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PIONEER MUNICIPAL HIGH INCOME TRUST
Form N-Q
March 30, 2012

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

FORM N-Q

CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES

Investment Company Act file number 811-21321

Pioneer Municipal High Income Trust
(Exact name of registrant as specified in charter)

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

Terrence J Cullen, Pioneer Investment Management, Inc.,
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: April 30

Date of reporting period: January 31, 2012

Form N-Q is to be used by management investment companies, other than small business investment companies registered on Form N-5 (239.24 and 274.5 of this chapter), to file reports with the Commission, not later than 60 days after close of the first and third fiscal quarters, pursuant to Rule 30b1-5 under the Investment Company Act of 1940 (17 CFR 270.30b-5). The Commission may use the information provided on Form N-Q in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-Q, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-Q unless the Form displays a currently valid Office of Management and Budget ("OMB") control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. ss. 3507.

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ITEM 1. Schedule of Investments.

Principal Amount USD \$	S&P / Moody's Ratings		Value
		TAX-EXEMPT OBLIGATIONS	
		127.0% of Net Assets	
		Alabama — 2.2%	
2,500,000	B-/B2	Alabama Industrial Development Authority Solid Waste Disposal Revenue, 6.45%, 12/1/23	\$ 2,261,250
1,000,000	NR/NR	Huntsville-Redstone Village Special Care Facilities Financing Authority, 5.5%, 1/1/28	925,950
4,500,000	NR/NR	Huntsville-Redstone Village Special Care Facilities Financing Authority, 5.5%, 1/1/43	3,565,710
			\$ 6,752,910
		Arizona — 2.4%	
5,000,000	BBB-/Baa3	Apache County Industrial Development Authority, 5.85%, 3/1/28	\$ 5,001,800
994,000	NR/Baa3	Pima County Industrial Development Authority, 6.75%, 7/1/31	994,398
950,000	NR/Baa3	Pima County Industrial Development Authority, 7.25%, 7/1/31	952,175
500,000	NR/Baa2	Yavapai County Industrial Development Authority, 6.0%, 8/1/33	508,005
			\$ 7,456,378
		California — 9.7%	
3,000,000	NR/A1	ABAG Finance Authority for Nonprofit Corp. Revenue Bonds, 5.75%, 7/1/37	\$ 3,155,250
1,000,000	NR/NR	California Enterprise Development Authority Recovery Zone Facility Revenue, 8.5%, 4/1/31	1,064,650
7,885,000(a)	AA-/NR	California State University Revenue, RIB, 11.126%, 9/20/28 (144A)	9,595,178
3,000,000	BB+/NR	California Statewide Communities Development Authority, 7.25%, 10/1/38 (144A)	3,112,410
568,006(b)	NR/NR	California Statewide Communities Development Authority Environmental Facilities Revenue, 9.0%, 12/1/38	5,504
5,150,000†	AA+/Aaa	Golden State Tobacco Securitization Corp., 7.8%, 6/1/42	5,651,713
7,000,000†	AA+/Aaa	Golden State Tobacco Securitization Corp.,	7,688,590

