

PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST

Form NSAR-A

November 27, 2009

PAGE 1  
000 A000000 09/30/2009  
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  
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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  
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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 SER. 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.  
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015 E010001 X  
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020 C000002 0  
020 C000003 0  
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020 C000005 0  
020 C000006 0

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| 022 | A000002 | BARCLAYS CAPITAL, INC.           |
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| 022 | A000003 | HERBERT J. SIMS & CO., INC.      |
| 022 | B000003 | 13-5213180                       |
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| 022 | D000003 | 861                              |
| 022 | A000004 | RAYMOND JAMES & ASSOCIATES, INC. |
| 022 | B000004 | 59-1237041                       |
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| 022 | A000005 | PIPER JAFFRAY & CO.              |
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| 022 | A000006 | FIRST SOUTHWEST CO.              |
| 022 | B000006 | 75-0708002                       |
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| 026 | H000000 | N                                |
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| 046 | 000000  | N                                |
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| 048 | B010000 | 0                                |
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| 048 | C010000 | 0                                |
| 048 | C020000 | 0.000                            |

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|     |         |       |   |
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| 048 | J010000 |       | 0 |
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| 054 | D000000 | N     |   |
|     | PAGE    | 5     |   |
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| 070 | B010000 | N      |
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| 070 | F010000 | N      |
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| 070 | G010000 | Y      |
| 070 | G020000 | N      |
| 070 | H010000 | N      |
| 070 | H020000 | N      |
| 070 | I010000 | N      |
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| 072 | I000000 | 20     |

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|             |    |
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| 072 J000000 | 7  |
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| 072 N000000 | 12 |

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|             |        |
|-------------|--------|
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| 072 W000000 | 223    |
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| 072 Z000000 | 13964  |
| 072AA000000 | 0      |
| 072BB000000 | 2029   |
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| 072DD010000 | 10419  |
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| 072EE000000 | 0      |
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| 073 C000000 | 0.0000 |
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| 074 D000000 | 416463 |
| 074 E000000 | 0      |
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| 074 G000000 | 0      |
| 074 H000000 | 0      |
| 074 I000000 | 0      |
| 074 J000000 | 170    |
| 074 K000000 | 0      |
| 074 L000000 | 9564   |
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| 074 N000000 | 427995 |
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PAGE 8

|             |        |
|-------------|--------|
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076 000000 12.22  
077 A000000 N  
078 000000 N  
080 A000000 ICI MUTUAL INSURANCE CO.  
080 C000000 45000  
081 A000000 Y  
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086 D010000 0  
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086 F010000 0  
086 F020000 0  
087 A010000 COMMON STOCK  
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