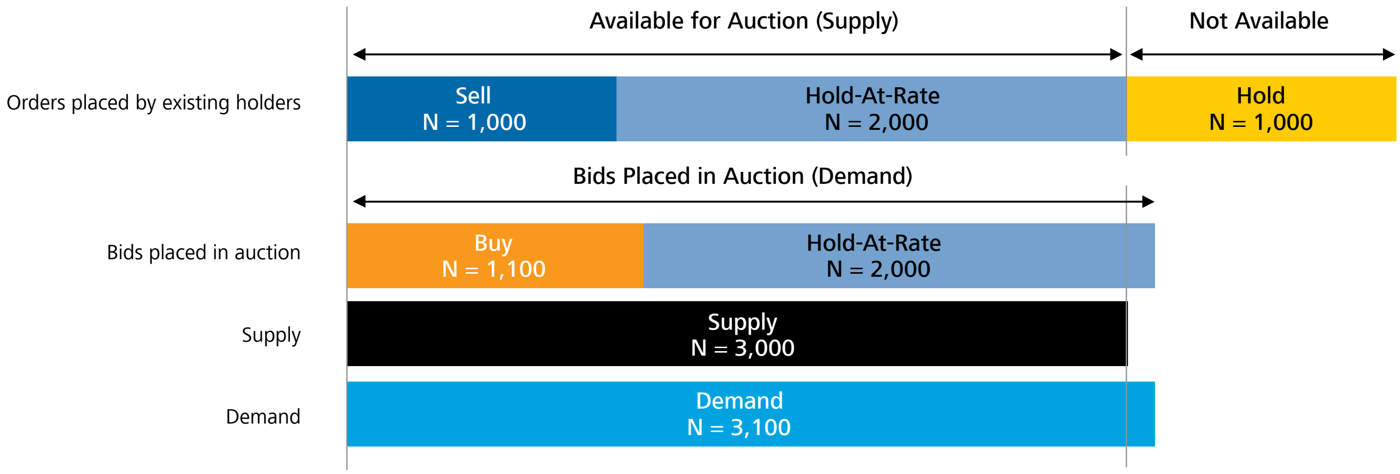
Given these bids, **will this auction succeed or fail?**

In order for an auction to succeed, buys must equal or exceed sells. This example auction will succeed because there are 1,100 buy bids and 1,000 sell bids. This calculation can also be expressed in terms of the supply of and demand for units. As we stated previously, there are 3,000 units potentially for sale in this auction. Demand totals 3,100 (2,000 hold-at-rate bids + 1,100 buy bids). Thus this auction will succeed as the demand of 3,100 units is greater than the supply of 3,000 units.[21] Exhibit 4 illustrates.

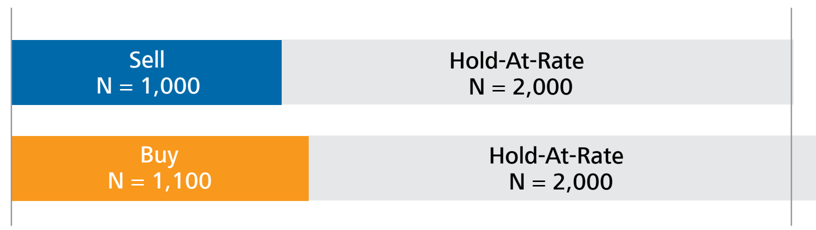
20 This is the "face value" or "par amount" for each unit.

21 The two calculations are actually equivalent, as a hold-at-rate bid can be thought of as a two-bid bundle: one sell bid and one buy bid. If we want to compare units of buy bids to units of sell bids, the result of the comparison is the same whether we include hold-at-rate bids or not.

Exhibit 4: **Auction Example**



In essence, a Hold-At-Rate order is a bundle of two orders: a sell order and a buy order (where the buy order is at a specified rate). Thus, one can easily answer the question, "Will this auction fail?" by ignoring Hold-At-Rate orders and directly comparing Buy and Sell orders.



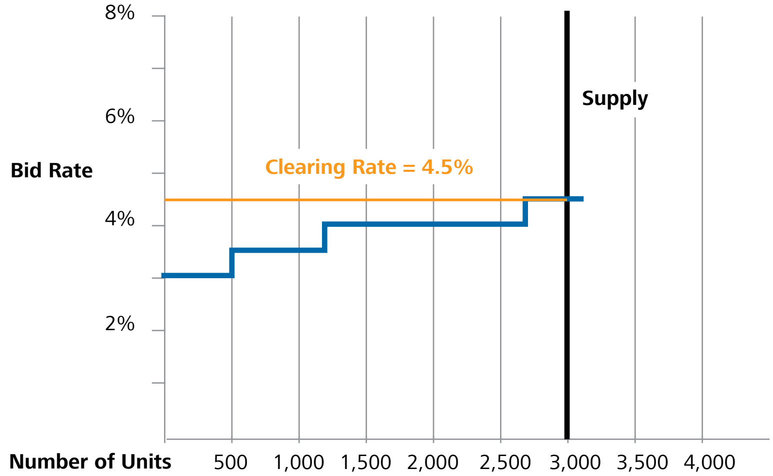
If, in our example, the supply of units increased by more than 100, or the demand for units fell by more than 100, the auction would fail (supply would exceed demand). Thus, we can see that auctions fail with an increase in holders wishing to sell units, a decrease in new buyers, or a combination of the two.

Now that we know this auction is successful, **what is the clearing rate?** First, we sort the bids and order them from lowest to highest rate:

Bid #	Order Type	Rate	Units	Supply to Allocate	Units Allocated	Total Allocated	Result	Remaining Supply	Clearing Rate
1	Hold-At-Rate	3.0%	500	3,000	500	500	Filled	2,500	
2	Buy	3.5%	700	2,500	700	1,200	Filled	1,800	
3	Hold-At-Rate	4.0%	1,500	1,800	1,500	2,700	Filled	300	
4	Buy	4.5%	400	300	300	3,000	Partial Fill	**0, Auction Clears**	**4.5%**

Then, we fill bids in order. The auction clears at the rate at which the last bid is fully or partially filled, in this case 4.5%. This is shown in Exhibit 5 (*following page*).

Exhibit 5: **Auction Supply and Demand – A Successful Auction**



In a second example, assume that bidder #2's bid size increased from 700 to 1,000:

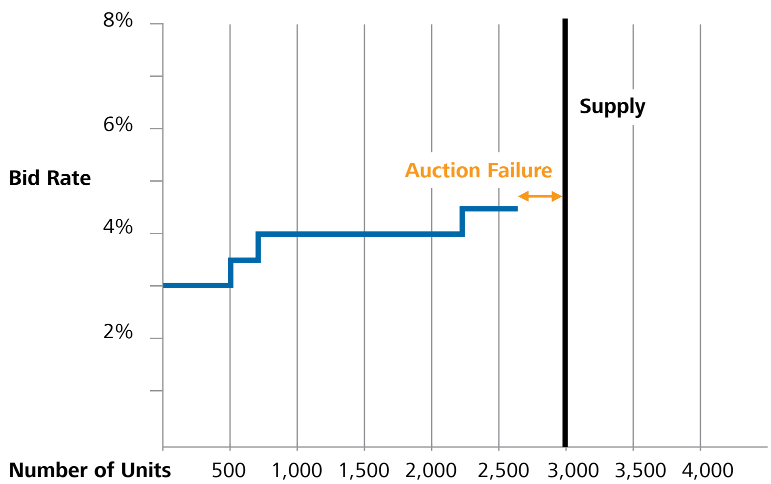
Bid #	Order Type	Rate	Units	Supply to Allocate	Units Allocated	Total Allocated	Result	Remaining Supply	Clearing Rate
1	Hold-At-Rate	3.0%	500	3,000	500	500	Filled	2,500	
2	Buy	3.5%	**1,000**	2,500	1,000	1,200	Filled	1,500	
3	Hold-At-Rate	4.0%	1,500	1,500	1,500	3,000	Filled	**0, Auction Clears**	**4.0%**
4	Buy	4.5%	400	0	0	3,000	Not Filled		

In this case the auction would clear at 4%, and bidder #4 would not make a purchase.

