PIONEER MUNICIPAL HIGH INCOME TRUST
Form N-CSR
December 30, 2015

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

FORM N-CSR

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: May 1, 2015 through October 31, 2015

Form N-CSR is to be used by management investment companies to file reports with the Commission not later than 10 days after the transmission to stockholders of any report that is required to be transmitted to stockholders under Rule 30e-1 under the Investment Company Act of 1940 (17 CFR 270.30e-1). The Commission may use the information provided on Form N-CSR in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-CSR, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-CSR 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.

ITEM 1. REPORTS TO STOCKHOLDERS.

Pioneer Municipal High
Income Trust

Semiannual Report | October 31, 2015

Ticker Symbol: MHI

[LOGO] PIONEER
Investments(R)

visit us: us.pioneerinvestments.com

Table of Contents

President's Letter

Dear Shareholder,

Through the first three quarters of 2015, global markets experienced pockets of higher-than-average volatility due to significant cross-currents from different geographic regions. All year, investors focused on the Federal Reserve System's (the Fed's) deliberations over when to begin normalizing interest rates. However, while there were signs of gradual economic improvement in the U.S., economies abroad increasingly diverged. In June, for example, investors grew concerned about the debt crisis in Greece. That news, in turn, was followed by evidence of an economic slowdown in China, which only served to exacerbate existing worries about growth trends in the emerging markets, a segment of the global economy already being negatively impacted by slumping commodity prices, including the price of crude oil, which has been in near-steady decline for almost a year. Through September 30, 2015, the pockets of heightened market volatility alluded to above had resulted in the Standard & Poor's 500 Index turning in a negative (-5.27%) return over the first nine months of the year. However, the S&P 500 recovered nicely in October, returning 8.43% for the month, which boosted the index's year-to-date return into positive territory, at 2.71%.

Despite the headwinds still vexing the global economy, our longer-term view of the U.S. economy has remained positive. Economic conditions in the U.S. have generally been constructive, based largely on improvements in employment statistics and an uptick in the housing sector, which has aided the consumer side of the economy, where household spending has been rising modestly. U.S. consumers also stand to benefit, potentially, from lower energy prices as the winter weather approaches. We continue to believe the U.S. economy remains on a slow, steady growth trend, and that it is unlikely to be disrupted by a slow pace of interest-rate normalization by the Fed.

Pioneer Investments believes that investors in today's environment can potentially benefit from the consistent and disciplined investment approach we have used since our founding in 1928. We focus on identifying value across global markets using proprietary research, careful risk management, and a long-term perspective. Our ongoing goal is to produce compelling returns consistent with the stated objectives of our investment products, and with our shareowners' expectations. We believe our shareowners can benefit from the experience and tenure of our investment teams as well as the insights generated from our extensive research process.

As always, and particularly during times of market uncertainty, we encourage you to work with your financial advisor to develop an overall investment plan that addresses both your short- and long-term goals, and to implement such a plan in a disciplined manner.

We greatly appreciate your trust in us in the past and look forward to continuing to serve you in the future.

Sincerely,

/s/ Lisa M. Jones

Lisa M. Jones
President and CEO
Pioneer Investment Management USA Inc.
November 2, 2015

Any information in this shareowner report regarding market or economic trends or the factors influencing the Trust's historical or future performance are statements of opinion as of the date of this report. These statements should not be relied upon for any other purposes. Past performance is no guarantee of future results, and there is no guarantee that market forecasts discussed will be realized.

Portfolio Management Discussion | 10/31/15

Municipal bonds, both high-yield and investment-grade, generated modest results during the six-month period ended October 31, 2015. In the following interview, David Eurkus and Jonathan Chirunga discuss the factors that influenced the performance of Pioneer Municipal High Income Trust during the six-month period. Mr. Eurkus, Director of Municipals, a senior vice president and a portfolio manager at Pioneer, and Mr. Chirunga, a vice president and a portfolio manager at Pioneer, are responsible for the day-to-day management of the Trust.

Q How did Pioneer Municipal High Income Trust perform during the six-month period ended October 31, 2015?

A Pioneer Municipal High Income Trust returned 3.22% at net asset value and -7.91% at market price during the six-month period ended October 31, 2015. During the same six-month period, the Trust's benchmarks, the Barclays High Yield Municipal Bond Index and the Barclays Municipal Bond Index, returned 0.55% and 1.68% at net asset value, respectively. The Barclays High Yield Municipal Bond Index is an unmanaged measure of the performance of lower-rated municipal bonds, while the Barclays Municipal Bond Index is an unmanaged measure of the performance of investment-grade municipal bonds. Unlike the Trust, the two Barclays indices do not use leverage. While use of leverage increases investment opportunity, it also increases investment risk.

During the same six-month period, the average return (at market price) of the 11 closed end funds in Lipper's High Yield Municipal Debt Closed End Funds category (which may or may not be leveraged) was -0.64%.

The shares of the Trust were selling at a 1.1% discount to net asset value at the end of the period on October 31, 2015.

On October 31, 2015, the standardized 30-day SEC yield of the Trust's shares was 3.84%*.

Q How would you describe the investment environment in the municipal bond market during the six-month period ended October 31, 2015?

A The primary municipal market indices showed positive results over the six months, with investment-grade bonds performing somewhat better than lower-rated, higher-yielding bonds, even after a rise in longer-term interest rates late in the period. The key driver of the market during the six-month

* The 30-day SEC yield is a standardized formula that is based on the hypothetical annualized earning power (investment income only) of the Trust's portfolio securities during the period indicated.

period was the persistence of demand for municipal bonds from both traditional, tax-conscious investors as well as from non-traditional investors drawn in by the attractive relative values of municipal bonds.

The performance of lower-rated municipals trailed the return of investment-grade municipals during the period, primarily due to the negative influence that bonds issued by the Commonwealth of Puerto Rico had on the high-yield asset class. Municipals issued by Puerto Rican municipalities and institutions, which accounted for as much as 26% of the high-yield municipal market during the period, plummeted in value after Puerto Rico's governor announced in June that, within weeks, all of the Commonwealth's bonds would need to be restructured. While Puerto Rican debt did recover somewhat later in the period, the negative effects of the restructuring situation lingered and caused the high-yield municipal market to underperform the investment-grade segment. Fortunately, the Trust's portfolio had very low exposure to Puerto Rican bonds during the period (roughly 1%), and so the Trust managed to avoid most of the negative consequences the underperformance of Puerto Rican debt had on the overall market.

Q How did you manage the Trust's portfolio during the six-month period ended October 31, 2015, and which of your investment decisions had the biggest effects on the Trust's performance?

A During the six-month period, we kept the Trust's portfolio well diversified**, emphasizing investments in the hospital/health care, transportation, and education sectors as well as tobacco settlement bonds. Consistent with our long-term investment approach, we continued to emphasize holding bonds in the portfolio that are backed by specific projects (project revenue bonds). We prefer project revenue bonds to general obligation (G.O.) bonds, which are issued by state and local governments.

We believe the consistent, predictable revenue streams behind project revenue bonds are more reliable than the revenue sources backing G.O. bonds, which can at times be less predictable and reliable.

At the end of the period, on October 31, 2015, only 9.9% of the Trust's total investment portfolio was allocated to general obligation bonds.

With regard to benchmark-relative performance, overall security selection results, the Trust's significant underweight to Puerto Rico-issued bonds, and a relatively large portfolio exposure to tobacco settlement bonds all had positive effects on the Trust's relative returns.

** Diversification does not assure a profit nor protect against loss.

Some individual securities in the Trust's portfolio that had positive effects on the Trust's benchmark-relative performance during the period included: a general obligation bond issued by the State of Washington; an education bond backed by revenues at Emory University in Atlanta; and a hospital/health care bond backed by Temple Hospital in Philadelphia. On the negative side, the Trust saw disappointing performance from some portfolio holdings, including: an education bond backed by a college in Phillippi, West Virginia; a hospital/health care bond backed by Langhorne Manor, a continuing care retirement community in Pennsylvania; and a security backed by a correctional facility in Central Falls, Rhode Island.

Q Did you use any derivatives in managing the Trust's portfolio during the six-month period ended October 31, 2015? If so, did the use of derivatives affect the Trust's performance?

A No, the Trust had no exposure to derivatives during the six-month period.

Q What were the principal factors affecting the Trust's yield, or distributions to shareholders, during the six-month period ended October 31, 2015?