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7.875%, 6/1/42

			\$	30,273,295
2,000,000	BBB+/NR	Colorado — 1.0% Colorado Health Facilities Authority Revenue, 5.25%, 5/15/42	\$	1,993,820
1,000,000	NR/NR	Kremmling Memorial Hospital District, 7.125%, 12/1/45		1,055,510
			\$	3,049,330
10,335,000(a)	NR/Aaa	Connecticut — 6.0% Connecticut Health & Educational Facilities Authority Revenue, RIB, 11.885%, 8/21/35 (144A)	\$	13,715,475
1,000,000	NR/NR	Hamden Facility Revenue Bonds, Series 2009A, 7.75%, 1/1/43		1,043,060
5,000,000	CCC+/NR	Mohegan Tribe Indians Gaming Authority, 6.25%, 1/1/31		4,133,650
			\$	18,892,185
5,000,000	BBB/Baa1	District Of Columbia — 3.7% District of Columbia Tobacco Settlement Financing Corp., 6.5%, 5/15/33	\$	5,417,800
6,000,000	BBB/Baa1	District of Columbia Tobacco Settlement Financing Corp., 6.75%, 5/15/40		6,070,320
			\$	11,488,120
1,500,000	NR/NR	Florida — 7.6% Alachua County Health Facilities Authority Revenue, 8.125%, 11/15/41	\$	1,520,685
1,500,000	NR/NR	Alachua County Health Facilities Authority Revenue, 8.125%, 11/15/46		1,520,685
1,600,000	NR/NR	Beacon Lakes Community Development, 6.9%, 5/1/35		1,626,656
1,000,000	NR/Ba3	Capital Trust Agency Revenue Bonds, 7.75%, 1/1/41		1,049,710
1,000,000	NR/NR	Florida Development Finance Corp., Educational Facilities Revenue, 6.0%, 9/15/40		1,016,050
2,000,000	NR/NR	Florida Development Finance Corp., Educational Facilities Revenue, 7.625%, 6/15/41		2,095,400
1,000,000	NR/NR	Florida Development Finance Corp., Educational Facilities Revenue, 7.75%, 6/15/42		1,025,430
1,000,000†	NR/WR	Hillsborough County Industrial Development Authority Revenue, 8.0%, 8/15/32		1,457,140
2,330,000	NR/NR	Liberty County Subordinate Revenue, 8.25%, 7/1/28		2,334,707
2,500,000	A-/A2	Miami-Dade County Florida Aviation Revenue, 5.5%, 10/1/41		2,769,725
1,000,000	NR/NR	St. Johns County Industrial Development Authority Revenue, 5.25%, 1/1/26		849,060
2,000,000	NR/NR			1,526,840

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		St. Johns County Industrial Development Authority Revenue, 5.375%, 1/1/40	
5,000,000	NR/Baa1	Tallahassee Health Facilities Revenue, 6.375%, 12/1/30	5,006,600
			\$ 23,798,688
		Georgia — 2.6%	
4,240,000(a)	NR/Aa3	Atlanta Georgia Water and Wastewater Revenue, RIB, 11.126%, 1/30/13 (144A)	\$ 4,765,506
500,000	CCC+/NR	Clayton County Development Authority Revenue, 9.0%, 6/1/35	536,845
2,400,000	NR/NR	Fulton County Residential Care Facilities Revenue, 5.0%, 7/1/27	1,932,120
1,100,000	NR/NR	Fulton County Residential Care Facilities Revenue, 5.125%, 7/1/42	792,429
			\$ 8,026,900
		Idaho — 1.6%	
5,000,000	BBB+/Baa1	Power County Industrial Development Corp., 6.45%, 8/1/32	\$ 5,005,800
		Illinois — 14.4%	
1,000,000(b)	NR/NR	Illinois Finance Authority Revenue, 6.0%, 11/15/27	\$ 500,000
3,865,000	BBB+/NR	Illinois Finance Authority Revenue, 6.0%, 8/15/38	4,134,004
2,000,000	AA+/Aa2	Illinois Finance Authority Revenue, 6.0%, 8/15/39	2,300,180
4,000,000(b)	NR/NR	Illinois Finance Authority Revenue, 6.0%, 11/15/39	2,000,000
2,450,000	NR/NR	Illinois Finance Authority Revenue, 6.375%, 5/15/17	2,451,739
2,500,000	NR/Baa2	Illinois Finance Authority Revenue, 6.5%, 4/1/39	2,724,225
500,000	NR/NR	Illinois Finance Authority Revenue, 7.0%, 5/15/18	500,305
1,700,000	NR/NR	Illinois Finance Authority Revenue, 7.625%, 5/15/25	1,717,340
600,000	NR/NR	Illinois Finance Authority Revenue, 7.75%, 5/15/30	604,986
2,000,000	NR/NR	Illinois Finance Authority Revenue, 8.0%, 5/15/40	2,018,860
3,200,000	NR/NR	Illinois Finance Authority Revenue, 8.0%, 5/15/46	3,230,176
4,000,000	NR/NR	Illinois Finance Authority Revenue, 8.25%, 5/15/45	4,032,520
2,500,000	NR/NR	Illinois Finance Authority Revenue, 8.25%, 2/15/46	2,498,425
16,880,000(c)	AAA/A3	Metropolitan Pier & Exposition Authority Dedicated State Tax Revenue, 0.0%, 6/15/22	15,169,043
1,540,000	NR/NR	Southwestern Illinois Development Authority Revenue, 5.625%, 11/1/26	1,153,368
			\$ 45,035,171
		Indiana — 2.0%	
3,000,000	A+/A1	Indiana Health & Educational Facility Financing Authority Hospital Revenue, 5.0%, 2/15/39	\$ 3,058,110
3,570,000	NR/NR		3,216,641