In a third example, assume that bidder #2 had only bid for 250 units. Total demand would be 2,650 (2,000 hold-at-rate bids + 650 buy bids), less than the supply of 3,000 units. This is depicted in Exhibit 6.

In this third example, the auction would fail, in which case all current investors would continue to hold, and the rate would reset to the penalty rate from the offering documents.

Exhibit 6: **Auction Supply and Demand – A Failed Auction**



Auction "Failures" and "All-Hold" Auctions

There are two auction outcomes with no clearing rate. One is when all current investors decide to continue holding at any rate: an "all-hold" auction. Until the next auction, holders will earn the all-hold rate set forth in the offering prospectus. The all-hold rate is typically a below-market rate. In February 2008, for example, the California Housing Finance Agency experienced an all-hold auction and the interest rate was set to 1.4%.[22]

The other auction outcome with no clearing rate is a failed auction, when seller supply outstrips buyer demand. In the case of failure, the rate reverts to the "penalty" or "maximum rate" set in the official documents. The maximum rate is typically an above-market rate that is also greater than the all-hold rate. After an auction failure, the securities remain with current holders, who may or may not have wished to sell, but who now receive the higher penalty rate. Penalty rates for municipal ARS tend to be much higher than those for the auction-rate preferreds of closed-end funds. For example, after an auction failure on 12 February 2008, the Port Authority of New York and New Jersey had one penalty rate of 20%, up from 4.25% one week prior and costing $300,000 in extra interest payments per week.[23] Closed-end funds with auction failures, on the other hand, might see increases of only 20 or 30 basis points.[24] For example, the average penalty rate for one type of closed-end fund was 3.8% as of March 2008.[25] Some states, such as Illinois, have caps which limit penalty rates for municipal issuers.[26]

A Brief History of the Auction-Rate Market

The 1980s: Auction Rates are Born

To reduce the high inflation of the late 1970s and early 1980s, the Federal Reserve raised the target Federal Funds rate to almost 20% by the early 1980s, resulting in a dramatic increase in borrowing costs for many institutions. In response to a demand for variable-rate and potentially lower-cost financing alternatives, investment banks began devising new and complex financial instruments. While some of these were short-lived, others became staple products, including the auction-rate security.

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[22] "197 Auction-Rate Security Sales Fail Wed; 74 Succeed –Source," *Dow Jones International News*, 27 February 2008.

[23] Note that 20% was the taxable rate. The equivalent tax-exempt rate was 15%, which may be directly compared to the previous week's tax-exempt rate of 4.25%. For example article citing 20%, see Ted Phillips, "Port Authority Auction Bonds Clear at 8%," *The Bond Buyer*, 20 February 2008. For dollar amount of increased interest payment, see: Michael Mackenzie and Aline Van Duyn, "Municipalities Face Shocker Borrowing Costs," *Financial Times – Print and Online*, 13 February 2008. For issuing document maximum rates, see "The Port Authority of New York and New Jersey, $350,000,000 Versatile Structure Obligations, Series 7," Official Statement Dated 12 July 2007, p. I-38 and "The Port Authority of New York and New Jersey, $350,000,000 Versatile Structure Obligations, Series 8," Official Statement Dated 27 September 2007, p. I-39. For auction clearing rates, see Bloomberg L.P. This issue has been restructured and was redeemed 1 May 2008.

[24] "Risk to Munis Rising from Auction Failures," *MoneyNews.com*, 12 March 2008, available from http://moneynews.newsmax.com/scripts/money/printer.pl?s=pf&page=http://moneynews.newsmax.com/money/archives/st/2008/3/12/120802.cfm.

[25] This penalty rate was the average for closed-end funds which themselves invest in municipal bonds. Allison Bisbey Colter, "Investing in Funds: A Quarterly Analysis—Going—Slowly—Fund firms are struggling to find ways to fix 'auction rate' shareholders' problems, and anger is mounting at the delays," *Wall Street Journal,* 3 April 2008, p. R2.

[26] Illinois' cap is 9%. Illinois Interest Act (815 ILCS 205/4), as amended by P.A. 81-1097, eff. 8 November 1979.

The first ARS was registered by American Express in July 1984.[27] The instrument was conceived by Ronald Gallatin, managing director of new product development in the Lehman Brothers Unit of Shearson Lehman/American Express.[28] American Express initially filed a shelf registration[29] with the SEC for $300 million of money market preferred shares (MMPs), with the first auctions to be held on 16 and 23 October.[30] Before the first auctions took place, two other issuers had entered the market, City Federal Savings & Loan with a registration of $75 million and US Steel Corp. with a registration of $250 million.[31] Several other issues followed. In November 1984, First Boston Corp. followed Shearson Lehman as an ARS underwriter with the issuance of $100 million for Lincoln National Corp.[32]

Market Evolution and the First Auction Failures

While the original auction-rate securities were uninsured and uncollateralized, US Steel's 1985 issue of MMPs, its second, was insured, thus paying a dividend rate 200 basis points less than its first issue.[33] The insurance directly reduced default risk to investors. In September 1987, Mattel introduced an issue of ARS collateralized by trade receivables backed by an insurance firm's agreement to buy the receivables at a preset price.[34] This reduced the default risk associated with the issue and Mattel's borrowing cost.

In addition to the possibility of default, the inherent risk of auction failure was evident early on. While bond insurance provided many issues with the highest possible credit ratings, these ratings addressed the likelihood of issuer default, *not* the likelihood of auction failure. In a 1985 *Wall Street Journal* article, Ann Monroe wrote:

> The Dutch auction only works because investors believe it will work. So anything that shook investor confidence—for example, severe financial problems among a group of issuers—could make the concept unworkable and jeopardize price stability.[35]

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27 "Finance/New Issues; American Express Sets New Preferred Shares," *New York Times*, 26 July 1984, Late City Final Edition. ("American Express Sets New Preferred Shares," *New York Times*).

28 Leslie Wayne, "Fathers of Invention: Ronald L. Gallatin and E. Philip Jones; Giving Birth To 'Unbundled' Stock," *New York Times*, 18 December 1988, Late City Final Edition; "American Express Sets New Preferred Shares," *New York Times*.

29 A shelf registration is filed in advance of actual issuance.

30 While "MMP" was an alternative name for auction rate preferred securities, these have generally not been eligible for purchase by money market funds due to the Rule 2a-7 requirement for a "hard put" or "tender option." This is described in more detail in this paper's section "Responses to Current Failures." Different underwriters coined other names for these securities as well, such as Dutch auction rate preferred stock (DARPS), short-term auction rate stock (STARS), Dutch auction rate transferable securities (DARTS), and auction market preferred stock (AMPS). Michael J. Alderson and Donald R. Fraser, "Financial Innovations and Excesses Revisited: The Case of Auction Rate Preferred Stock," *Financial Management*, 22 June 1993, p. 61 ("Michael J. Alderson and Donald R. Fraser"); "American Express Files $300 Million Preferred Shares," *Dow Jones News Service – Ticker*, 25 July 1984; "American Express Issues Money Market Preferred Stock," *Dow Jones News Service*, 27 August 1984; The Investment Company Act of 1940, Rule 2A-7 – Money Market Funds, published by The University of Cincinnati College of Law, available from http://www.law.uc.edu/CCL/InvCoR1s/rule2a-7.html. ("Rule 2a-7"); Tim Anderson and Kevin Nicholson, "Fixed Income Weekly, Advisory Services: Fixed Income Strategy," *Wachovia Securities,* 19 February 2008, p. 2.

