

PIONEER MUNICIPAL HIGH INCOME ADVANTAGE TRUST  
Form N-PX  
August 26, 2010

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

FORM N-PX  
ANNUAL REPORT OF PROXY VOTING RECORD OF REGISTERED  
MANAGEMENT INVESTMENT COMPANIES

Investment Company Act file number 811-21409  
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Pioneer Municipal High Income Advantage Trust  
-----  
(Exact name of registrant as specified in charter)

60 State Street Boston, MA 02109  
-----  
(Address of principal executive offices)

Terrence J. Cullen  
60 State Street  
Boston, MA 02109  
-----  
(Name and address of agent for service)

Registrant's telephone number, including area code: (617) 742-7825

Date of fiscal year end: March 31

Date of reporting period: July 1, 2009 to June 30, 2010

SIGNATURES

Pursuant to the requirements of the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

(Registrant) Pioneer Municipal High Income Advantage Trust

By (Signature and Title) /s/ John F. Cogan, Jr.  
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John F. Cogan, Jr., Chairman and President

Date August 19, 2010  
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===== PIONEER MUNI HIGH INCOME ADVANTAGE TRUST =====

DELTA AIR LINES, INC.

Ticker: DAL Security ID: 247361702  
Meeting Date: JUN 30, 2010 Meeting Type: Annual  
Record Date: MAY 3, 2010

| # | Proposal                           | Mgt Rec | Vote Cast | Sponsor    |
|---|------------------------------------|---------|-----------|------------|
| 1 | Elect Director Richard H. Anderson | For     | For       | Management |
| 2 | Elect Director Edward H. Bastian   | For     | For       | Management |

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|    |                                      |         |     |             |
|----|--------------------------------------|---------|-----|-------------|
| 3  | Elect Director Roy J. Bostock        | For     | For | Management  |
| 4  | Elect Director John S. Brinzo        | For     | For | Management  |
| 5  | Elect Director Daniel A. Carp        | For     | For | Management  |
| 6  | Elect Director John M. Engler        | For     | For | Management  |
| 7  | Elect Director Mickey P. Foret       | For     | For | Management  |
| 8  | Elect Director David R. Goode        | For     | For | Management  |
| 9  | Elect Director Paula Rosput Reynolds | For     | For | Management  |
| 10 | Elect Director Kenneth C. Rogers     | For     | For | Management  |
| 11 | Elect Director Rodney E. Slater      | For     | For | Management  |
| 12 | Elect Director Douglas M. Steenland  | For     | For | Management  |
| 13 | Elect Director Kenneth B. Woodrow    | For     | For | Management  |
| 14 | Ratify Auditors                      | For     | For | Management  |
| 15 | Provide for Cumulative Voting        | Against | For | Shareholder |

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VALLEY HEALTH SYS CALIF CTFS PARTN

Ticker: Security ID: 919675AK4  
 Meeting Date: JAN 22, 2010 Meeting Type: Written Consent  
 Record Date:

| # | Proposal | Mgt Rec | Vote Cast | Sponsor    |
|---|----------|---------|-----------|------------|
| 1 | The Plan | None    | For       | Management |

===== END NPX REPORT