

PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST  
Form NSAR-B  
May 29, 2008

PAGE 1  
000 B000000 03/31/2008  
000 C000000 1258943  
000 D000000 N  
000 E000000 NF  
000 F000000 Y  
000 G000000 N  
000 H000000 N  
000 I000000 6.1  
000 J000000 A  
001 A000000 PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST  
001 B000000 811-21409  
001 C000000 6177427825  
002 A000000 60 STATE STREET  
002 B000000 BOSTON  
002 C000000 MA  
002 D010000 02109  
003 000000 N  
004 000000 N  
005 000000 N  
006 000000 N  
007 A000000 N  
007 B000000 0  
007 C010100 1  
007 C010200 2  
007 C010300 3  
007 C010400 4  
007 C010500 5  
007 C010600 6  
007 C010700 7  
007 C010800 8  
007 C010900 9  
007 C011000 10  
008 A000001 PIONEER INVESTMENT MANAGEMENT, INC.  
008 B000001 A  
008 C000001 801-8255  
008 D010001 BOSTON  
008 D020001 MA  
008 D030001 02109  
010 A000001 PIONEER INVESTMENT MANAGEMENT, INC.  
010 B000001 801-8255  
010 C010001 BOSTON  
010 C020001 MA  
010 C030001 02109  
010 A000002 PRINCETON ADMINISTRATORS, LLC  
010 C010002 PRINCETON  
010 C020002 NJ  
010 C030002 08543  
010 C040002 9095  
011 A000001 PIONEER FUNDS DISTRIBUTOR, INC.  
011 B000001 8-12345678  
011 C010001 BOSTON  
PAGE 2  
011 C020001 MA  
011 C030001 02109  
011 C040001 1820  
011 A000002 UBS INVESTMENT BANK  
011 B000002 8-022651  
011 C010002 STAMFORD

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011 C020002 CT  
011 C030002 06901  
011 A000003 RBC CAPITAL MARKETS CORP.  
011 B000003 8-045411  
011 C010003 MINNEAPOLIS  
011 C020003 MN  
011 C030003 55402  
011 C040003 4422  
011 A000004 MERRILL LYNCH & CO.  
011 B000004 8-7221  
011 C010004 NEW YORK  
011 C020004 NY  
011 C030004 10281  
011 C040004 1201  
011 A000005 JANNEY MONTGOMERY SCOTT, LLC  
011 B000005 8-462  
011 C010005 PHILADELPHIA  
011 C020005 PA  
011 C030005 19103  
011 C040005 1675  
011 A000006 WACHOVIA CAPITAL MARKETS, LLC  
011 B000006 8-99999  
011 C010006 RICHMOND  
011 C020006 VA  
011 C030006 23219  
012 A000001 PIONEER INVEST. MGMT. SHAREHOLDER SVCS., INC.  
012 B000001 85-01359  
012 C010001 BOSTON  
012 C020001 MA  
012 C030001 02109  
012 A000002 AMERICAN STOCK TRANSFER & TRUST CO.  
012 B000002 85-00000  
012 C010002 BROOKLYN  
012 C020002 NY  
012 C030002 11219  
012 A000003 DEUTSCHE BANK TRUST COMPANY AMERICAS (PREF.)  
012 B000003 85-00000  
012 C010003 NEW YORK CITY  
012 C020003 NY  
012 C030003 10005  
013 A000001 ERNST & YOUNG, LLP  
013 B010001 BOSTON  
013 B020001 MA  
013 B030001 02116  
013 B040001 5072  
PAGE 3  
015 A000001 BROWN BROTHERS HARRIMAN & CO.  
015 B000001 C  
015 C010001 BOSTON  
015 C020001 MA  
015 C030001 02109  
015 E010001 X  
018 000000 Y  
019 A000000 Y  
019 B000000 77  
019 C000000 PIONEERFDS  
020 C000001 0  
020 C000002 0  
020 C000003 0  
020 C000004 0  
020 C000005 0  
020 C000006 0

