

PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST
 Form 4
 September 24, 2010

FORM 4 UNITED STATES SECURITIES AND EXCHANGE COMMISSION
 Washington, D.C. 20549

OMB APPROVAL

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Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP OF SECURITIES

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934, Section 17(a) of the Public Utility Holding Company Act of 1935 or Section 30(h) of the Investment Company Act of 1940

(Print or Type Responses)

1. Name and Address of Reporting Person *
 PIONEER FUNDS DISTRIBUTOR INC

2. Issuer Name and Ticker or Trading Symbol
 PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST [MAV]

5. Relationship of Reporting Person(s) to Issuer

(Check all applicable)

___ Director ___X___ 10% Owner
 ___ Officer (give title below) ___ Other (specify below)

(Last) (First) (Middle)

3. Date of Earliest Transaction (Month/Day/Year)
 09/13/2010

60 STATE STREET
 (Street)

4. If Amendment, Date Original Filed(Month/Day/Year)

6. Individual or Joint/Group Filing(Check Applicable Line)

___X___ Form filed by One Reporting Person
 ___ Form filed by More than One Reporting Person

BOSTON, MA 02109
 (City) (State) (Zip)

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | 4. Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Ownership (Instr. 4) |
|---|--------------------------------------|--|--------------------------------|---|---|--|--|
| | | | | (A) or (D) | Price | | |
| Pioneer Municipal High Income Advantage Trust | 09/13/2010 | 09/13/2010 | S | 6,981 | D \$ 14.16 | 0 | D |

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

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number.

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned
(e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4, and 5) | 6. Date Exercisable and Expiration Date (Month/Day/Year) | 7. Title and Amount of Underlying Securities (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Nu |
|--|--|--------------------------------------|--|--------------------------------|---|--|---|--|----------------------------|
| | | | | Code | V (A) (D) | Date Exercisable | Expiration Date | Title | Amount or Number of Shares |

Reporting Owners

Reporting Owner Name / Address

Relationships

Director 10% Owner Officer Other

PIONEER FUNDS DISTRIBUTOR INC
60 STATE STREET
BOSTON, MA 02109

X

Signatures

Gerald H. Stanney, Jr. - Chief Compliance Officer

09/24/2010

__Signature of Reporting Person

Date

Explanation of Responses:

* If the form is filed by more than one reporting person, see Instruction 4(b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations. See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

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