31 "Briefs; Debt Issues," *New York Times*, 8 October 1984, Late City Final Edition.

32 "Shop Talk: New Offering, Old Language," *Wall Street Journal*, 15 November 1984, sec. J.

33 Ann Monroe, "Money Market Preferred Finds Favor With Debt Issuers Since '84 Introduction," *Wall Street Journal*, 13 August 1985, sec. J. ("Ann Monroe").

34 "Finance/New Issues; Mattel Receivables Back Unit's Preferred Stock," *New York Times*, 18 September 1987, Late City Final Edition.

35 Ann Monroe.

Twenty-two years later, PIMCO managing director Paul McCulley wrote:

> Liquidity is not a pool of money but rather a state of mind… liquidity is about borrowers' and lenders' collective appetite for risk, a function of the willingness of investors to underwrite risk and uncertainty with borrowed money and the willingness of savers to lend money to investors.[36]

The year 1987 saw the first auction failure, causing the dividend rate on a $125 million MCorp preferred stock issue to jump to a maximum allowed rate exceeding 10%. Following this failure, Shearson Lehman provided liquidity to the market by offering to buy the issue from investors. In 1988 Shearson Lehman disclosed that it held $117.5 million of these securities, and in the first half of 1989 MCorp filed for bankruptcy. Due to the bankruptcy, Shearson Lehman wrote down the entire value of its MCorp auction-rate position in 1989.[37] Two auctions for the Kroger Company also failed in 1988, though these issues were quickly redeemed at par value as part of a restructuring plan.[38]

The auction-rate market was initially dominated by corporate issuers and corporate investors. Prior to The Tax Reform Act of 1986, corporate investors could exclude 85% of their preferred dividends from taxation. After the '86 Act and an additional reduction in the exclusion for dividends after 31 December 1987, this tax advantage diminished. In addition, explicit tax advantages for traditional debt increased with changes in the tax code in the late 1980s.[39]

Continuing Market Development and the May 2006 SEC Settlement

The auction-rate market continued to develop and expand throughout the 1990s and 2000s. Other types of issuers saw the value in these products which generally allowed them to finance long-term assets at short-term borrowing rates. While the total par value of outstanding municipal auction-rate securities is small relative to the entire municipal debt market, its importance increased during this time. Municipal ARS bonds comprised less than one-half of one percent of new issuance in 1990, but represented over 8% in 2006.[40] Closed-end mutual funds used auction-rate preferreds to provide leverage and enhance returns to their common shareholders. Student loan lenders issuing student loan asset backed securities (SLABS) tapped the auction-rate market. More recently, while only representing a small slice of the auction-rate market, even CDOs issued auction-rate securities.

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36 McCulley, in turn, is drawing on the ideas of John Maynard Keynes, in Keynes' *General Theory of Employment, Interest, and Money* published in 1935. Paul McCulley, "Global Central Bank Focus, A Reverse Minsky Journey,"*Newport Beach, CA PIMCO*, October 2007, available from http://www.pimco.com/LeftNav/Featured+Market+Commentary/FF/2007/GCBF+October+2007.htm.

37 Rick Stine, "Dutch Auction of MCorp Stock Called a Failure," *Wall Street Journal*, 12 August 1987, sec. J; Tom Herman and David Rivers, "Columbus Day Leaves U.S. Bond Markets Quiet; Prices of Treasury Bond Futures Fall Slightly," *Wall Street Journal*, 11 October 1988, sec. J; Michael Weiss, "MCorp Plan Offered, Sources Say," *Dallas Morning News*, 6 April 1989, p. 5D; "Shearson Lehman to Take A Charge of $35.2 Million," *Wall Street Journal*, 10 April 1989, sec. J.

38 In fact, one article describes the Kroger failure as a result of the restructuring plan. Michael J. Alderson and Donald R. Fraser; Kenneth N. Gilpin, "Credit Markets; U.S. Issues Fall in Light Trading," *New York Times*, 28 September 1988, Late City Final Edition; "Kroger Co. to Call All Series of Auction Preferred Stock," *PR Newswire*, 27 September 1988.

39 Michael J. Alderson and Donald R. Fraser.

40 On a dollar basis. On the basis of number of issues, municipal ARS also represented less than one-half of one percent in 1990, and over two and a half percent in 2006. Matthew Kreps, ed., *The Bond Buyer, Thomson Financial, 2007 Yearbook*, (New York: SourceMedia, Inc., 2007), pp. 4-7. ("2007 Bond Buyer Yearbook").

After an investigation, beginning in 2004, of underwriting practices and the auction process, the SEC issued cease and desist orders and settled with 15 banks and broker-dealers for a collective $13.375 million in May 2006.[41] The SEC's order identified several "violative practices" related to

- Completion of Open or Market Bids: "…allowed the Respondent to designate some or all of the bid's parameters, such as the specific security, rate, or quantity."
- Interventions in Auctions
  - Bids To Prevent Failed Auctions: "Without adequate disclosure, certain Respondents bid to prevent auctions from failing."
  - Bids To Set a "Market" Rate: "Without adequate disclosure, certain Respondents submitted bids or asked investors to change their bids so that auctions cleared at rates… considered to be appropriate 'market' rates."
  - Bids To Prevent All-Hold Auctions: "Without adequate disclosure, certain Respondents submitted bids or asked investors to submit bids to prevent the all-hold rate."
- Prioritization of Bids: "Before submitting bids to the auction agent, certain Respondents changed or 'prioritized' their customers' bids to increase the likelihood that the bids would be filled."
- Submission or Revision of Bids After Deadlines: "In certain instances, these practices… advantaged investors or Respondents who bid after a deadline by displacing other investors' bids, affected the clearing rate, and did not conform to disclosed procedures."
- Allocation of Securities: "Certain Respondents exercised discretion in allocating securities to investors who bid at the clearing rate instead of allocating the securities pro rata as stated in the disclosure documents."
- Partial Orders: "When [investors would have received a pro rata allocation of securities after an oversubscribed auction]… certain Respondents did not require certain investors to follow through with the purchase of the securities even though the bids were supposed to be irrevocable."
- Express or Tacit Understandings To Provide Higher Returns: "[for example] certain Respondents provided a higher return by delaying the settlement date for certain investors."
- Price Talk: "Certain Respondents provided different 'price talk' to certain investors."[42]

Three additional broker-dealers reached a $1.6 million settlement with the SEC in January 2007 regarding a subset of these practices.[43] In May 2007, the SEC fined Citigroup Global Markets, as successor by merger to Legg Mason Wood Walker, $200,000 for "interven[ing] in auctions by bidding for its proprietary account to prevent failed auctions without adequate disclosure… LMWW submitted bids to ensure that all of the securities would be purchased to avoid failed auctions and thereby, in certain instances, affected the clearing rate."[44]

[41] "15 Broker-Dealer Firms Settle SEC Charges Involving Violative Practices in the Auction Rate Securities Market, Firms Ordered to Cease and Desist and to Pay Over $13 Million in Penalties," US Securities and Exchange Commission, Press Release 2006-83 31 May 2006, available from http://www.sec.gov/news/press/2006/2006-83.htm; Order Instituting Administrative and Cease-and-Desist Proceedings, Making Findings, and Imposing Remedial Sanctions and a Cease-and-Desist Order Pursuant to Section 8A of the Securities Act of 1933 and Section 15(b) of The Securities Exchange Act of 1934, In the Matter of Bear, Stearns & Co. Inc. et al, Administrative Proceeding File No. 3-12310, 31 May 2006, available from http://www.sec.gov/litigation/admin/2006/33-8684.pdf. ("May 2006 SEC Settlement").

[42] May 2006 SEC Settlement, pp. 5-8.