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		Vigo County Hospital Authority Revenue, 5.8%, 9/1/47 (144A)	\$ 6,274,751
1,500,000	BBB-/Baa3	Louisiana — 2.1% Louisiana Local Government Environmental Facilities Revenue, 6.75%, 11/1/32	\$ 1,619,535
5,000,000	NR/Baa1	Louisiana Public Facilities Authority Revenue, 5.5%, 5/15/47	5,106,850
			\$ 6,726,385
1,500,000	NR/Baa3	Maine — 0.5% Maine Health & Higher Educational Facilities Authority Revenue, 7.5%, 7/1/32	\$ 1,718,115
7,100,000	A/WR	Massachusetts — 7.6% Massachusetts Development Finance Agency, 5.75%, 1/1/42	\$ 8,712,907
2,305,000	NR/NR	Massachusetts Development Finance Agency, 7.1%, 7/1/32	2,063,851
860,000	AA/NR	Massachusetts Educational Financing Authority Revenue, 6.0%, 1/1/28	993,360
1,860,000	AAA/Aaa	Massachusetts Health & Educational Facilities Authority Revenue, 5.5%, 7/1/32	2,680,613
1,000,000	NR/Caa1	Massachusetts Health & Educational Facilities Authority Revenue, 6.0%, 10/1/23	776,810
3,500,000†	NR/NR	Massachusetts Health & Educational Facilities Authority Revenue, 6.25%, 7/1/22	3,620,680
4,500,000(b)	NR/NR	Massachusetts Health & Educational Facilities Authority Revenue, 6.5%, 1/15/38	44,955
5,000,000	BB-/NR	Massachusetts Health & Educational Facilities Authority Revenue, 6.75%, 10/1/33	5,050,600
			\$ 23,943,776
935,000	NR/NR	Michigan — 3.1% Doctor Charles Drew Academy, 5.7%, 11/1/36	\$ 632,855
1,500,000	BB-/NR	John Tolfree Health System Corp., 6.0%, 9/15/23	1,320,975
2,000,000	BB+/NR	Kent Hospital Finance Authority Revenue, 6.25%, 7/1/40	2,025,260
5,830,000	B-/NR	Michigan Tobacco Settlement Finance Authority, 6.0%, 6/1/48	4,375,648
1,410,000	BBB/NR	Star International Academy Certificates of Participation, 6.125%, 3/1/37	1,360,100
			\$ 9,714,838
1,675,000	BB-/NR	Minnesota — 0.9% Duluth Economic Development Authority Health Care Facilities Revenue, 7.25%, 6/15/32	\$ 1,691,164
1,000,000	NR/NR	Port Authority of the City of Bloomington Minnesota Facility Revenue Bonds, 9.0%, 12/1/35	1,064,690
			\$ 2,755,854

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		Montana — 0.1%		
1,600,000(b)(d)	NR/NR	Two Rivers Authority, Inc., Correctional Facility Improvement Revenue, 7.375%, 11/1/27	\$	240,048
		Nebraska — 0.2%		
2,000,000(b)(d)	NR/NR	Grand Island Solid Waste Disposal Facilities Revenue, 7.0%, 6/1/23	\$	566,220
		Nevada — 0.0%*		
2,000,000(b)(d)	NR/NR	Nevada State Department of Business & Industry, 7.25%, 1/1/23	\$	2,400
		New Jersey — 7.9%		
10,000,000	B/B3	New Jersey Economic Development Authority Revenue, 6.25%, 9/15/29	\$	9,956,900
6,150,000(e)	B/B3	New Jersey Economic Development Authority Revenue, 7.0%, 11/15/30		6,150,246
8,000,000†	AA+/Aaa	Tobacco Settlement Financing Corp., 6.75%, 6/1/39		8,693,600
			\$	24,800,746
		New Mexico — 1.2%		
1,500,000	NR/NR	Otero County New Mexico Project Revenue, 6.0%, 4/1/23	\$	1,337,385
2,960,000	NR/NR	Otero County New Mexico Project Revenue, 6.0%, 4/1/28		2,451,146
			\$	3,788,531
		New York — 10.1%		
2,000,000	NR/NR	Chautauqua County Capital Resource Corp. Revenue, 8.0%, 11/15/30	\$	2,128,220
3,000,000	NR/NR	Dutchess County Industrial Development Agency Revenue, 7.5%, 3/1/29		3,034,230
2,000,000	BBB+/NR	Hempstead Local Development Corp. Revenue Bonds, 5.75%, 7/1/39		2,186,400
2,050,000	NR/NR	Nassau County New York Industrial Development Agency Revenue, 6.7%, 1/1/43		1,592,092
2,000,000	BB-/B2	New York City Industrial Development Agency, 5.25%, 12/1/32		1,616,240
2,000,000	BB-/B2	New York City Industrial Development Agency, 7.625%, 12/1/32		2,001,200
2,000,000	NR/C	New York City Industrial Development Agency, 8.0%, 8/1/12		1,843,640
1,000,000	NR/Ba1	New York State Dormitory Authority Revenue, 6.125%, 12/1/29		1,024,080
7,040,000(a)	NR/Aaa	New York State Dormitory Authority Revenue, RIB, 13.432%, 5/29/14 (144A)		10,790,771
2,750,000	BB/NR	Seneca Nation Indians Capital Improvement Authority Revenue, 5.25%, 12/1/16 (144A)		2,606,697
3,000,000	NR/NR	Suffolk County Industrial Development Agency, 7.25%, 1/1/30		2,999,580
			\$	31,823,150
		North Carolina — 2.9%		