A The Trust's dividend*** remained stable during the six-month period. However, we continued to see bonds with higher book yields - which we had purchased opportunistically several years ago when the municipal market was struggling and yields were elevated - called away by their issuers due to the persistent low-interest-rate environment. Those bonds, in turn, were replaced in the Trust's portfolio with lower-yielding market securities. We expect this scenario to prevail for the foreseeable future, and that could have a negative effect on the Trust's distributions going forward.

It also should be noted that, primarily due to the low-interest-rate conditions detailed above, the Trust reduced its dividend earlier in the calendar year. The reduction of the dividend likely had a carryover effect on the Trust's market price during the six-month period ended October 31, 2015.

Q How did the level of leverage in the Trust change during the six-month period ended October 31, 2015?

A At the end of the six-month period on October 31, 2015, 25.1% of the Trust's total managed assets were financed by leverage (or borrowed funds), compared with 25.0% of the Trust's total managed assets financed by leverage at the start of the period on May 1, 2015. The percentage increase was due to a decrease in the value of securities in which the Trust had invested.

*** Dividends are not guaranteed.

Q What is your outlook?

A With improving employment numbers and low inflation, we believe there will be continued, modest growth in the domestic economy. Our outlook is also positive with regard to potential opportunities in the municipal bond market, especially in the high-yield segment. Municipal securities remain attractively valued compared with prices of debt instruments of comparable quality and maturity that are available in the taxable market, and we think it is realistic to expect that demand for municipals will persist, while the supply of new issues remains limited.

Please refer to the Schedule of Investments on pages 12-20 for a full listing of Trust securities.

Investments in high-yield or lower-rated securities are subject to greater-than-average risk.

The Trust may invest in securities of issuers that are in default or that are in bankruptcy.

A portion of income may be subject to state, federal, and/or alternative minimum tax. Capital gains, if any, are subject to a capital gains tax.

When interest rates rise, the prices of debt securities held by the Trust will generally fall. Conversely, when interest rates fall the prices of debt securities held by the Trust generally will rise.

By concentrating in municipal securities, the Trust is more susceptible to adverse economic, political or regulatory developments than is a portfolio that invests more broadly.

Investments in the Trust are subject to possible loss due to the financial failure of the issuers of the underlying securities and the issuers' inability to meet their debt obligations.

The Trust may invest up to 20% of its total assets in illiquid securities. Illiquid securities may be difficult to dispose of at a price reflective of their value at the times when the Trust believes it is desirable to do so, and the market price of illiquid securities is generally more volatile than that of more liquid securities. Illiquid securities are also more difficult to value and investment of the Trust's assets in illiquid securities may restrict the Trust's ability to take advantage of market opportunities.

The Trust uses leverage through the issuance of preferred shares. Leverage creates significant risks, including the risk that the Trust's incremental income or capital appreciation for investments purchased with the proceeds of leverage will not be sufficient to cover the cost of the leverage, which may adversely affect the return for the holders of common shares. Since February of 2008, regularly scheduled auctions for the Trust's preferred shares have failed and preferred shareowners have not been able to sell their shares at auction. The Board of Trustees of the Trust has considered, and continues to consider, this issue.

The Trust is required to maintain certain regulatory, rating agency and other asset coverage requirements in connection with its outstanding preferred shares. In order to maintain required asset coverage levels, the Trust may be required to alter the composition of its investment portfolio or take other actions, such as redeeming preferred shares with the proceeds from portfolio transactions, at what might be inopportune times in the market. Such actions could reduce the net earnings or returns to holders of the Trust's common shares over time, which is likely to result in a decrease in the market value of the Trust's shares.

Risks of investing in the Trust are discussed in greater detail in the Trust's original offering prospectus and in shareowner reports issued from time to time.

These risks may increase share price volatility.

Any information in this shareholder report regarding market or economic trends or the factors influencing the Fund's historical or future performance are statements of opinion as of the date of this report. These statements should not be relied upon for any other purposes. Past performance is no guarantee of future results, and there is no guarantee that market forecasts discussed will be realized.

Portfolio Summary | 10/31/15

Portfolio Diversification

(As a percentage of total investment portfolio)

[THE FOLLOWING DATA WAS REPRESENTED AS A PIE CHART IN THE PRINTED MATERIAL]

Insured	14.5%
Revenue Bonds:	
Other Revenue	25.7%
Health Revenue	12.4%
Facilities Revenue	11.3%
Development Revenue	10.3%

Education Revenue	9.4%
Tobacco Revenue	8.8%
Transportation Revenue	2.9%
Airport Revenue	2.1%
Water Revenue	1.4%
Pollution Control Revenue	1.2%

10 Largest Holdings

(As a percentage of long-term holdings)*

1.	Metropolitan Pier & Exposition Authority, McCormick Place, Series B, 6/15/22	4.38%
2.	State of Washington, Motor Vehicle Sales Tax, Series C, 6/1/22	3.30
3.	Lehman Municipal Trust Receipts, RIB, 14.101%, 8/21/35	2.93
4.	North Texas Tollway Authority, Series F, 5.75%, 1/1/33	2.92
5.	Lehman Municipal Trust Receipts, RIB, 13.235%, 9/20/28 (144A)	2.62
6.	Massachusetts Development Finance Agency, WGBH Foundation, Series A, 5.75%, 1/1/42	2.28
7.	New York State Dormitory Authority, Series C, 5.0%, 3/15/39	2.23
8.	New York State Dormitory Authority, RIB, 16.07%, 5/29/14 (144A)	2.06
9.	Public Finance Authority, Glenridge Palmer Ranch, Series A, 8.25%, 6/1/46	1.63
10.	District of Columbia Tobacco Settlement Financing Corp., Asset-Backed, 6.5%, 5/15/33	1.63

* This list excludes temporary cash investments and derivative instruments. The portfolio is actively managed, and current holdings may be different. The holdings listed should not be considered recommendations to buy or sell any security listed.

Prices and Distributions | 10/31/15

Market Value per Common Share

	10/31/15	4/30/15
Market Value	$13.14	$14.75
(Discount)/Premium	(1.1)%	10.8%

Net Asset Value per Common Share

	10/31/15	4/30/15
Net Asset Value	$13.29	$13.31

Distributions per Common Share

	Dividends	Short-Term Capital Gains	Long-Term Capital Gains
5/1/15 - 10/31/15	$0.42	$ --	$ --

The data shown above represents past performance, which is no guarantee of future results.

Performance Update | 10/31/15

Investment Returns

The mountain chart on the right shows the change in market value, including reinvestment of dividends and distributions, of a $10,000 investment made in common shares of Pioneer Municipal High Income Trust during the periods shown, compared to that of the Barclays Municipal Bond Index and Barclays High Yield Municipal Bond Index.

Average Annual Total Returns
(As of October 31, 2015)

Period	Net Asset Value (NAV)	Market Price	Barclays Municipal Bond Index (NAV)	Barclays High Yield Municipal Bond Index (NAV)
10 Years	6.38%	6.58%	4.74%	4.97%
5 Years	6.64	5.19	4.28	6.08
1 Year	5.59	-7.64	2.87	2.85

[THE FOLLOWING DATA WAS REPRESENTED AS A MOUNTAIN CHART IN THE PRINTED MATERIAL]

Value of $10,000 Investment

	Pioneer Municipal High Income Trust	Barclays High Yield Municipal Bond Index	Barclays Municipal Bond Index
10/05	$10,000	$10,000	$10,000
10/06	$10,648	$11,187	$10,575
10/07	$11,357	$11,440	$10,882
10/08	$ 7,872	$ 9,275	$10,523
10/09	$11,895	$10,623	$11,954
10/10	$14,687	$12,096	$12,884
10/11	$15,134	$12,502	$13,371
10/12	$18,346	$14,619	$14,578
10/13	$17,721	$14,251	$14,328
10/14	$20,483	$15,796	$15,448
10/15	$18,918	$16,246	$15,891

Call 1-800-225-6292 or visit us.pioneerinvestments.com for the most recent month-end performance results. Current performance may be lower or higher than the performance data quoted.

Performance data shown represents past performance. Past performance is no guarantee of future results. Investment return and market price will fluctuate, and your shares may trade below NAV due to such factors as interest rate changes and the perceived credit quality of borrowers.