[43] Order Instituting Cease-And-Desist Proceedings, Making Findings, and Imposing a Cease-And-Desist Order Pursuant to Section 8A of the Securities Act of 1933, *In the Matter of Deutsche Bank Trust Company Americas, The Bank of New York, and Wilmington Trust Company*. Administrative Proceeding File No. 3-12526. 9 January 2007.

[44] Order Instituting Administrative Proceedings, Making Findings, and Imposing Remedial Sanctions Pursuant to Section 15(b) of the Securities Exchange Act of 1934, *In the Matter of Citigroup Global Markets, Inc., successor by merger to Legg Mason Wood Walker Inc.* Administrative Proceeding File No. 3-12629. 7 May 2007, p. 4.

In 2007, the Securities Industry and Financial Markets Association (SIFMA) issued "Best Practices for Broker-Dealers of Auction Rate Securities."[45] These addressed topics such as the broker-dealer's obligations, bidding by the broker-dealer, bidding by investors, and the relationship between broker-dealers and the auction agent.

The Current Situation: 2007 to the Present

After more than two decades of stable auction-rate market conditions, this market has experienced unusual and difficult conditions in the last several months. These originated with the broader subprime and credit crisis, which the President's Working Group recently described:

> Since mid-2007, financial markets have been in turmoil. Soaring delinquencies on US subprime mortgages were the primary trigger of recent events. However, that initial shock both uncovered and exacerbated other weaknesses in the global financial system. Because financial markets are interconnected, both across asset classes and countries, the impact has been widespread… uncertainty about asset valuations in illiquid markets and about financial institutions' exposures to asset price changes left investors and markets jittery.[46]

Auction-rate markets saw several failures during the second half of 2007; these issues were generally poorly collateralized or had less creditworthy issuers. As early as September 2007, some corporations took write-downs on their auction-rate holdings.[47] Through the end of 2007, a few other auction failures occurred, but these were generally believed to be isolated in nature. By late 2007, as defaults on subprime mortgages soared, markets began to question the ability of monoline insurers to support their obligations.[48] As a result, the major ratings agencies began to downgrade or review the credit ratings of the monolines. Many of these, such as Ambac, MBIA, FGIC, and XL Capital, are major insurers backing auction-rate bonds.[49] If part of a bond's value is attributable to its insurance, and investors believe this insurance has become less valuable, the bond is worth less. In the case of an auction-rate bond, this will be expressed as a higher clearing rate at auction, as investors will demand a higher rate to hold the same bond. If investors demand a rate higher than the maximum rate specified in the bond's official documents, the auction will fail.

By February 2008, rattled by the widening credit crisis and problems at the monoline insurers, auction-rate demand dried up, leading to numerous auction failures. Three days in February alone marked the failure of more than 1,000 auctions.[50] A Standard & Poor's analyst commented, "I don't think anyone could have predicted in the winter of 2008 the auction-rate market was going to move away from everybody."[51]

45 SIFMA Best Practices.

46 The President's Working Group on Financial Markets, "Policy Statement on Financial Market Developments," March 2008, p. 1 and p. 9, available from http://www.treasury.gov/press/releases/reports/pwgpolicystatemktturmoil_03122008.pdf

47 See this paper's section "Corporate Holders: Liquidity, Financial Statement Effects, and Fair Valuation" for an analysis of a corporate disclosure.

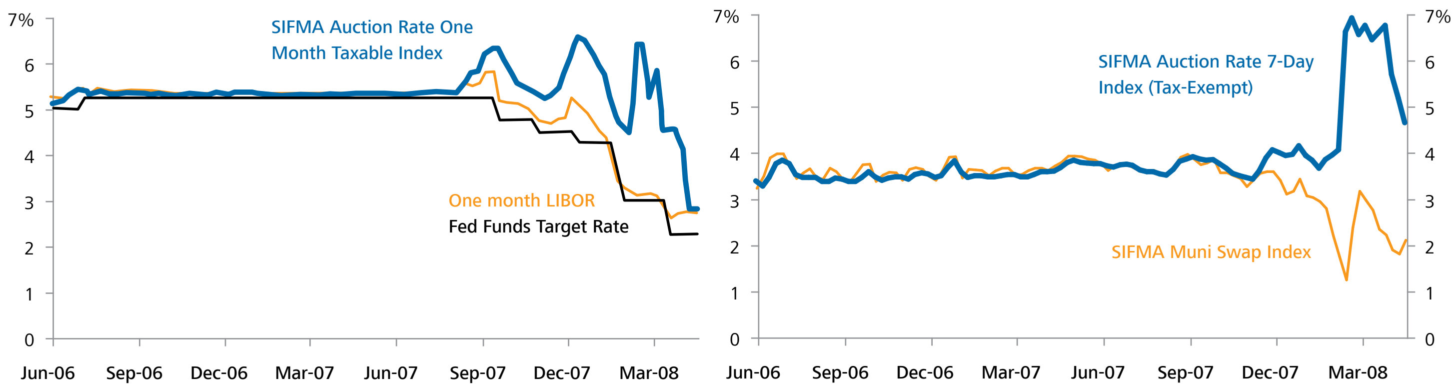
48 Monoline insurers only write financial guarantee insurance contracts.

49 2007 Bond Buyer Yearbook.

50 Julie Creswell and Vikas Bajaj, "Municipalities Feel Pinch as Another Debt Market Falters," *New York Times*, 15 February 2008, Late Edition – Final, p. 1.

51 Dan Fitzpatrick, "Crunch in Bond Market Hits UPMC," *Pittsburg Post-Gazette*, 20 February 2008, available from http://www.post-gazette.com/pg/08051/858719-28.stm.

Exhibit 7: **SIFMA Auction-Rate Indices and Benchmark Rates**



Sources: SIFMA, British Bankers Association, Federal Reserve.

As seen in Exhibit 7, spreads between ARS rate indices and their typical benchmarks have sharply increased over the last several months.

Response to Current Failures

Issuers: Maximum Rates and Restructuring

While different types of issuers face varying problems in the current environment, they are all generally very focused on the recent auction failures. Responses have naturally been driven by the characteristics of each type of issuer and of their auction-rate issues. We explore related problems and possible responses for two issuer types, municipalities and closed-end mutual funds, below.

Municipal Issuers

Many municipal issuers have seen sharply increased interest payments on their ARS, due to rates resetting to punitive penalty rates after failed auctions and to increased clearing rates in successful auctions. Some municipal issuers entered into floating-for-fixed interest rate swaps at the time of issuance to hedge their interest rate risk and make their total interest payments more predictable (as described in Appendix 2), but for those with fixed penalty rates, the hedges may not be working as initially anticipated.[52] Many have no interest rate hedges, working as anticipated or otherwise, and have not budgeted for higher interest costs. Municipalities therefore have strong incentives to restructure their auction-rate debt.

Depending on the terms of the original bond documents, municipal issuers may be able to change the "mode" of their auction-rate securities from "auction mode" to "tender mode." This means the auction-rate security would be restructured into a bond that included a "tender option," for example, a variable-rate demand note. Variable-rate demand notes (VRDNs)[53] are short-term variable-rate bonds that include a "hard put" or "tender" option to force either the issuer or a third party agent ("tender agent," usually the sponsoring bank) to purchase the bonds, generally at par, at certain designated times. This liquidity provision occurs via a liquidity facility or a letter of credit and the tender agent effectively provides a liquidity backstop for the VRDN. Interestingly, to create an index for benchmarking use in municipal swaps, SIFMA uses interest rate data from VRDNs.[54]

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52 We explore this in Appendix 2, Issuer Interest Rate Swaps. In general, an issuer enters into a pay-fixed, receive-float swap where it pays a fixed rate and receives LIBOR (or other variable rate) minus a spread. If the ARS generally prices at a given spread over LIBOR, the issuer will pay, approximately, the fixed swap rate plus the two spreads every period, regardless of changes in LIBOR.