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4,785,000	NR/NR	Charlotte North Carolina Special Facilities Revenue, 5.6%, 7/1/27	\$	4,171,228
4,795,000	NR/NR	Charlotte North Carolina Special Facilities Revenue, 7.75%, 2/1/28		4,801,665
			\$	8,972,893
		Oklahoma — 0.3%		
1,225,000(b)	NR/NR	Tulsa Municipal Airport Revenue, 6.25%, 6/1/20	\$	921,004
		Pennsylvania — 2.5%		
1,550,000	NR/Baa2	Allegheny County Hospital Development Authority Revenue, 5.125%, 5/1/25	\$	1,550,186
1,000,000	CC/NR	Columbia County Hospital Authority Health Care Revenue, 5.9%, 6/1/29		961,640
665,000	BBB+/Baa3	Hazleton Health Services Authority Hospital Revenue, 5.625%, 7/1/17		665,499
1,280,000(b)	NR/NR	Langhorne Manor Borough Higher Education & Health Authority Revenue, 7.35%, 7/1/22		371,187
5,000,000	B-/Caa2	Pennsylvania Economic Development Financing Authority Solid Waste Disposal Revenue, 6.0%, 6/1/31		3,939,500
500,000	BBB+/NR	Pennsylvania Higher Educational Facilities Authority Revenue, 5.4%, 7/15/36		508,575
			\$	7,996,587
		Rhode Island — 2.0%		
6,000,000(d)	NR/NR	Central Falls Detention Facilities Revenue, 7.25%, 7/15/35	\$	4,793,940
1,500,000	NR/NR	Rhode Island Health & Educational Building Corp Revenue, 8.375%, 1/1/46		1,547,535
			\$	6,341,475
		South Carolina — 1.3%		
3,185,000†	BBB+/Baa1	South Carolina Jobs Economic Development Authority Revenue, 6.375%, 8/1/34	\$	3,462,923
665,000†	BBB+/Baa1	South Carolina Jobs Economic Development Authority Revenue, 6.375%, 8/1/34		724,604
			\$	4,187,527
		Tennessee — 4.7%		
7,000,000†	NR/A2	Johnson City Health & Educational Facilities Board Hospital Revenue, 7.5%, 7/1/33	\$	7,373,450
2,480,000	NR/A1	Knox County Health, Educational & Housing Facilities Board Hospital Revenue, 6.375%, 4/15/22		2,536,222
4,600,000	BBB+/NR	Sullivan County Health, Educational & Housing Facilities Board Hospital Revenue, 5.25%, 9/1/36		4,691,632
			\$	14,601,304
		Texas — 14.6%		
1,345,000	NR/B3	Bexar County Housing Finance Corp., 8.0%, 12/1/36	\$	949,395