Total investment return does not reflect broker sales charges or commissions. All performance is for common shares of the Trust.

Shares of closed-end funds, unlike open-end funds, are not continuously offered. There is a one-time public offering and, once issued, shares of closed-end funds are bought and sold in the open market through a stock exchange and frequently trade at prices lower than their NAV. NAV per common share is total assets less total liabilities, which include preferred shares or borrowings, as applicable, divided by the number of common shares outstanding.

When NAV is lower than market price, dividends are assumed to be reinvested at the greater of NAV or 95% of the market price. When NAV is higher, dividends are assumed to be reinvested at prices obtained through open-market purchases under the Trust's dividend reinvestment plan.

The performance table and graph do not reflect the deduction of fees and taxes that a shareowner would pay on Trust distributions or the sale of Trust shares. Had these fees and taxes been reflected, performance would have been lower.

The Barclays Municipal Bond Index is an unmanaged, broad measure of the municipal bond market. The Barclays High Yield Municipal Bond Index is unmanaged, totals over $26 billion in market value and maintains over 1,300 securities. Municipal bonds in this index have the following requirements: maturities of one year or greater, sub investment grade (below Baa or non-rated), fixed coupon rate, issued after 12/31/90, deal size over $20 million, and maturity size of at least $3 million. Index returns are calculated monthly, assume reinvestment of dividends and, unlike Trust returns, do not reflect any fees, expenses or sales charges. The indices do not use leverage. It is not possible to invest directly in the indices.

Schedule of Investments | 10/31/15 (unaudited)

Principal Amount USD ($)		Value
	TAX EXEMPT OBLIGATIONS -- 125.3% of Net Assets (a)	
	Alabama -- 1.5%	
4,500,000	Huntsville-Redstone Village Special Care Facilities Financing Authority, Redstone Village Project, 5.5%, 1/1/43	$ 4,509,225
	Arizona -- 0.0%+	
24,000	County of Pima, AZ, Industrial Development Authority, Arizona Charter Schools Project, Series C, 6.75%, 7/1/31	$ 24,043
	California -- 10.5%	
10,000,000(b)	California County Tobacco Securitization Agency, Capital Appreciation, Stanislaus County, Subordinated, Series A, 6/1/46	$ 1,122,400
1,450,000	California Enterprise Development Authority, Sunpower Corp., 8.5%, 4/1/31	1,653,493
750,000	California Municipal Finance Authority, Santa Rosa Academy Project, Series A, 5.75%, 7/1/30	794,587
5,000,000	California Pollution Control Financing Authority, 5.0%, 7/1/37 (144A)	5,140,000
1,740,000	California School Finance Authority, Classical Academies Project, Series A, 7.375%, 10/1/43	2,054,366
1,400,000	California Statewide Communities Development Authority, Lancer Plaza Project, 5.625%, 11/1/33	1,419,334
568,006(c)	California Statewide Communities Development Authority, Microgy Holdings Project, 9.0%, 12/1/38	6
25,000,000(b)	Inland Empire Tobacco Securitization Authority, Capital Appreciation, Asset-Backed, Series C-2, 6/1/47	2,023,500
7,885,000(d)	Lehman Municipal Trust Receipts, RIB, 13.235%, 9/20/28 (144A)	9,949,056
2,000,000(e)	Los Angeles Community College District, Series G, 4.0%, 8/1/39	2,071,700
1,000,000	River Islands Public Financing Authority, Community Facilities, 5.5%, 9/1/45	1,035,290
2,000,000	Tobacco Securitization Authority of Northern California, Asset-Backed, Series A-1, 5.375%, 6/1/38	1,769,800
3,000,000	Tobacco Securitization Authority of Southern California, Series A-1, 5.0%, 6/1/37	2,696,280
		$ 31,729,812
	Colorado -- 1.5%	
1,500,000	Colorado Educational & Cultural Facilities Authority, Rocky Mountain Classical Academy Project, 8.0%, 9/1/43	$ 1,583,535
2,000,000	Colorado Health Facilities Authority, Valley View Association Project, 5.25%, 5/15/42	2,091,020
1,000,000	Kremmling Memorial Hospital District, Certificate of Participation, 7.125%, 12/1/45	999,970

		$ 4,674,525

The accompanying notes are an integral part of these financial statements.

Principal Amount USD ($)		Value
	Connecticut -- 7.4%	
10,335,000(d)	Lehman Municipal Trust Receipts, RIB, 14.101%, 8/21/35 $	11,118,806
5,000,000	Mohegan Tribe of Indians Gaming Authority, 6.25%, 1/1/31	4,988,800
5,000,000(e)	State of Connecticut, Series E, 4.0%, 9/1/30	5,301,650
1,000,000	Town of Hamden, CT, Whitney Center Project, Series A, 7.75%, 1/1/43	1,042,660
		$ 22,451,916
	District of Columbia -- 4.0%	
5,000,000	District of Columbia Tobacco Settlement Financing Corp., Asset-Backed, 6.5%, 5/15/33	$ 6,165,300
6,000,000	District of Columbia Tobacco Settlement Financing Corp., Asset-Backed, 6.75%, 5/15/40	6,000,300
		$ 12,165,600
	Florida -- 4.8%	
1,500,000	Alachua County Health Facilities Authority, Terraces Bonita Springs Project, Series A, 8.125%, 11/15/41	$ 1,772,205
1,500,000	Alachua County Health Facilities Authority, Terraces Bonita Springs Project, Series A, 8.125%, 11/15/46	1,768,560
500,000	Capital Trust Agency, Inc., Million Air One LLC, 7.75%, 1/1/41	474,330
2,260,000(c)	County of Liberty, FL, Twin Oaks Project, 8.25%, 7/1/28	337,056
2,500,000	County of Miami-Dade, FL, Aviation Revenue, Series B, 5.5%, 10/1/41	2,812,650
5,000,000	Florida's Turnpike Enterprise, Department of Transportation, Series A, 4.0%, 7/1/34	5,219,600
1,000,000(f)	Hillsborough County Industrial Development Authority, Various Health Facilities, 8.0%, 8/15/32	1,265,570
2,250,000(d)	St. Johns County Industrial Development Authority, Glenmoor Project, Series A, 1.344%, 1/1/49	779,198
832,581(c)	St. Johns County Industrial Development Authority, Glenmoor Project, Series B, 2.5%, 1/1/49	8
		$ 14,429,177
	Georgia -- 2.5%	
2,500,000	Clayton County Development Authority, Delta Air Lines, Series A, 8.75%, 6/1/29	$ 3,058,650
4,000,000	Private Colleges & Universities Authority, Emory University, Series A, 5.0%, 10/1/43	4,545,000
		$ 7,603,650

	Idaho -- 1.6%	
5,000,000	Power County Industrial Development Corp., FMC Corp. Project, 6.45%, 8/1/32	$ 5,009,550

The accompanying notes are an integral part of these financial statements.

Schedule of Investments | 10/31/15 (unaudited) (continued)

Principal Amount USD ($)		Value
	Illinois -- 14.5%	
240,000	Illinois Finance Authority, Clare Oaks Project, Series A-3, 7.0%, 11/15/17	$ 240,084
2,087,000(d)	Illinois Finance Authority, Clare Oaks Project, Series B, 4.0%, 11/15/52	1,333,948
1,305,000(b)	Illinois Finance Authority, Clare Oaks Project, Series C-1, 11/15/52	46,967
261,000(b)	Illinois Finance Authority, Clare Oaks Project, Series C-2, 11/15/52	71,250
261,000(b)	Illinois Finance Authority, Clare Oaks Project, Series C-3, 11/15/52	44,858
2,000,000	Illinois Finance Authority, Greenfields of Geneva Project, Series A, 8.125%, 2/15/40	2,114,360
2,500,000	Illinois Finance Authority, Greenfields of Geneva Project, Series A, 8.25%, 2/15/46	2,648,750
2,000,000	Illinois Finance Authority, Northwestern Memorial Hospital, Series A, 6.0%, 8/15/39	2,303,300
2,500,000	Illinois Finance Authority, Roosevelt University Project, 6.5%, 4/1/39	2,710,400
3,865,000	Illinois Finance Authority, Swedish Covenant, Series A, 6.0%, 8/15/38	4,279,174
1,700,000	Illinois Finance Authority, The Admiral at the Lake Project, Series A, 7.625%, 5/15/25	1,924,927
600,000	Illinois Finance Authority, The Admiral at the Lake Project, Series A, 7.75%, 5/15/30	682,440
2,000,000	Illinois Finance Authority, The Admiral at the Lake Project, Series A, 8.0%, 5/15/40	2,286,360
3,200,000	Illinois Finance Authority, The Admiral at the Lake Project, Series A, 8.0%, 5/15/46	3,654,496
1,485,000(b)(g)	Metropolitan Pier & Exposition Authority, McCormick Place, Series B, 6/15/22	1,680,916
15,395,000(b)	Metropolitan Pier & Exposition Authority, McCormick Place, Series B, 6/15/22	16,616,439
1,140,000	Southwestern Illinois Development Authority, Village of Sauget Project, 5.625%, 11/1/26	1,051,582
		$ 43,690,251
	Indiana -- 1.8%	
250,000	City of Carmel, IN, Barrington Carmel Project, Series A,	