53 These are sometimes called variable-rate demand bonds or variable-rate demand obligations.

54 Historically, this was called the BMA Municipal Swap Index, and is currently called the SIFMA Municipal Swap Index.

Acting with great dispatch, both the IRS and the SEC have responded to help address municipal issuers' current concerns.[55] It was important for tax-exempt issuers to get reassurance from the IRS that switching interest rate modes would not trigger retesting of all their various program requirements for tax purposes. In addition, issuers wanted guidance from the SEC that if they self-bid at their own auctions, this would not be prosecuted as market manipulation. The Municipal Securities Rulemaking Board (MSRB)[56] issued three recent notices related to auction-rate securities that addressed application of MSRB rules to ARS, a plan for increased reporting of ARS data, and remarketing of auction-rate issues.[57] In addition to switching interest rate mode on multi-modal issues, municipal issuers may pursue other possibilities such as holding less frequent auctions.[58]

While municipalities work furiously to restructure, they may encounter some problems in doing so. Due to recent credit market conditions, many banks are looking to deleverage their own balance sheets,[59] potentially making it more difficult for them to offer additional liquidity backstops. Not only have letters of credit become much more expensive in recent months, it may be difficult to obtain one at all without an existing relationship in place.[60] Finally, municipal issuers may need to make payments to eliminate interest rate swaps before moving forward with restructuring.

Recent events have not been uniformly negative for municipal issuers. For example, one utility district in northern California restructured its auction-rate bonds at the beginning of 2008 into lower-cost variable-rate financing without bond insurance.[61]

Closed-End Mutual Funds

While the goal of municipal issuers is clear—to minimize interest costs—closed-end funds that have issued auction-rate preferred stock must grapple with fiduciary duties to both their preferred stock and common shareholders. Some preferred shareholders who are now holding illiquid preferred stock have suggested that the closed-end fund sell assets in order to redeem the preferred at par, thus providing liquidity.[62] This may present a conflict, however, if their auction-rate preferred is

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55 IRS Notice 2008-27 was issued 20 February 2008 and Notice 2008-41 was issued 25 March 2008. The SEC's letter to SIFMA and Ropes & Gray is dated 14 March 2008. "Reissuance Standards for State and Local Bonds," Internal Revenue Service Notice 2008-27, 20 February 2008, available from http://www.irs.gov/pub/irs-drop/n-08-27.pdf; "Reissuance Standards for State and Local Bonds," Internal Revenue Service Notice 2008-41, 25 March 2008, available from http://www.irs.gov/pub/irs-drop/n-08-41.pdf; Erik R. Sirri and John W. White, "Letter to Leslie M. Norwood and Anne Phillips Ogilby Re: Municipal Auction Rate Securities, U.S. Securities and Exchange Commission," 14 March 2008, available from http://www.sifma.org/capital_markets/docs/SEC--ARS-Letter.pdf.

56 The MSRB was established in 1975 with the passage of the Securities Act Amendment of 1975. MSRB rules must be approved by the SEC. Frank Fabozzi, ed., 281; National Federation of Municipal Analysts, "White Paper on Federal Securities Law Relating to Municipal Securities," March 2008, p. 5.

57 Municipal Securities Rulemaking Board, "Application of MSRB Rules to Transactions in Auction Rate Securities," MSRB Notice 2008-09, 19 February 2008, available from http://msrb.org/msrb1/whatsnew/2008%2D09.asp; Municipal Securities Rulemaking Board, " Request for Comment: Plan for Increasing Information Available for Municipal Auction Rate Securities," MSRB Notice 2008-15, 17 March 2008, available from http://msrb.org/msrb1/whatsnew/2008-15.asp; Municipal Securities Rulemaking Board, "Submission of Official Statements to the MSRB Under Rule G-36 in Connection With Certain Remarketings of Outstanding Issues," MSRB Notice 2008-17, 25 March 2008, available from http://msrb.org/msrb1/whatsnew/2008-17.asp.

58 For example, Trinity Health of Novi, Michigan, decided in March 2008 to hold auctions less frequently until it can make a fall 2008 decision about fully restructuring its debt. Melanie Evans, "Cost of Doing Business; Not-for-profits Hasten to Leave Auction-Rate Securities," *Chicago Modern Healthcare*, 24 March 2008, vol. 38, p. 8.

59 Paul J Davies, "Revolvers Trigger Dangers for Banks," *Financial Times*, 11 April 2008, p. 39.

60 Andrew Ward, "California: Riverside Shedding Its ARS," *Bond Buyer*, 18 April 2008, vol. 364, p. 9; Jeremy R. Cooke, "Auction Collapse Quadruples Fee for Bond Alternatives (Update 2)," *Bloomberg*, 7 April 2008, available from http://www.bloomberg.com/apps/news?pid=20601109&sid=ag2UO4Orn4kI&refer=home.

61 Daniel Borenstein, "Subprime Crisis Hits Governments," *Walnut Creek, CA Contra Costa Times*, 30 March '08, p. a20

62 Nuveen Investments, Auction-Rate Securities Conference Call, 3 April 2008, available from http://www.nuveen.com/ResourceCenter/AuctionRatePreferred/AuctionRatePreferred.aspx.

currently paying a rate below that earned on the assets, as common shareholders benefit from the fund's leverage in this scenario. In addition, when potentially restructuring out of preferred stock into debt, fund advisors must consider the higher regulatory asset coverage required for debt leverage (300%) than for equity leverage (200%).[63] NERA's forthcoming paper on closed-end municipal bond funds will further explore the impact of recent events on these issuers.

Corporate Holders: Liquidity, Financial Statement Effects, and Fair Valuation

Hundreds of corporate ARS holders have recently experienced failed auctions.[64] This reduced liquidity may (a) cause corporate holders to reassess whether to continue investing in ARS, (b) affect current or future operating or investing decisions while money invested in ARS is inaccessible, and/or (c) impact financial statements due to a different accounting treatment for ARS, potentially including a new methodology for determining fair value. Other ARS-related economic impacts may include stock analyst downgrades, credit rating agency downgrades, and concerns about the ability to meet operating cash flow needs. We further explore the impact on financial statements by examining a recent write-down by Bristol-Myers Squibb.

During the fourth quarter of 2007, Bristol-Myers Squibb (BMS) wrote down the value of its ARS by almost 50%. This impacted its 2007 financial statements in several ways: [**1**] ARS were reclassified on the balance sheet from current to non-current assets, [**2**] the value of these assets was adjusted downward, [**3**] the other-than-temporary portion of this adjustment appeared as an expense on the income statement, and [**4**] the temporary portion of this adjustment bypassed the income statement and appeared on the balance sheet in other comprehensive income. Disclosures for these four effects are marked below as [**1**], [**2**], [**3**], and [**4**].

Bristol-Myers Squibb's 2007 10-K describes its ARS holdings:

> The Company's investments in ARS represent interests in collateralized debt obligations supported by pools of residential and commercial mortgages or credit cards, insurance securitizations and other structured credits, including corporate bonds. Some of the underlying collateral for the ARS held by the Company consists of sub-prime mortgages.[65]

Looking back to Exhibit 2, Size and Composition of the Auction-Rate Market, Year End 2007, we can see that BMS's auction-rate securities fall into the "other category," which constitutes approximately 5% of the total auction-rate market. BMS's 10-K also describes some recent problems with these particular holdings:

> The ARS… have experienced multiple failed auctions… in the fourth quarter of 2007, $79 million of principal invested in ARS held by the Company were downgraded and others were placed on credit watch.[66]

As a result, BMS reclassified its ARS holdings:

> Historically… ARS were presented as current assets under marketable securities. Given the failed auctions… remaining ARS [in the company's portfolio] ha[ve] been reclassified from marketable securities to non-current other assets [**1**].[67]

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63 The Investment Company Act of 1940, Sections 18a 1A and 2A.