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2,500,000	BB+/Ba1	Central Texas Regional Mobility Authority Revenue, 6.75%, 1/1/41	2,620,825
4,000,000	NR/NR	Decatur Hospital Authority Revenue, 7.0%, 9/1/25	4,049,400
725,078(b)(d)	NR/NR	Gulf Coast Industrial Development Authority, 7.0%, 12/1/36	6,990
3,750,000	B-/B3	Houston Airport System Special Facilities Revenue, 5.7%, 7/15/29	3,543,975
5,340,000	NR/NR	Lubbock Health Facilities Development Corp., 6.625%, 7/1/36	5,240,249
10,000,000	BBB+/A3	North Texas Tollway Authority Revenue, 5.75%, 1/1/33	10,908,000
2,810,000(a)	NR/Aaa	Northside Independent School District, RIB, 11.669%, 6/15/12 (144A)	3,159,705
1,500,000	NR/NR	Red River Health Facilities Development Corp., Revenue, 8.0%, 11/15/41	1,536,480
2,000,000	NR/NR	Tarrant County Cultural Education Facilities Finance Corp., 8.0%, 11/15/34	2,061,880
1,000,000	NR/NR	Tarrant County Cultural Education Facilities Finance Corp., 8.125%, 11/15/39	1,023,370
1,500,000	NR/NR	Tarrant County Cultural Education Facilities Finance Corp., 8.25%, 11/15/44	1,539,000
7,040,000(a)	NR/Aaa	Texas State, RIB, 12.64%, 4/1/13 (144A)	9,292,518
			\$ 45,931,787
1,500,000	A-/Baa1	Vermont — 0.5% Vermont Educational & Health Buildings Financing Agency Revenue, 6.0%, 10/1/28	\$ 1,581,840
1,000,000	BBB/Ba1	Virginia — 0.3% Peninsula Ports Authority, 6.0%, 4/1/33	\$ 1,027,090
4,710,000	A+/A2	Washington — 9.9% Spokane Public Facilities District Hotel/Motel Tax & Sales, 5.75%, 12/1/27	\$ 5,040,454
7,025,000	BBB/Baa1	Tobacco Settlement Authority Revenue, 6.625%, 6/1/32	7,307,194
14,315,000	AA+/Aa1	Washington State General Obligation, 0.0%, 6/1/22	10,931,220
3,795,000	A/A2	Washington State Health Care Facilities Authority Revenue, 6.0%, 1/1/33	4,175,525
5,000,000	NR/NR	Washington State Housing Finance Committee Nonprofit Revenue, 5.625%, 1/1/27	3,635,400
			\$ 31,089,793
745,000	NR/NR	West Virginia — 0.3% West Virginia Hospital Finance Authority Hospital Revenue Bonds, 9.125%, 10/1/41	\$ 826,808
2,500,000	NR/NR	Wisconsin — 0.8% Wisconsin Public Finance Authority Continuing Care Retirement Community Revenue, 8.25%, 6/1/46	\$ 2,622,550
		TOTAL TAX-EXEMPT OBLIGATIONS	\$ 398,234,249

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		(Cost \$374,019,744)	
		MUNICIPAL COLLATERALIZED DEBT OBLIGATION — 2.2% OF NET ASSETS	
10,000,000(d)(e)	NR/NR	Non-Profit Preferred Funding Trust I, 6.75%, 9/15/37 (144A)	\$ 6,938,500
		TOTAL MUNICIPAL COLLATERALIZED DEBT OBLIGATION	
		(Cost \$10,000,000)	\$ 6,938,500
Shares			Value
		COMMON STOCK	
		0.8%	
		Transportation — 0.8%	
251,078(f)		Delta Air Lines, Inc.	\$ 2,648,873
		TOTAL COMMON STOCKS	
		(Cost \$6,612,756)	\$ 2,648,873
		TOTAL INVESTMENTS IN SECURITIES — 130.0%	
		(Cost \$390,632,500)(g)(h)	\$ 407,821,622
		OTHER ASSETS AND LIABILITIES — 2.2%	\$ 6,757,926
		PREFERRED SHARES AT REDEMPTION VALUE, INCLUDING DIVIDENDS PAYABLE — (32.2)%	\$(101,001,172)
		NET ASSETS APPLICABLE TO COMMON SHAREOWNERS — 100.0%	\$ 313,578,376

(144A) Security is exempt from registration under Rule 144A of the Securities Act of 1933. Such securities may be resold normally to qualified institutional buyers in a transaction exempt from registration. At January 31, 2012, the value of these securities amounted to \$67,193,401 or 21.4% of total net assets applicable to common shareowners.