	7.0%, 11/15/32	$ 279,365
750,000	City of Carmel, IN, Barrington Carmel Project, Series A, 7.125%, 11/15/42	838,882
500,000	City of Carmel, IN, Barrington Carmel Project, Series A, 7.125%, 11/15/47	557,690
3,570,000	Vigo County Hospital Authority, Union Hospital, Inc., 5.8%, 9/1/47 (144A)	3,691,880
		$ 5,367,817

The accompanying notes are an integral part of these financial statements.

Principal Amount USD ($)		Value
	Kentucky -- 1.9%	
5,000,000	Kentucky Economic Development Finance Authority, Owensboro Medical Health System, Series A, 6.375%, 6/1/40	$ 5,720,150
	Louisiana -- 3.1%	
2,260,000	Jefferson Parish Hospital Service District No. 2, East Jefferson General Hospital, 6.375%, 7/1/41	$ 2,554,908
1,500,000	Louisiana Local Government Environmental Facilities & Community Development Authority, Westlake Chemical Corp. Project, 6.75%, 11/1/32	1,626,240
1,380,000(f)	Louisiana Public Facilities Authority, Ochsner Clinic Foundation Project, Series A, 5.5%, 5/15/47	1,484,866
3,620,000	Louisiana Public Facilities Authority, Ochsner Clinic Foundation Project, Series A, 5.5%, 5/15/47	3,791,805
		$ 9,457,819
	Maine -- 2.3%	
1,500,000	Maine Health & Higher Educational Facilities Authority, Maine General Medical Center, 7.5%, 7/1/32	$ 1,793,235
4,480,000	Maine Turnpike Authority, Series A, 5.0%, 7/1/42	5,051,424
		$ 6,844,659
	Maryland -- 0.5%	
1,490,000	Maryland Health & Higher Educational Facilities Authority, City Neighbors, Series A, 6.75%, 7/1/44	$ 1,611,405
	Massachusetts -- 3.3%	
987,910	Massachusetts Development Finance Agency, Linden Ponds, Inc., Series A-1, 5.5%, 11/15/46	$ 841,729
7,100,000	Massachusetts Development Finance Agency, WGBH Foundation, Series A, 5.75%, 1/1/42	8,644,250
525,000	Massachusetts Educational Financing Authority, Series I, 6.0%, 1/1/28	557,282
4,500,000(c)	Massachusetts Health & Educational Facilities Authority,	

	Quincy Medical Center, Series A, 6.5%, 1/15/38	11,025
		$ 10,054,286
	Michigan -- 3.5%	
895,000(c)	Doctor Charles Drew Academy, Certificate of Participation, 5.7%, 11/1/36	$ 178,875
2,000,000	Kent Hospital Finance Authority, Metropolitan Hospital Project, Series A, 6.25%, 7/1/40	2,001,280
2,640,000	Michigan State University, Series A, 5.0%, 8/15/41	2,963,373
6,100,000	Michigan Tobacco Settlement Finance Authority, Series A, 6.0%, 6/1/48	5,412,591
		$ 10,556,119

The accompanying notes are an integral part of these financial statements.

Schedule of Investments | 10/31/15 (unaudited) (continued)

Principal Amount USD ($)		Value
	Minnesota -- 0.7%	
2,000,000	Bloomington Port Authority, Radisson Blu Mall of America, 9.0%, 12/1/35	$ 2,288,560
	Montana -- 0.1%	
1,600,000(c)	Two Rivers Authority, Inc., 7.375%, 11/1/27	$ 230,784
	New Jersey -- 2.0%	
3,000,000	New Jersey Economic Development Authority, Continental Airlines, 5.25%, 9/15/29	$ 3,261,060
2,500,000	New Jersey Economic Development Authority, Continental Airlines, 5.75%, 9/15/27	2,698,225
		$ 5,959,285
	New Mexico -- 1.5%	
1,500,000	County of Otero, NM, Otero County Jail Project, 6.0%, 4/1/23	$ 1,499,115
2,960,000	County of Otero, NM, Otero County Jail Project, 6.0%, 4/1/28	2,942,684
		$ 4,441,799
	New York -- 10.1%	
2,000,000	Chautauqua County Capital Resource Corp., Women's Christian Association Project, Series A, 8.0%, 11/15/30	$ 2,058,860
2,000,000	Hempstead Local Development Corp., Molloy College Project, 5.75%, 7/1/39	2,229,100
2,000,000	New York City Industrial Development Agency, British Airways Plc Project, 5.25%, 12/1/32	2,005,340

2,000,000	New York City Industrial Development Agency, British Airways Plc Project, 7.625%, 12/1/32	2,027,340
1,000,000	New York State Dormitory Authority, Orange Medical Center, 6.125%, 12/1/29	1,092,200
7,040,000(d)	New York State Dormitory Authority, RIB, 16.07%, 5/29/14 (144A)	7,804,473
7,500,000	New York State Dormitory Authority, Series C, 5.0%, 3/15/39	8,467,050
1,500,000	New York State Dormitory Authority, Trustees of Columbia University, 5.0%, 10/1/45	1,985,910
2,538,540	Westchester County Healthcare Corp., Series A, 5.0%, 11/1/44	2,790,135
		$ 30,460,408
	North Dakota -- 1.0%	
2,525,000(f)	County of Burleigh, ND, St. Alexius Medical Center, 5.0%, 7/1/38	$ 3,044,771
	Ohio -- 4.4%	
2,500,000	Buckeye Tobacco Settlement Financing Authority, Asset-Backed, Series A-2, 5.875%, 6/1/47	$ 2,146,850
1,700,000	Buckeye Tobacco Settlement Financing Authority, Asset-Backed, Series A-2, 6.0%, 6/1/42	1,479,510

The accompanying notes are an integral part of these financial statements.

Principal Amount USD ($)		Value
	Ohio -- (continued)	
5,000,000	Buckeye Tobacco Settlement Financing Authority, Asset-Backed, Series A-2, 6.5%, 6/1/47	$ 4,638,450
2,000,000(d)	Ohio Air Quality Development Authority, FirstEnergy Generation Corp. Project, 3.1%, 3/1/23	2,006,880
2,500,000(e)	State of Ohio, Common Schools, Series B, 5.0%, 6/15/29	2,938,025
		$ 13,209,715
	Oregon -- 1.9%	
5,190,000	Oregon Health & Science University, Series E, 5.0%, 7/1/32	$ 5,836,363
	Pennsylvania -- 6.2%	
1,550,000	Allegheny County Hospital Development Authority, South Hills Health, Series A, 5.125%, 5/1/25	$ 1,559,812
1,280,000(c)	Langhorne Manor Borough Higher Education Authority, Lower Bucks Hospital, 7.35%, 7/1/22	243,059
5,000,000	Pennsylvania Economic Development Financing Authority, USG Corp. Project, 6.0%, 6/1/31	4,999,850
500,000	Philadelphia Authority for Industrial Development, Greater Philadelphia Health Action, Inc., Project, Series A, 6.625%, 6/1/50	496,935

2,000,000	Philadelphia Authority for Industrial Development, Nueva Esperanze, Inc., 8.2%, 12/1/43		2,205,580
1,000,000	Philadelphia Authority for Industrial Development, Performing Arts Charter School Project, 6.5%, 6/15/33 (144A)		1,046,490
2,000,000	Philadelphia Authority for Industrial Development, Performing Arts Charter School Project, 6.75%, 6/15/43 (144A)		2,101,540
5,900,000	Philadelphia Hospitals & Higher Education Facilities Authority, Temple University Health System, Series A, 5.0%, 7/1/34		5,984,488
		$	18,637,754
	Puerto Rico -- 1.0%		
4,255,000(e)	Commonwealth of Puerto Rico, Series A, 8.0%, 7/1/35	$	3,106,108
	Rhode Island -- 1.1%		
5,900,000(c)	Central Falls Detention Facility Corp., 7.25%, 7/15/35	$	1,466,858
1,500,000	Rhode Island Health & Educational Building Corp., Tockwatten Home Issue, 8.375%, 1/1/46		1,773,630
		$	3,240,488
	Tennessee -- 1.6%		
4,600,000	Sullivan County Health, Educational & Housing Facilities Board, Wellmont Health System Project, Series C, 5.25%, 9/1/36	$	4,735,654

The accompanying notes are an integral part of these financial statements.