64 Michael Rapoport, "In the money: Numbers Suggest Auditors May Differ on ARS," *Dow Jones News Service*, 15 April 2008.

65 Bristol-Myers Squibb Company 10-K for the year ended 31 December 2007, p. 63.

66 *Ibid*, p.63.

67 *Ibid*, p. 63.

In addition, BMS wrote down the carrying value of its ARS holdings:

> The estimated market value of the Company's ARS holdings at December 31, 2007 was $419 million, which reflects a $392 million adjustment to the principal value of $811 million [**2**]. Although the ARS continue to pay interest according to their stated terms, based on valuation models and an analysis of other-than-temporary impairment factors, the Company has recorded a pre-tax impairment charge of $275 million in the fourth quarter of 2007, reflecting the portion of ARS holdings that the Company has concluded have an other-than-temporary decline in value [**3**]. In addition, the Company recorded an unrealized loss of $117 million (pre-tax and net of tax) in accumulated OCI as a reduction in shareholders' equity, reflecting adjustments to ARS holdings that the Company has concluded have a temporary decline in value [**4**].[68]

As of 31 December 2007, BMS owned auction-rate securities with a total principal value of $811 million, but it determined that the fair value of these was $419 million at that time. This downward adjustment in value had an "other-than-temporary" portion ($275 million) and a "temporary" portion ($117 million). While FAS 115, *Accounting for Certain Investments in Debt and Equity Securities*, states that the investor must determine if impairment is temporary or other-than-temporary, it does not define these terms explicitly in terms of a specific length of time.[69] An SEC Staff Accounting Bulletin tells us that "other-than-temporary" does not mean "permanent."[70] In practice, auditors may use a several month rule of thumb in determining when impairment has taken place.[71] In BMS' case, the other-than-temporary portion was part of a line on the income statement called "other expense, net" while the temporary portion appeared in other comprehensive income (OCI) on the balance sheet. Items in OCI bypass the income statement, thereby directly reducing owners' equity.

Finally, Bristol-Myers Squibb describes how it determined the fair value for its ARS, but provides no quantitative analyses or valuation models:

> Due to the lack of availability of observable market quotes on the Company's investment portfolio of marketable securities and ARS, the Company utilizes valuation models including those that are based on expected cash flow streams and collateral values, including assessments of counterparty credit quality, default risk underlying the security, discount rates and overall capital market liquidity.[72]

FAS 157, *Fair Value Measurements*, effective for fiscal years beginning after 15 November 2007, establishes a hierarchy for the inputs used to determine fair value: "Level 1" (quoted prices in active markets for identical assets or liabilities), "Level 2" (non-Level I inputs that are observable either

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68 *Ibid*, p. 63.

69 Rather than defining a rule based on a specific length of time, one must consider many factors such as the likelihood of collecting all contractual amounts due, how long and the extent to which the current market value is less than the investor's cost, the financial condition of the issuer, and the intent and ability of the investor to continue holding the security. Financial Accounting Standards Board, "Statement of Financial Accounting Standards No. 115 – Accounting for Certain Investments in Debt and Equity Securities," (Connecticut: May 1993), par. 16.; U.S. Securities and Exchange Commission, "SEC Staff Accounting Bulletin: Codification of Staff Accounting Bulletins, Topic 5: Miscellaneous Accounting," 23 March 2004, par. M, available from http://www.sec.gov/interps/account/sabcodet5.htm#5m. ("SEC Staff Accounting Bulletin Topic 5").

70 SEC Staff Accounting Bulletin Topic 5.

71 See, for example, Michael Rapoport, "In the Money: 1Q Earnings May Bring More ARS Write-Downs," *Dow Jones News Service*, 11 April 2008.

72 Bristol-Myers Squibb Company 10-K for the year ended 31 December 2007, p. 77.

directly or indirectly), and "Level 3" (unobservable inputs).[73] While we cannot say how all investors will treat their various auction-rate holdings, it *is* clear that, in the absence of observable prices for identical securities, valuation inputs for failed ARS can no longer be considered Level 1 inputs.

Investors

When auctions of their holdings fail, investor responses are generally limited to continuing to hold or attempting to sell in very limited secondary markets. The Financial Industry Regulatory Authority (FINRA) issued an investor alert on 31 March 2008, that outlined four investor options: continuing to hold, selling in the secondary market, borrowing on margin (while continuing to hold), and liquidating other investments (also while continuing to hold).[74] If available, secondary market sales are likely to be below par. On 2 April 2008, Barry Silbert of Restricted Stock Partners, one of the few secondary markets for ARS, said the average range of bids on their exchange has been 75 to 95 cents on the dollar.[75]

On 28 March 2008, UBS announced they would mark down many ARS in their retail clients' portfolios. More than 90% would be marked below par in some way, but more than two-thirds of auction rates being marked down would be valued at 97% or better.[76] On 31 March 2008, Merrill Lynch told its brokers that most of its clients' ARS would not be priced at discounts in March statements.[77]

Litigation

While there is some historical precedent for litigation related to auction failures, the relative stability of the market had previously discouraged any widespread litigation. In those cases where auctions failed, broker-customer disputes were generally resolved at arbitration. Since the onset of widespread failures in mid-February 2008, many law firms have filed arbitration claims on behalf of individual investors similar to the ARS broker-customer disputes seen in the early 1990s. In addition, some law firms have filed complaints against several broker-dealers and are seeking class action status. These complaints allege that broker-dealers created an "artificial market for ARS which would dry up as soon as these broker-dealers decided to remove themselves from the auction process."[78] In late March 2008, the Massachusetts Securities Division issued subpoenas to UBS, Bank of America, and Merrill Lynch. William Galvin, the Secretary of the Commonwealth, said his office is looking into the suitability of these investments for individuals, and into the role the major investment banks played in auction failures.[79] In addition, both the SEC and FINRA have launched investigations into how broker-dealers marketed ARS.[80] Several other states, including New York, are also investigating this market.

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73 Financial Accounting Standards Board, "Statement of Financial Accounting Standards No. 157 – Fair Value Measurements," (Connecticut: September 2006), pp. 42 – 48.

74 Financial Industry Regulatory Authority, "Auction Rate Securities: What Happens When Auctions Fail," 31 March 2008, available from http://www.finra.org/InvestorInformation/InvestorAlerts/TradingSecurities/AuctionRateSecuritiesWhatHappensWhenAuctionsFail/P038207.

75 Anastasija Johnson, "Secondary Bids Value Auction Debt 5-25 pct Below Part," *Reuters News*, 2 April 2008.

76 Evelyn Juan, et al., "UBS Cutting Value of Auction Rate Securities in Brokerage Accts," *Dow Jones News Service*, 28 March 2008.

77 Evelyn Juan and Ian Salisbury, "Merrill Lynch Still Pricing Most Auction-Rates at Par," *Dow Jones News Service*, 31 March 2008.

78 *Richard Stanton (as trustee for Ashley Stanton) on behalf of himself and all others similarly situated v. Merrill Lynch & Co., Inc. and Merrill Lynch, Pierce, Fenner & Smith Incorporated*, No. 08. CV 03054, Southern District of New York, 26 March 2008.

79 "Mass. regulator subpoenas UBS, Merrill, BofA," *Reuters News*, 28 March 2008.

80 Bailey Somers, "Regulators Prove Auction-Rate Securities Sales," *Securities Law 360*, 9 April 2008.

Exhibit 8 summarizes auction rate litigation and regulatory investigations announced or filed from 17 January 2008 to 17 April 2008.