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020 C000007 0  
 020 C000008 0  
 020 C000009 0  
 020 C000010 0  
 021 000000 0  
 022 A000001 BLACKROCK INVESTMENTS, INC.  
 022 C000001 792188  
 022 D000001 0  
 022 A000002 LEHMAN BROTHERS, INC.  
 022 B000002 13-2518466  
 022 C000002 38211  
 022 D000002 28783  
 022 A000003 CORBY CAPITAL MARKETS, INC.  
 022 B000003 52-1037969  
 022 C000003 5207  
 022 D000003 7873  
 022 A000004 FIRST TRYON SECURITIES, LLC  
 022 B000004 56-1986792  
 022 C000004 0  
 022 D000004 6709  
 022 A000005 CITIGROUP GLOBAL MARKETS, INC.  
 022 B000005 11-2418191  
 022 C000005 4635  
 022 D000005 1969  
 022 A000006 B.C. ZIEGLER & CO.  
 022 B000006 39-0727640  
 022 C000006 3395  
 022 D000006 1984  
 022 A000007 MORGAN KEEGAN & CO., INC.  
 022 B000007 64-0474907  
 022 C000007 3931  
 022 D000007 0  
 022 A000008 PIPER JAFFRAY & CO.  
 022 B000008 41-0953246  
 022 C000008 3000  
 PAGE 4  
 022 D000008 0  
 022 A000009 DOUGHERTY & CO., LLC  
 022 B000009 41-1883794  
 022 C000009 2640  
 022 D000009 0  
 022 A000010 BB&T INVESTMENT SERVICES, INC.  
 022 C000010 2487  
 022 D000010 0  
 023 C000000 860636  
 023 D000000 51765  
 024 000000 N  
 026 A000000 N  
 026 B000000 Y  
 026 C000000 N  
 026 D000000 Y  
 026 E000000 N  
 026 F000000 N  
 026 G010000 N  
 026 G020000 N  
 026 H000000 N  
 027 000000 N  
 042 A000000 0  
 042 B000000 0  
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 042 D000000 0  
 042 E000000 0

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|     |         |       |
|-----|---------|-------|
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| 042 | G000000 | 0     |
| 042 | H000000 | 0     |
| 043 | 000000  | 0     |
| 044 | 000000  | 0     |
| 045 | 000000  | Y     |
| 046 | 000000  | N     |
| 047 | 000000  | Y     |
| 048 | 000000  | 0.600 |
| 048 | A010000 | 0     |
| 048 | A020000 | 0.000 |
| 048 | B010000 | 0     |
| 048 | B020000 | 0.000 |
| 048 | C010000 | 0     |
| 048 | C020000 | 0.000 |
| 048 | D010000 | 0     |
| 048 | D020000 | 0.000 |
| 048 | E010000 | 0     |
| 048 | E020000 | 0.000 |
| 048 | F010000 | 0     |
| 048 | F020000 | 0.000 |
| 048 | G010000 | 0     |
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| 048 | H010000 | 0     |
| 048 | H020000 | 0.000 |
|     | PAGE    | 5     |
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| 048 | I020000 | 0.000 |
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| 049 | 000000  | N     |
| 050 | 000000  | N     |
| 051 | 000000  | N     |
| 052 | 000000  | N     |
| 053 | A000000 | N     |
| 054 | A000000 | Y     |
| 054 | B000000 | Y     |
| 054 | C000000 | Y     |
| 054 | D000000 | N     |
| 054 | E000000 | N     |
| 054 | F000000 | N     |
| 054 | G000000 | N     |
| 054 | H000000 | Y     |
| 054 | I000000 | N     |
| 054 | J000000 | Y     |
| 054 | K000000 | N     |
| 054 | L000000 | N     |
| 054 | M000000 | Y     |
| 054 | N000000 | N     |
| 054 | O000000 | N     |
| 055 | A000000 | Y     |
| 055 | B000000 | N     |
| 056 | 000000  | Y     |
| 057 | 000000  | N     |
| 058 | A000000 | N     |
| 059 | 000000  | Y     |
| 060 | A000000 | Y     |
| 060 | B000000 | Y     |
| 061 | 000000  | 0     |
| 062 | A000000 | Y     |

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|     |         |       |
|-----|---------|-------|
| 062 | B000000 | 0.0   |
| 062 | C000000 | 0.0   |
| 062 | D000000 | 0.0   |
| 062 | E000000 | 0.0   |
| 062 | F000000 | 0.0   |
| 062 | G000000 | 0.0   |
| 062 | H000000 | 0.0   |
| 062 | I000000 | 0.0   |
| 062 | J000000 | 0.0   |
| 062 | K000000 | 0.0   |
| 062 | L000000 | 0.0   |
| 062 | M000000 | 0.0   |
| 062 | N000000 | 0.0   |
| 062 | O000000 | 146.3 |
| 062 | P000000 | 0.0   |

PAGE 6

|     |         |      |
|-----|---------|------|
| 062 | Q000000 | 0.0  |
| 062 | R000000 | 1.2  |
| 063 | A000000 | 0    |
| 063 | B000000 | 20.8 |
| 064 | A000000 | Y    |
| 064 | B000000 | Y    |
| 065 | 000000  | N    |
| 066 | A000000 | N    |
| 067 | 000000  | N    |
| 068 | A000000 | N    |
| 068 | B000000 | N    |
| 069 | 000000  | N    |
| 070 | A010000 | Y    |
| 070 | A020000 | N    |
| 070 | B010000 | N    |
| 070 | B020000 | N    |
| 070 | C010000 | Y    |
| 070 | C020000 | N    |
| 070 | D010000 | N    |
| 070 | D020000 | N    |
| 070 | E010000 | Y    |
| 070 | E020000 | N    |
| 070 | F010000 | N    |
| 070 | F020000 | N    |
| 070 | G010000 | Y    |
| 070 | G020000 | N    |
| 070 | H010000 | N    |
| 070 | H020000 | N    |
| 070 | I010000 | N    |
| 070 | I020000 | N    |
| 070 | J010000 | Y    |
| 070 | J020000 | Y    |
| 070 | K010000 | Y    |
| 070 | K020000 | Y    |
| 070 | L010000 | N    |
| 070 | L020000 | N    |
| 070 | M010000 | N    |
| 070 | M020000 | N    |
| 070 | N010000 | N    |
| 070 | N020000 | N    |
| 070 | O010000 | Y    |
| 070 | O020000 | N    |
| 070 | P010000 | Y    |
| 070 | P020000 | Y    |
| 070 | Q010000 | N    |
| 070 | Q020000 | N    |