Schedule of Investments | 10/31/15 (unaudited) (continued)

Principal Amount USD ($)			Value
	Texas -- 15.3%		
1,000,000	Arlington Higher Education Finance Corp., Universal Academy, Series A, 7.0%, 3/1/34	$	1,056,680
2,500,000	Central Texas Regional Mobility Authority, Sub Lien, 6.75%, 1/1/41		2,984,025
2,490,000(e)	County of Harris, TX, Series A, 5.0%, 10/1/26		3,057,819
5,000,000(e)	Goose Creek Consolidated Independent School District, Series C, 4.0%, 2/15/26		5,586,700
725,078(c)	Gulf Coast Industrial Development Authority, Microgy Holdings Project, 7.0%, 12/1/36		7
5,340,000	Lubbock Health Facilities Development Corp., Carillon Project, Series A, 6.625%, 7/1/36		5,448,776
3,785,000	North Texas Tollway Authority, Series A, 5.0%, 1/1/35		4,220,578
10,000,000(f)	North Texas Tollway Authority, Series F, 5.75%, 1/1/33		11,067,000
1,500,000	Red River Health Facilities Development Corp., MRC Crestview, Series A, 8.0%, 11/15/41		1,746,555

3,960,000	Sanger Industrial Development Corp., Texas Pellets Project, Series B, 8.0%, 7/1/38	4,253,357
1,000,000	Tarrant County Cultural Education Facilities Finance Corp., Mirador Project, Series A, 8.125%, 11/15/39	850,000
1,000,000	Tarrant County Cultural Education Facilities Finance Corp., Mirador Project, Series A, 8.25%, 11/15/44	850,010
2,000,000	Tarrant County Cultural Education Facilities Finance Corp., MRC Crestview Project, 8.0%, 11/15/34	2,297,020
2,500,000	Travis County Health Facilities Development Corp., Longhorn Village Project, 7.125%, 1/1/46	2,785,450
		$ 46,203,977
	Virginia -- 1.4%	
4,000,000	Upper Occoquan Sewage Authority, 4.0%, 7/1/41	$ 4,172,720
	Washington -- 8.7%	
14,315,000(b)(e)	State of Washington, Motor Vehicle Sales Tax, Series C, 6/1/22	$ 12,507,731
2,500,000	University of Washington, Series B, 5.0%, 6/1/29	2,996,750
3,795,000(f)	Washington State Health Care Facilities Authority, Fred Hutchinson Cancer Research Center, Series A, 6.0%, 1/1/33	4,467,892
1,150,000	Washington State Housing Finance Commission, Mirabella Project, Series A, 6.75%, 10/1/47	1,244,829
5,000,000	Washington State Housing Finance Commission, Skyline at First Hill Project, Series A, 5.625%, 1/1/27	5,020,050
		$ 26,237,252

The accompanying notes are an integral part of these financial statements.

Principal Amount USD ($)		Value
	West Virginia -- 0.6%	
2,000,000(c)	City of Philippi, WV, Alderson-Broaddus College, Inc., Series A, 7.75%, 10/1/44	$ 1,199,960
725,000	West Virginia Hospital Finance Authority, Highland Hospital Group, 9.125%, 10/1/41	780,622
		$ 1,980,582
	Wisconsin -- 3.0%	
5,000,000	Public Finance Authority, Glenridge Palmer Ranch, Series A, 8.25%, 6/1/46	$ 6,193,150
750,000	Public Finance Authority, Roseman University Health Sciences Project, 5.875%, 4/1/45	769,313
1,500,000	Public Finance Authority, SearStone CCRC Project, Series A, 8.625%, 6/1/47	1,783,305
230,000	Public Finance Authority, SearStone CCRC Project, Series B, 8.375%, 6/1/20	230,761

		$ 8,976,529
	TOTAL TAX EXEMPT OBLIGATIONS (Cost $353,665,851)	$ 378,662,753
	MUNICIPAL COLLATERALIZED DEBT OBLIGATION -- 0.2% of Net Assets	
10,000,000(d)	Non-Profit Preferred Funding Trust I, Series E, 0.0%, 9/15/37 (144A)	$ 632,800
	TOTAL MUNICIPAL COLLATERALIZED DEBT OBLIGATION (Cost $10,000,000)	$ 632,800
	TOTAL INVESTMENTS IN SECURITIES -- 125.5% (Cost -- $363,665,851) (h)	$ 379,295,553
	OTHER ASSETS AND LIABILITIES -- 7.9%	$ 23,830,277
	PREFERRED SHARES AT REDEMPTION VALUE, INCLUDING DIVIDENDS PAYABLE -- (33.4)%	$ (101,001,423)
	NET ASSETS APPLICABLE TO COMMON SHAREOWNERS -- 100.0%	$ 302,124,407

+ Amount rounds to less than 0.1%.

(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 October 31, 2015, the value of these securities amounted to $30,366,240, or 10.1% of total net assets applicable to common shareowners.

RIB Residual Interest Bond. The interest rate is subject to change periodically and inversely based upon prevailing market rates. The interest rate shown is the rate at October 31, 2015.

(a) Consists of Revenue Bonds unless otherwise indicated.

(b) Security issued with a zero coupon. Income is recognized through accretion of discount.

(c) Security is in default.

The accompanying notes are an integral part of these financial statements.

(d) The interest rate is subject to change periodically. The interest rate shown is the rate at October 31, 2015.

(e) Represents a General Obligation Bond.

(f) 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.

(g) Escrow to maturity.

(h) At October 31, 2015, the net unrealized appreciation on investments based on cost for federal tax purposes of $358,178,311 was as follows:

Aggregate gross unrealized appreciation for all investments in which there is an excess of value over tax cost	$ 40,303,532
Aggregate gross unrealized depreciation for all investments in which there is an excess of tax cost over value	(19,186,290)
Net unrealized appreciation	$ 21,117,242

For financial reporting purposes net unrealized appreciation on investments was $15,629,702 and cost of investments aggregated $363,665,851.

Purchases and sales of securities (excluding temporary cash investments) for the six months ended October 31, 2015 aggregated $14,954,788 and $23,634,907, respectively.

Various inputs are used in determining the value of the Trust's investments. These inputs are summarized in the three broad levels 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 risks, etc.). See Notes to Financial Statements -- Note 1A.

Level 3 -- significant unobservable inputs (including the Trust's own assumptions in determining fair value of investments). See Notes to Financial Statements -- Note 1A.

The following is a summary of the inputs used as of October 31, 2015, in valuing the Trust's investments.

	Level 1	Level 2	Level 3	Total
Tax Exempt Obligations	$ --	$378,662,753	$ --	$378,662,753
Municipal Collateralized Debt Obligation	--	632,800	--	632,800
Total Investments in Securities	$ --	$379,295,553	$ --	$379,295,553

The accompanying notes are an integral part of these financial statements.