Exhibit 8: **Litigation and Regulatory Responses** | 17 January 2008 through 17 April 2008

Bank	Class Action[1]	Arbitration[2]	Regulatory Investigation or Subpoena[3,4]
AG Edwards			NY
Bank of America			MA, NY
Citigroup	SDNY		MO, NY
Deutsche Bank	SDNY		NY
Edward Jones			MO
E*TRADE Financial	SDNY		NY
First Albany			NY
Goldman Sachs	SDNY		NY
JP Morgan Chase	SDNY		NY
Lehman Brothers Holdings		FINRA	NY
Merrill Lynch	SDNY	FINRA	MA, MO, NY
Morgan Keegan			NY
Morgan Stanley	SDNY		NY
Oppenheimer Holdings	SDNY		MO
Piper Jaffray			NY
Raymond James Financial	SDNY		NY
RBC Dain Rauscher			NY
Scottrade			MO
Stifel, Nicolaus & Co.			MO
SunTrust Banks	NDGA		
TD Ameritrade	SDNY, USDC-NE		NY
UBS	SDNY	FINRA	MA, MO, NY
Wachovia	SDNY	FINRA	MO, NY
Wells Fargo	WDTX, NDCA		

Notes:

(1) NDCA = Northern District of California. NDGA = Northern District of Georgia.
SDNY = Southern District of New York. WDTX = Western District of Texas.
USDC-NE = United States District Court—Nebraska.

(2) FINRA = Financial Industry Regulatory Authority. Non-Class Action suits have generally been filed as FINRA arbitrations, as dictated by brokerage agreements. These arbitrations are separate from a FINRA investigation that is being conducted with the aid of the SEC. As arbitration claims are generally not a matter of public record, this table may omit some FINRA claims. We have relied on publicly available news sources.

(3) MA = Massachusetts; Subpoenas announced by William Galvin, Secretary of the Commonwealth.
MO = Missouri; Investigation announced by Robin Carnahan, Secretary of State.
NY = New York; Subpoenas announced by Andrew Cuomo, Attorney General.

(4) A nine-state task force, including Florida, Georgia, Illinois, Massachusetts, Missouri, New Hampshire, New Jersey, Texas, and Washington, has been formed to investigate ARS-related issues. As of 17 April 2008, Massachusetts and Missouri are the only states in the task force that have officially released the names of the firms that they are individually investigating.

Conclusion

The recent failures in the ARS market have adversely affected numerous issuers that have relied on this market in past decades. Many issuers are attempting to restructure their debt, but are paying sharply higher penalty rates in the meantime. For municipal borrowers, higher borrowing costs are ultimately paid for by taxpayers. Impacts on closed-end municipal bond funds are further explored in NERA's forthcoming paper on this topic. Meanwhile, investors holding ARS have found that what they believed was highly liquid may now be a longer-term illiquid investment. Without well-developed secondary markets, holders cannot access their principal when auctions fail. For corporate investors, a general reclassification of ARS from short-term to long-term investments may be necessary and this will impact their financial statements. In addition, auction failures could adversely affect corporate investors' liquidity and leverage ratios.

The legal and regulatory implications may also be substantial. ARS investors may claim that these securities were unsuitable given their investment objectives. Corporate investors may face scrutiny for allegedly investing in inappropriate assets that have been written down, adversely impacting earnings. As these events unfold over the coming months, all parties involved will closely watch the impact of auction failures and the associated legal and regulatory implications. We believe any analysis of auction-rate securities requires close analysis of the particular securities at issue, their individual characteristics, and their markets.

Appendix 1: **Glossary of Terms**

All-Hold Rate
The *Rate* to which an *Auction-Rate Security* resets if all *Existing Owners* choose to continue holding the securities.

Auction
The process, held at a set interval defined by the *Auction Period*, by which the *Rate* for the following *Auction Period* is determined. In an Auction, *Existing Owners* submit *Bids* to *Hold, Hold-At-Rate,* or *Sell*, and *Potential Owners* submit *Buy Bids*. From these *Bids* the *Auction Agent* determines the *Rate* that applies to the following *Auction Period*.

Auction Agent
The institution that conducts an *Auction*. The Auction Agent receives *Bids* from one or more *Broker-Dealers*, determines the *Clearing Rate*, and determines the allocation of the securities among *Broker-Dealers*.

Auction Period
The period of time from one *Auction* to the next, during which the *Rate* determined at the beginning-of-period *Auction* applies.

Auction-Rate Security (ARS)
A debt or preferred equity security for which the coupon or dividend is reset through an *Auction* at a set interval (the *Auction Period*).

Bid
An instruction by an *Existing Owner* or *Potential Owner* regarding action in an *Auction*. A Bid by an *Existing Owner* can be a *Buy Bid*, a *Sell Bid*, a *Hold Bid,* or a *Hold-At-Rate Bid*. A Bid by a *Potential Owner* can be a *Buy Bid*.

Bidder
An *Existing Owner* or *Potential Owner* that participates in an *Auction* by placing a *Bid*.

Bond Insurance
An entity that agrees to pay investors a specified amount, typically the *Face Value* of the securities, if the *Issuer* defaults. Bond Insurers receive premium payments in exchange for providing this agreement. Bond Insurance typically lowers borrowing costs for *Issuers* as it reduces the credit risk of the security to investors.

Broker-Dealer
An institution or representative of an institution that acts as an underwriter and/or *Remarketing Agent* for an *Auction-Rate Security*. The term Broker-Dealer is generally used synonymously with the term *Remarketing Agent* (as it is in this glossary and in the *SIFMA Best Practices*).

Buy Bid
A *Potential Owner's* Buy Bid includes a given rate and a quantity it will buy if the *Clearing Rate* is equal to or greater than this given rate.

Clearing Rate
The lowest *Rate* in an *Auction* at which all of the securities available for auction are purchased or held by *Existing Owners* or *Potential Owners*.

Closed-End Fund (CEF)
An investment company that issues a fixed number of shares; these shares are typically traded on an exchange. After issuance, an investor does not purchase or redeem shares directly with the fund but instead buys and sells shares of the fund on the open market. Unlike open-end mutual funds, Closed-End Funds typically use leverage to enhance returns to their common shareholders. Preferred stock is the dominant form of leverage for Closed-End Funds. Auction-rate preferred stock is one type of Closed-End Fund preferred stock.

Conduit Issuers
Sometimes *Municipalities* or government agencies issue *Auction-Rate Securities* on behalf of Conduit Issuers. The underlying borrowers may be entities such as hospitals, student loan lenders, or other entities. Sometimes several borrowers, each with relatively small borrowing needs, will issue debt together to achieve a larger issue size.

Cover Bid
A *Bid* placed by a *Broker-Dealer* in an *Auction* to purchase securities that it will hold on its own books. *Broker-Dealers* have at times placed Cover Bids to prevent *Failed Auctions*.

Dutch Auction
The type of *Auction* used for *Auction-Rate Securities.* In a Dutch Auction the price of an item is continually lowered until the item is sold. In the case of *Auction-Rate Securities*, the *Rate* is continually increased until the *Rate* is high enough to cover all securities for sale and to clear the *Auction*.

Existing Owners
Prior to and during an *Auction*, the persons who submitted winning *Bids* in the previous *Auction* and who received the *Clearing Rate* for the previous *Auction Period.*

Face Value
The *Par Value* of a bond and amount of principal that must be paid at maturity.

Failed Auction
An *Auction* in which *Existing Owners* and *Potential Owners* do not submit sufficient *Bids* below the *Maximum Rate* to purchase all securities available for *Auction*. Following a Failed Auction, all *Existing Owners* continue to hold their securities and receive interest payments based on the *Maximum Rate*.

Failure Rate
See *Maximum Rate*.

Federal Funds Rate
The Federal Funds Rate (Fed Funds) is the interest rate at which US depository institutions make overnight loans of deposits held at the Federal Reserve to other depository institutions.

Hard Put
See *Liquidity Backstop*.

Hold Bid
A *Bid* under which the *Existing Owner* will continue to hold a given quantity at any *Clearing Rate*.