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070 R010000 N  
070 R020000 N  
071 A000000 79416  
071 B000000 60249  
071 C000000 483413

PAGE 7

071 D000000 12  
072 A000000 12  
072 B000000 33345  
072 C000000 0  
072 D000000 0  
072 E000000 0  
072 F000000 2963  
072 G000000 432  
072 H000000 0  
072 I000000 429  
072 J000000 40  
072 K000000 0  
072 L000000 27  
072 M000000 14  
072 N000000 24  
072 O000000 0  
072 P000000 0  
072 Q000000 0  
072 R000000 56  
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072 T000000 0  
072 U000000 0  
072 V000000 0  
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072CC020000 53216  
072DD010000 20247  
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073 A020000 0.0000  
073 B000000 0.0000  
073 C000000 0.0000  
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074 C000000 0  
074 D000000 451307  
074 E000000 0  
074 F000000 730  
074 G000000 0  
074 H000000 0  
074 I000000 2989  
074 J000000 0  
074 K000000 0  
074 L000000 9408  
074 M000000 40

PAGE 8

074 N000000 464474  
074 O000000 3175  
074 P000000 268  
074 Q000000 0

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|     |         |                          |
|-----|---------|--------------------------|
| 074 | R010000 | 0                        |
| 074 | R020000 | 0                        |
| 074 | R030000 | 0                        |
| 074 | R040000 | 2470                     |
| 074 | S000000 | 150061                   |
| 074 | T000000 | 308500                   |
| 074 | U010000 | 22787                    |
| 074 | U020000 | 0                        |
| 074 | V010000 | 13.54                    |
| 074 | V020000 | 0.00                     |
| 074 | W000000 | 0.0000                   |
| 074 | X000000 | 9066                     |
| 074 | Y000000 | 0                        |
| 075 | A000000 | 0                        |
| 075 | B000000 | 354772                   |
| 076 | 000000  | 13.74                    |
| 077 | A000000 | Y                        |
| 077 | B000000 | Y                        |
| 077 | C000000 | N                        |
| 077 | D000000 | N                        |
| 077 | E000000 | N                        |
| 077 | F000000 | N                        |
| 077 | G000000 | N                        |
| 077 | H000000 | N                        |
| 077 | I000000 | N                        |
| 077 | J000000 | N                        |
| 077 | K000000 | N                        |
| 077 | L000000 | N                        |
| 077 | M000000 | N                        |
| 077 | N000000 | N                        |
| 077 | O000000 | N                        |
| 077 | P000000 | N                        |
| 077 | Q010000 | N                        |
| 077 | Q020000 | N                        |
| 077 | Q030000 | N                        |
| 078 | 000000  | N                        |
| 080 | A000000 | ICI MUTUAL INSURANCE CO. |
| 080 | C000000 | 45000                    |
| 081 | A000000 | Y                        |
| 081 | B000000 | 77                       |
| 082 | A000000 | N                        |
| 082 | B000000 | 0                        |
| 083 | A000000 | N                        |
| 083 | B000000 | 0                        |
| 084 | A000000 | N                        |
| 084 | B000000 | 0                        |
| 085 | A000000 | Y                        |
|     | PAGE    | 9                        |
| 085 | B000000 | N                        |
| 086 | A010000 | 46                       |
| 086 | A020000 | 656                      |
| 086 | B010000 | 0                        |
| 086 | B020000 | 0                        |
| 086 | C010000 | 0                        |
| 086 | C020000 | 0                        |
| 086 | D010000 | 0                        |
| 086 | D020000 | 0                        |
| 086 | E010000 | 0                        |
| 086 | E020000 | 0                        |
| 086 | F010000 | 0                        |
| 086 | F020000 | 0                        |
| 087 | A010000 | COMMON STOCK             |

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087 A020000 723762100  
087 A030000 MAV  
087 B010000 PREFERRED STOCK - SERIES A  
087 B020000 723762209  
087 C010000 PREFERRED STOCK - SERIES B  
087 C020000 723762308  
088 A000000 N  
088 B000000 N  
088 C000000 N  
088 D000000 Y  
SIGNATURE MARY KELLERMANN  
TITLE ACCOUNTING MANAGER