Statement of Assets and Liabilities | 10/31/15 (unaudited)

ASSETS:	
Investments in securities, at value (cost $363,665,851)	$ 379,295,553
Cash	20,000,702
Receivables --	
Interest receivable	7,192,335
Investment securities sold	131,090
Prepaid expenses	5,286
Total assets	$ 406,624,966
LIABILITIES:	
Payables --	
Investment securities purchased	$ 3,081,898
Trustees' fees payable	1,347
Due to affiliates	203,447
Administration fee payable	107,928
Accrued expenses	104,516
Total liabilities	$ 3,499,136
PREFERRED SHARES AT REDEMPTION VALUE:	
$25,000 liquidation value per share applicable to 4,040 shares, including dividends payable of $1,423	$ 101,001,423
NET ASSETS APPLICABLE TO COMMON SHAREOWNERS:	
Paid-in capital	$ 314,119,662
Undistributed net investment income	3,688,522
Accumulated net realized loss on investments	(31,313,479)
Net unrealized appreciation on investments	15,629,702
Net assets applicable to common shareowners	$ 302,124,407
NET ASSET VALUE PER COMMON SHARE:	
No par value (unlimited number of shares authorized)	
Based on $302,124,407 / 22,738,580 common shares	$ 13.29

The accompanying notes are an integral part of these financial statements.

Statement of Operations (unaudited)

For the Six Months Ended 10/31/15

INVESTMENT INCOME:		
Interest		$11,240,429
EXPENSES:		
Management fees	$1,207,644	
Administrative expense	125,030	

Transfer agent fees and expenses	7,658	
Shareholder communication expenses	8,553	
Auction agent fees	126,886	
Custodian fees	2,812	
Professional fees	54,135	
Printing expenses	4,981	
Trustees' fees	7,135	
Pricing fees	10,195	
Miscellaneous	39,797	
Total expenses		$ 1,594,826
Net investment income		$ 9,645,603
REALIZED AND UNREALIZED GAIN (LOSS) ON INVESTMENTS:		
Net realized loss on investments	$ (218,522)	
Change in net unrealized depreciation on investments:	(383,019)	
Net realized and unrealized loss on investments		$ (601,541)
DISTRIBUTIONS TO PREFERRED SHAREOWNERS FROM NET INVESTMENT INCOME:		$ (87,315)
Net increase in net assets resulting from operations		$ 8,956,747

The accompanying notes are an integral part of these financial statements.

Statements of Changes in Net Assets

	Six Months Ended 10/31/15 (unaudited)	Year Ended 4/30/15
FROM OPERATIONS:		
Net investment income	$ 9,645,603	$ 20,537,755
Net realized gain (loss) on investments	(218,522)	331,110
Change in net unrealized appreciation (depreciation) on investments	(383,019)	3,313,660
Distributions to preferred shareowners from net investment income	(87,315)	(128,802)
Net increase in net assets resulting from operations	$ 8,956,747	$ 24,053,723
DISTRIBUTIONS TO COMMON SHAREOWNERS:		
Net investment income and previously undistributed net investment income ($0.42 and $1.08 per share, respectively)	$ (9,550,204)	$ (24,502,438)
Total distributions to common shareowners	$ (9,550,204)	$ (24,502,438)
FROM TRUST SHARE TRANSACTIONS:		
Reinvestment of distributions	$ --	$ 1,294,762

Net increase in net assets applicable to common shareowners from Trust share transactions	$ --	$ 1,294,762
Net increase (decrease) in net assets applicable to common shareowners	$ (593,457)	$ 846,047
NET ASSETS APPLICABLE TO COMMON SHAREOWNERS:		
Beginning of period	302,717,864	301,871,817
End of period	$ 302,124,407	$ 302,717,864
Undistributed net investment income	$ 3,688,522	$ 3,680,438

The accompanying notes are an integral part of these financial statements.

Financial Highlights

	Six Months Ended 10/31/15 (unaudited)	Year Ended 4/30/15	Year Ended 4/30/14
Per Share Operating Performance			
Net asset value, beginning of period	$ 13.31	$ 13.33	$ 14.72
Increase (decrease) from investment operations: (a)			
Net investment income	$ 0.42	$ 0.91	$ 1.05
Net realized and unrealized gain (loss) on investments	(0.02)	0.16	(1.29
Distributions to preferred shareowners from:			
Net investment income	$ (0.00)(h)	$ (0.01)	$ (0.01
Net increase (decrease) from investment operations	$ 0.40	$ 1.06	$ (0.25
Distributions to common shareowners from:			
Net investment income and previously undistributed net investment income	$ (0.42)	$ (1.08)*	$ (1.14
Net increase (decrease) in net asset value	$ (0.02)	$ (0.02)	$ (1.39
Net asset value, end of period (b)	$ 13.29	$ 13.31	$ 13.33
Market value, end of period (b)	$ 13.14	$ 14.75	$ 14.90
Total return at market value (c)	(7.91)%(e)	6.84%	1.10
Ratios to average net assets of common shareowners:			
Total expenses (d)	1.06%(f)	1.03%	1.04
Net investment income before preferred share distributions	6.39%(f)	6.73%	7.89
Preferred share distributions	0.06%(f)	0.04%	0.05
Net investment income available to common shareowners	6.33%(f)	6.69%	7.84
Portfolio turnover	4%	14%	19
Net assets of common shareowners, end of period (in thousands)	$302,124	$302,718	$301,872

The accompanying notes are an integral part of these financial statements.

	Six Months Ended 10/31/15 (unaudited)	Year Ended 4/30/15	Year Ended 4/30/
Preferred shares outstanding (in thousands)	$101,001	$101,001	$101,
Asset coverage per preferred share, end of period	$ 99,784	$ 99,930	$ 99,
Average market value per preferred share (g)	$ 25,000	$ 25,000	$ 25,
Liquidation value, including dividends payable, per preferred share	$ 25,000	$ 25,000	$ 25,

* The amount of distributions made to shareowners during the period were in excess of the net investment income earned by the Trust during the period. The Trust has accumulated undistributed net investment income which is part of the Trust's NAV. A portion of the accumulated net investment income was distributed to shareowners during the period. A decrease in distributions may have a negative effect on the market value of the Trust's shares.

(a) The per common share data presented above is based upon the average common shares outstanding for the periods presented.

(b) Net asset value and market value are published in Barron's on Saturday, The Wall Street Journal on Monday and The New York Times on Monday and Saturday.

(c) Total investment return is calculated assuming a purchase of common shares at the current market value on the first day and a sale at the current market value on the last day of the periods reported. Dividends and distributions, if any, are assumed for purposes of this calculation to be reinvested at prices obtained under the Trust's dividend reinvestment plan. Total investment return does not reflect brokerage commissions. Past performance is not a guarantee of future results.

(d) Expense ratios do not reflect the effect of distribution payments to preferred shareowners.

(e) Not annualized.

(f) Annualized.

(g) Market value is redemption value without an active market.

(h) Amount rounds to less than $(0.005) per share.

The accompanying notes are an integral part of these financial statements.

Notes to Financial Statements | 10/31/15 (unaudited)

1. Organization and Significant Accounting Policies

Pioneer Municipal High Income Trust (the Trust) was organized as a Delaware statutory trust on March 13, 2003. Prior to commencing operations on July 21, 2003, the Trust had no operations other than matters relating to its organization and registration as a diversified, closed-end management investment company under the Investment Company Act of 1940, as amended. The investment objective of the Trust is to seek a high level of current income exempt from regular federal income tax, and the Trust may, as a secondary objective, also seek capital appreciation to the extent that it is consistent with its primary investment objective.

The Trust's financial statements have been prepared in conformity with U.S. generally accepted accounting principles that require the management of the Trust to, among other things, make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of income, expenses and gain or loss on investments during the reporting period. Actual results could differ from those estimates.

The following is a summary of significant accounting policies followed by the Trust in the preparation of its financial statements:

A. Security Valuation

Security transactions are recorded as of trade date. Fixed income securities are valued at prices supplied by independent pricing services, which consider such factors as market prices, market events, quotations from one or more brokers, Treasury spreads, yields, maturities and ratings. Valuations may be supplemented by dealers and other sources, as required. Equity securities that have traded on an exchange are valued at the last sale price on the principal exchange where they are traded. Equity securities that have not traded on the date of valuation or securities for which sale prices are not available, generally are valued using the mean between the last bid and asked prices. Shares of money market mutual funds are valued at such funds' net asset value.

Securities for which independent pricing services are unable to supply prices or for which market prices and/or quotations are not readily available or are considered to be unreliable are valued by a fair valuation team comprised of certain personnel of Pioneer Investment Management, Inc. (PIM), the Trust's investment adviser, pursuant to procedures adopted by the Trust's Board of Trustees. PIM's fair valuation team uses fair value methods approved by the Valuation Committee of the Board of Trustees. PIM's valuation team is

responsible for monitoring developments that may impact fair valued securities and for discussing and assessing fair value on an ongoing basis, and at least quarterly, with the Valuation Committee of the Board of Trustees.

