

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

OMB Number: 3235-0287  
 Expires: January 31, 2005  
 Estimated average burden hours per response... 0.5

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)
			Code	V	Amount	(D)	Price
Pioneer Municipal High Income Advantage Trust	09/13/2010	09/13/2010	S		6,981	D	\$ 14.16
					0		

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

**Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control**

SEC 1474  
 (9-02)

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.

Potential persons who are to respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB number.