NR Security not rated by S&P or Moody's

RIB Residual Interest Bonds

WR Withdrawn rating

† Prerefunded bonds have been collateralized by U.S. Treasury or U.S. Government Agency securities which are held in escrow to pay interest and principal on the tax exempt issue and to retire the bonds in full at the earliest refunding date.

* Amount rounds to less than 0.1%.

(a) The interest rate is subject to change periodically and inversely based upon prevailing market rates. The interest rate shown is the coupon rate at January 31, 2012.

(b) Security is in default and is non-income producing.

(c) Debt obligation initially issued at one coupon which converts to a higher coupon at a specific date. The rate shown is the rate at January 31, 2012.

(d) Indicates a security that has been deemed illiquid. The aggregate cost of illiquid securities is \$22,082,721. The aggregate fair value of \$12,548,098 represents 4.0% of the total net assets applicable to common shareowners.

(e) The interest rate is subject to change periodically. The interest rate shown is the coupon rate at January 31, 2012.

(f) Non-income producing.

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The concentration of investments by type of obligation/market sector is as follows:

Insured:	NATL-RE	5.1	%
	FSA	3.6	
	AMBAC	2.9	
	NATL-RE FGIC	2.7	
	PSF-GTD	0.8	
Revenue Bonds:	Medical Revenue	21.7	
	Other Revenue	13.5	
	Tobacco Revenue	11.3	
	Health Revenue	9.9	
	Development Revenue	7.3	
	Education Revenue	6.2	
	Airport Revenue	6.0	
	Facilities Revenue	3.1	
	Pollution Control Revenue	3.0	
	Transportation Revenue	2.7	
	Housing Revenue	0.2	
	Utilities Revenue**	0.0	
		100	%

Various inputs are used in determining the value of the Trust's investments.

These inputs are summarized in the three broad levels listed below.

Level 1 – quoted prices in active markets for identical securities

Level 2 – other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.)

Level 3 – significant unobservable inputs (including the Trust's own assumptions in determining fair value of investments)

Generally, equity securities are categorized as Level 1, fixed income securities and senior loans

are categorized as Level 2 and securities valued using fair value methods (other than prices supplied by independent pricing services) are categorized as Level 3.

	Level 1	Level 2	Level 3	Total
Tax exempt obligations	\$—	\$398,234,249	\$—	\$398,234,249
Municipal collateralized debt obligation	—	6,938,500	—	6,938,500

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Common stocks	2,648,873	—	—	2,648,873
Total	\$2,648,873	\$405,172,749	\$—	\$407,821,622

ITEM 2. CONTROLS AND PROCEDURES. (a) Disclose the conclusions of the registrant's principal executive officer or officers and principal financial officer or officers, or persons performing similar functions, about the effectiveness of the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Act (17 CFR 270.30a-3(c))) as of a date within 90 days of the filing date of the report that includes the disclosure required by this paragraph, based on their evaluation of these controls and procedures required by Rule 30a-3(b) under the Act (17 CFR 270.30a-3(b)) and Rule 13a-15(b) or 15d-15(b) under the Exchange Act (17 CFR 240.13a-15(b) or 240.15d-15(b)). The registrant's principal executive officer and principal financial officer have concluded that the registrant's disclosure controls and procedures are effective based on their evaluation of these controls and procedures as of a date within 90 days of the filing date of this report. (b) Disclose any change in the registrant's internal controls over financial reporting (as defined in Rule 30a-3(d) under the Act (17 CFR 270.30a-3(d))) that occurred during the registrant's last fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting. There were no significant changes in the registrant's internal control over financial reporting that occurred during the second fiscal quarter of the period covered by this report that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

ITEM 3. EXHIBITS. (a) A separate certification for each principal executive officer and principal financial officer of the registrant as required by Rule 30a-2 under the Act (17 CFR 270.30a-2). Filed herewith. <PAGE>

SIGNATURES [See General Instruction F] Pursuant to the requirements of the Securities Exchange Act of 1934 and 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 Trust By (Signature and Title)* /s/ John F. Cogan, Jr. John F. Cogan, Jr, President Date March 30, 2012 Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated. By (Signature and Title)* /s/ John F. Cogan, Jr. John F. Cogan, Jr., President Date March 30, 2012 By (Signature and Title)* /s/ Mark Bradley Mark Bradley, Treasurer Date March 30, 2012 * Print the name and title of each signing officer under his or her signature.