At October 31, 2015, there were no securities valued using fair value methods (other than securities valued using prices supplied by independent pricing services or broker-dealers).

B. Investment Income and Transactions

Dividend income is recorded on the ex-dividend date, except that certain dividends from foreign securities where the ex-dividend date may have passed are recorded as soon as the Trust becomes aware of the ex-dividend date in the exercise of reasonable diligence.

Interest income, including interest or income bearing cash accounts, is recorded on an accrual basis.

Discounts and premiums on purchase prices of debt securities are accreted or amortized, respectively, daily, into interest income on an effective yield basis with a corresponding increase or decrease in the cost basis of the security.

Gains and losses on sales of investments are calculated on the identified cost method for both financial reporting and federal income tax purposes.

C. Federal Income Taxes

It is the Trust's policy to comply with the requirements of the Internal Revenue Code applicable to regulated investment companies and to distribute all of its net taxable income and net realized capital gains, if any, to its shareowners. Therefore, no federal income tax provision is required. As of April 30, 2015, the Trust did not accrue any interest or penalties with respect to uncertain tax positions, which if applicable, would be recorded as an income tax expense in the Statement of Operations. Tax returns filed within the prior three years remain subject to examination by federal and state tax authorities.

The amount and character of income and capital gain distributions to shareowners are determined in accordance with federal income tax rules, which may differ from U.S. generally accepted accounting principles. Distributions in excess of net investment income or net realized gains are temporary overdistributions for financial statement purposes. Capital accounts within the financial statements are adjusted for permanent book/tax differences to reflect tax character, but are not adjusted for temporary differences.

The tax character of current year distributions payable to shareholders will be determined at the end of the current taxable year.

The tax character of distributions paid to shareowners during the year ended April 30, 2015 was as follows:

	2015
Distributions paid from:	
Tax exempt income	$23,767,247
Ordinary income	863,993
Total	$24,631,240

The following shows the components of distributable earnings (losses) on a federal income tax basis at April 30, 2015:

	2015
Distributable earnings:	
Undistributed ordinary income	$ 530,667
Capital loss carryforward	(34,791,020)
Last year loss deferrals	(285,295)
Dividends payable	(769)
Undistributed tax-exempt income	1,644,358
Unrealized appreciation	21,500,261
Total	$(11,401,798)

The difference between book-basis and tax-basis unrealized appreciation is primarily attributable to the difference between book and tax amortization methods for premiums and discounts on fixed income securities, book/tax differences in accrual of income on securities in default, and other book and tax temporary differences.

D. Automatic Dividend Reinvestment Plan

All common shareowners whose shares are registered in their own names automatically participate in the Automatic Dividend Reinvestment Plan (the Plan), under which participants receive all dividends and capital gain distributions (collectively, dividends) in full and fractional common shares of the Trust in lieu of cash. Shareowners may elect not to participate in the Plan. Shareowners not participating in the Plan receive all dividends and capital gain distributions in cash. Participation in the Plan is completely voluntary and may be terminated or resumed at any time without penalty by notifying American Stock Transfer & Trust Company, the agent for shareowners in administering the Plan (the Plan Agent), in writing prior to any dividend record date; otherwise such termination or resumption will be effective with respect to any subsequently declared dividend or other distribution.

If a shareowner's shares are held in the name of a brokerage firm, bank or other nominee, the shareowner can ask the firm or nominee to participate in the Plan on the shareowner's behalf. If the firm or nominee does not offer the Plan, dividends will be paid in cash to the shareowner of record. A firm or nominee may reinvest a shareowner's cash dividends in common shares of the Trust on terms that differ from the terms of the Plan.

Whenever the Trust declares a dividend on common shares payable in cash, participants in the Plan will receive the equivalent in common shares acquired by the Plan Agent either (i) through receipt of additional unissued but authorized common shares from the Trust or (ii) by purchase of outstanding common shares on the New York Stock Exchange or elsewhere. If, on the payment date for any dividend, the net asset value per common share is equal to or less than the market price per share plus estimated brokerage trading fees (market premium), the Plan Agent will invest the dividend amount in newly issued common shares. The number of newly issued common shares to be credited to each account will be determined by dividing the dollar amount of the dividend by the net asset value per common share on the date the shares are issued, provided that the maximum discount from the then current market price per share on the date of issuance does not exceed 5%. If, on the payment date for any dividend, the net asset value per common share is greater than the market value (market discount), the Plan Agent will invest the dividend amount in common shares acquired in open-market purchases. There are no brokerage charges with respect to newly issued common shares. However, each participant will pay a pro rata share of brokerage trading fees incurred with respect to the Plan Agent's open-market purchases. Participating in the Plan does not relieve shareowners from any federal, state or local taxes which may be due on dividends paid in any taxable year. Shareowners holding Plan shares in a brokerage account may not be able to transfer the shares to another broker and continue to participate in the Plan.

E. Risks

At times, the Trust's investments may represent industries or industry sectors that are interrelated or have common risks, making the Trust more susceptible to any economic, political, or regulatory developments or other risks affecting those industries and sectors. Information regarding the Trust's principal risks is contained in the Trust's original offering prospectus, with additional information included in the Trust's shareowner reports issued from time to time. Please refer to those documents when considering the Trust's principal risks.

The Trust may invest in both investment grade and below investment grade (high-yield) municipal securities with a broad range of maturities and credit ratings. Debt securities rated below investment grade are commonly referred to as "junk bonds" and are considered speculative. Below investment grade securities involve greater risk of loss, are subject to greater price volatility, and are less liquid and more difficult to value, especially during periods of economic uncertainty or change, than higher rated debt securities.

2. Management Agreement

PIM, the Trust's investment adviser, a wholly owned indirect subsidiary of UniCredit S.p.A. (UniCredit), manages the Trust's portfolio. Management fees payable under the Trust's Advisory Agreement with PIM are calculated daily at the annual rate of 0.60% of the Trust's average daily managed assets. "Managed assets" means (a) the total assets of the Trust, including any form of investment leverage, minus (b) all accrued liabilities incurred in the normal course of operations, which shall not include any liabilities or obligations attributable to investment leverage obtained through (i) indebtedness of any type (including, without limitation, borrowing through a credit facility or the issuance of debt securities), (ii) the issuance of preferred stock or other similar preference securities, and/or (iii) any other means. For the six months ended October 31, 2015, the net management fee was 0.60% (annualized) of the Trust's average daily managed assets, which was equivalent to 0.80% (annualized) of the Trust's average daily net assets attributable to the common shareowners.

In addition, under PIM's management and administration agreements, certain other services and costs are paid by PIM and reimbursed by the Trust. At October 31, 2015, $311,375 was payable to PIM related to management costs, administrative costs and certain other services is included in "Due to affiliates" and "Administration fee payable" on the Statement of Assets and Liabilities.

3. Transfer Agent

Prior to November 2, 2015, Pioneer Investment Management Shareholder Services, Inc. (PIMSS), a wholly owned indirect subsidiary of UniCredit, through a sub-transfer agency agreement with American Stock Transfer & Trust Company (AST), provided substantially all transfer agent and shareowner services related to the Trust's common shares at negotiated rates.

In addition, the Trust reimbursed PIMSS for out-of-pocket expenses incurred by PIMSS related to shareowner communications activities such as proxy and statement mailings and outgoing phone calls.

Effective November 2, 2015, AST serves as the transfer agent with respect to the Trust's common shares. The Trust pays AST an annual fee, as agreed to from time to time by the Trust and AST, for providing such services.

4. Expense Offset Arrangement

The Trust has entered into an arrangement with its custodian whereby credits realized as a result of uninvested cash balances are used to reduce a portion of the Trust's custodian expenses. For the six months ended October 31, 2015, the Trust expenses were not reduced under such arrangement.

5. Trust Shares

There are an unlimited number of common shares of beneficial interest authorized.

Transactions in common shares of beneficial interest for the six months ended October 31, 2015 and the year ended April 30, 2015 were as follows:

	10/31/15	4/30/15
Shares outstanding at beginning of period	22,738,580	22,646,773
Reinvestment of distributions	--	91,807
Shares outstanding at end of period	22,738,580	22,738,580

The Trust may classify or reclassify any unissued shares of beneficial interest into one or more series of preferred shares of beneficial interest. As of October 31, 2015, there were 4,040 APS as follows: Series A -- 2,000 and Series B -- 2,040.