Hold-at-Rate Bid
A *Bid* under which the *Existing Owner* will continue to hold a given quantity if the *Clearing Rate* is equal to or greater than the given rate, otherwise the *Existing Owner* will sell at the *Clearing Rate*.

Issuer
A borrower who obtains funds from the sale of an *Auction-Rate Security* and later makes interest payments and principal repayment in the case of debt securities, or makes dividend payments in the case of preferred equity securities.

Letter of Credit
A commitment by a bank or another third-party entity to assume responsibility for debt payments in the case of certain events set forth in the contract. For example, a Letter of Credit could specify that if an *Issuer* defaults on a loan, the Letter of Credit provider will pay the *Par Value* of the loan to investors. A Letter of Credit, like *Bond Insurance*, reduces the credit risk to investors and thus generally reduces borrowing costs for the *Issuer*.

Liquidation Preference
The *Face Value* of the note or share that the investor will receive when selling in a successful auction or after a liquidity event.

Liquidity Backstop
Also known as a *Hard Put*. A feature of a security, such as a *Tender Option Bond* or *Variable-Rate Demand Note*, which allows but does not obligate investors to sell at a specified price, usually at *Par Value*, at particular times.

Liquidity Provider
An *Issuer* or third-party entity that agrees to purchase securities at a specified price, usually at *Par Value*, at particular times.

London Interbank Offer Rate (LIBOR)
An interest rate at which banks lend to each other in the London interbank market. LIBOR exists for multiple currencies (banks may lend each other US dollars, Japanese yen, or other currencies) at different maturities such as overnight, one week, one month, and three months.

Maximum Rate
Sometimes called *Failure Rate*. The applicable *Rate* for the *Auction Period* following a *Failed Auction*, as set forth in the official bond documents or offering prospectus. This rate is sometimes a formula, such as a multiple of LIBOR. In other cases it is a fixed rate.

Monoline Insurer
An insurer that has historically written only one type of insurance: financial guarantees.

Municipality
Local governmental entities. Some municipal *Issuers* of *Auction-Rate Securities* borrow on behalf of school districts, hospitals, or other entities. See *Conduit Issuer*.

Par Value
The *Face Value* of a bond and amount of principal that must be paid at maturity.

Potential Owner
An investor who would like to own the *Auction-Rate Security* and submits a *Buy Bid* in an *Auction*.

Price Talk
A range of possible *Clearing Rates* established by the *Broker-Dealer* and communicated to *Existing Owners* and *Potential Owners* prior to an *Auction*. The *Broker-Dealer* determines the range of rates within which the *Auction* is likely, though not guaranteed, to clear. This range is based on factors such as prevailing market conditions and *Clearing Rates* from recent *Auctions* of comparable securities. According to SIFMA's *Best Practices for Broker-Dealers of Auction Rate Securities*, Price Talk should be communicated to *Existing Owners* and *Potential Owners* in a way that makes it accessible to all, such as via a website or communication by a sales representative. Additionally, SIFMA's *Best Practices* states that a *Broker-Dealer* may change this range prior to the *Auction*, but should notify all *Existing Owners* and *Potential Owners* of the change.

Rate
Determines the interest or dividend payment for an *Auction Period*. Generally expressed as an annualized number.

Remarketing Agent
A *Broker-Dealer* that solicits *Bids* for *Auction-Rate Securities* from its customers, submits *Bids* to the *Auction Agent* prior to an *Auction*, allocates securities to its own customers after receiving an allocation from the *Auction Agent* after an *Auction*, and may provide *Price Talk* to its own customers.

Sell Bid
A *Bid* under which the *Existing Owner* will sell a given quantity at any *Clearing Rate*.

Submission Deadline
The time by which *Broker-Dealers* must submit all *Bids* to the *Auction Agent*. *Broker-Dealers* may have their own, earlier submission deadline for *Existing Owners* and *Potential Owners* to submit *Bids*, or they may allow *Existing Owners* and *Potential Owners* to submit *Bids* right up to the Submission Deadline.

Tender Option Bond (TOB)
Also known as "put bonds" or "puttable securities." A type of bond that grants the holder the right to require the *Issuer* or *Liquidity Provider* to purchase the bonds at a specified price, usually at *Par Value*, at particular times. These are typically variable-rate securities and the tender option is generally available on interest rate reset dates.

Variable-Rate Demand Note (VRDN)
Also known as "Variable-Rate Demand Obligation (VRDO)" or "Variable-Rate Demand Bond (VRDB)." A type of variable-rate debt security with a *Liquidity Backstop*.

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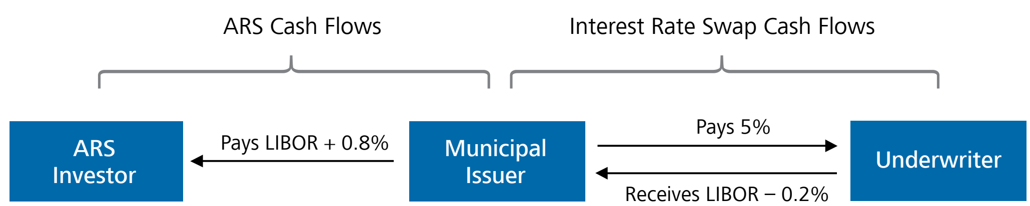
Appendix 2: **Issuer Interest Rate Swaps**

At issuance, municipal borrowers often enter into interest rate swaps with underwriters, or with another entity as their swap counterparty, effectively turning their variable-rate ARS into fixed-rate debt. At any particular time, a municipality may find available borrowing terms in variable-rate markets more advantageous than those in fixed-rate markets. At the same time, however, the municipality may prefer the predictability of fixed-rate interest payments and thus decide to use an interest rate swap as described here.

Suppose that in “normal” market conditions, i.e, typical market conditions prior to 2007, auctions for a particular issuer would clear at 80 basis points (“bps”) above three-month US dollar LIBOR. This is shown on the left side of the figure below as a payment from the municipal issuer to the ARS investor.

The issuer has also entered into an interest rate swap where it receives LIBOR minus 20 basis points and pays 5% every three months. This means that four times a year the issuer will *receive* approximately (LIBOR – 20bps) / 4 (it is divided by four because there are four three-month periods per year).[1] Also, four times a year the issuer will *pay* approximately 5% / 4. These payments, described from the perspective of the municipal issuer, are shown on the right side of the figure below as payments between the municipal issuer and the underwriter.



The issuer pays 5% on the swap and pays LIBOR + 80 basis points on the ARS, but these payments are offset by the LIBOR – 20 basis points it receives on the interest rate swap. On net, the issuer pays 6%, regardless of the prevailing LIBOR rate.

What some issuers have found, however, is that these “hedges” may not take into account the extreme market conditions recently experienced.[2] If rates on ARS rise, whether due to resetting to higher penalty rates or to simply clearing at a higher-than-expected rate, there may be a large mismatch between the rate the issuer pays on the ARS and the rate it receives on the swap. This exposure to possible widening of the spread between two interest rates is referred to as “basis risk.”

Depending on the initial structure of the swap, converting or restructuring the ARS into another type of debt may also involve unwinding the swap. This would generally involve a payment from one counterparty to the other in an amount equal to the value of the swap at the time of unwinding.

[1] Four times a year someone ascertains three-month US dollar LIBOR, on specified days, in order to determine the floating rate of the swap. Simply dividing the rate by four is an approximation because the swap would also account for details such as whether each three-month period contained the same number of days, what to do should a payment date fall on a market holiday, etc. These details would be described in the swap documentation.

[2] Craig Karmin, “Swaps Backfire As Cost Saver On Public Debt—Auction-Rate Turmoil Hits Local Governments; Jefferson County’s Woes,” *Wall Street Journal*, 22 March 2008, p. A9.

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