Dividends on Series A and Series B are cumulative at a rate which is to be reset every seven days based on the results of an auction. An auction fails if there are more APS offered for sale than there are buyers. When an auction fails, the dividend rate for the period will be the maximum rate on the auction dates described in the prospectus for the APS. Preferred shareowners are not able to sell their APS at an auction if the auction fails. Since February 2008, the Trust's auctions related to the APS have failed. The maximum rate for each series is 125% of the 7 day commercial paper rate or adjusted Kenny rate. Dividend rates on APS ranged from 0.088% to 0.275% during the six months ended October 31, 2015.

The Trust may not declare dividends or make other distributions on its common shares or purchase any such shares if, at the time of the declaration, distribution or purchase, the Trust does not comply with the asset coverage ratios described in the prospectus for the APS.

The APS are redeemable at the option of the Trust, in whole or in part, on any dividend payment date at $25,000 per share plus any accumulated or unpaid dividends, whether or not declared. The APS are also subject to mandatory redemption at $25,000 per share plus any accumulated or unpaid dividends,

whether or not declared, if certain requirements relating to the composition of the assets and liabilities of the Trust as set forth in the Statement of Preferences are not satisfied.

The holders of APS have voting rights equal to the holders of the Trust's common shares (one vote per share) and will vote together with holders of the common shares as a single class. Holders of APS are also entitled to elect two of the Trust's Trustees. In addition, the Investment Company Act of 1940, as amended, requires that along with approval by shareowners that might otherwise be required, the approval of the holders of a majority of any outstanding preferred shares, voting separately as a class, would be required to (a) adopt any plan of reorganization that would adversely affect the preferred shares and (b) take any action requiring a vote of security holders, including, among other things, changes in the Trust's subclassification as a closed-end management investment company or changes in its fundamental investment restrictions.

6. Subsequent Events

A monthly dividend was declared on November 3, 2015 from undistributed and accumulated net investment income of $0.0700 per common share payable November 30, 2015, to common shareowners of record on November 18, 2015.

Subsequent to October 31, 2015, dividends declared and paid on preferred shares totaled $18,488 in aggregate for the two outstanding preferred share series through December 9, 2015.

ADDITIONAL INFORMATION

During the period, there have been no material changes in the Trust's investment objective or fundamental policies that have not been approved by the shareowners. There have been no changes in the Trust's charter or By-Laws that would delay or prevent a change in control of the Trust which has not been approved by the shareowners. During the period, there have been no changes in the principal risk factors associated with investment in the Trust. There were no changes in the persons who are primarily responsible for the day-to-day management of the Trust's portfolio.

Notice is hereby given in accordance with Section 23(c) of the Investment Company Act of 1940 that the Trust may purchase, from time to time, its common shares in the open market.

PIM, the Trust's investment adviser, is currently an indirect, wholly owned subsidiary of UniCredit. On November 11, 2015, UniCredit announced that it signed a binding master agreement with Banco Santander and affiliates of Warburg Pincus and General Atlantic (the "Private Equity Firms") with respect to Pioneer Investments ("Pioneer") and Santander Asset Management ("SAM") (the "Transaction").

The Transaction, as previously announced by UniCredit, will establish a holding company, with the name Pioneer Investments, to be owned by UniCredit (50%) and the Private Equity Firms (50% between them). The holding company will control Pioneer's U.S. operations, including PIM. The holding company also will own 66.7% of Pioneer's and SAM's combined operations outside the U.S., while Banco Santander will own directly the remaining 33.3% stake. The closing of the Transaction is expected to happen in 2016, subject to certain regulatory and other approvals.

Under the Investment Company Act of 1940, completion of the Transaction will cause the Trust's investment advisory agreement with PIM to terminate. Accordingly, the Trust's Board of Trustees will be asked to approve a new investment advisory agreement. If approved by the Board, the Trust's new investment advisory agreement will be submitted to the shareholders of the Trust for their approval.

Results of Shareholder Meeting

At the annual meeting of shareowners held on September 22, 2015, shareowners of Pioneer Municipal High Income Trust were asked to consider the proposal described below. A report of the total votes cast by the Trust's shareholders follows:

Proposal 1 -- To elect two Class I Trustees and three Class III Trustees.

Nominee	For	Withheld
Class I		
Lisa M. Jones	19,047,727	1,153,345
Lorraine H. Monchak	19,060,717	1,140,555
Class III		
Thomas J. Perna	19,105,144	1,096,128
Marguerite A. Piret*	2,482	65
Fred J. Ricciardi	19,177,231	1,024,041

*Elected by preferred shares only.

Approval of Investment Advisory Agreement

Pioneer Investment Management, Inc. (PIM) serves as the investment adviser to Pioneer Municipal High Income Trust (the Trust) pursuant to an investment advisory agreement between PIM and the Trust. In order for PIM to remain the investment adviser of the Trust, the Trustees of the Trust must determine annually whether to renew the investment advisory agreement for the Trust.

The contract review process began in January 2015 as the Trustees of the Trust agreed on, among other things, an overall approach and timeline for the process. Contract review materials were provided to the Trustees in March 2015 and July 2015. Supplemental contract review materials were provided to the Trustees in September 2015. In addition, the Trustees reviewed and discussed the Trust's performance at regularly scheduled meetings throughout the year and took into account other information related to the Trust provided to the Trustees at regularly scheduled meetings in connection with the review of the Trust's investment advisory agreement.

In March 2015, the Trustees, among other things, discussed the memorandum provided by Trust counsel that summarized the legal standards and other considerations that are relevant to the Trustees in their deliberations regarding the renewal of the investment advisory agreement, and reviewed and discussed the qualifications of the investment management teams, as well as the level of investment by the Trust's portfolio managers in the Trust. In July 2015, the Trustees, among other things, reviewed the Trust's management fee and total expense ratios, the financial statements of PIM and its parent companies, the profitability analyses provided by PIM, and possible economies of scale. The Trustees also reviewed the profitability of the institutional business of PIM and PIM's affiliate, Pioneer Institutional Asset Management, Inc. (together with PIM, "Pioneer"), as compared to that of PIM's fund management business, and considered the differences between the fees and expenses of the Trust and the fees and expenses of Pioneer's institutional accounts, as well as the different services provided by PIM to the Trust and by Pioneer to the institutional accounts. The Trustees further considered contract review materials in September 2015.

At a meeting held on September 15, 2015, based on their evaluation of the information provided by PIM and third parties, the Trustees of the Trust, including the Independent Trustees voting separately, unanimously approved the renewal of the investment advisory agreement for another year. In approving the renewal of the investment advisory agreement, the Trustees

considered various factors that they determined were relevant, including the factors described below. The Trustees did not identify any single factor as the controlling factor in determining to approve the renewal of the agreement.

Nature, Extent and Quality of Services

The Trustees considered the nature, extent and quality of the services that had been provided by PIM to the Trust, taking into account the investment objective and strategy of the Trust. The Trustees also reviewed PIM's investment approach for the Trust and its research process. The Trustees considered the resources of PIM and the personnel of PIM who provide investment management services to the Trust. They also reviewed the amount of non-Trust assets managed by the portfolio managers of the Trust. The Trustees considered the non-investment resources and personnel of PIM involved in PIM's services to the Trust, including PIM's compliance and legal resources and personnel. The Trustees noted the substantial attention and high priority given by PIM's senior management to the Pioneer fund complex.

The Trustees considered that PIM supervises and monitors the performance of the Trust's service providers and provides the Trust with personnel (including Trust officers) and other resources that are necessary for the Trust's business management and operations. The Trustees also considered that, as administrator, PIM is responsible for the administration of the Trust's business and other affairs. The Trustees considered the fees paid to PIM for the provision of administration services.

Based on these considerations, the Trustees concluded that the nature, extent and quality of services that had been provided by PIM to the Trust were satisfactory and consistent with the terms of the investment advisory agreement.

Performance of the Trust

In considering the Trust's performance, the Trustees regularly review and discuss throughout the year data prepared by PIM and information comparing the Trust's performance with the performance of its peer group of funds as classified by each of Morningstar, Inc. (Morningstar) and Lipper, and with the performance of the Trust's benchmark index. They also discuss the Trust's performance with PIM on a regular basis. The Trustees' regular reviews and discussions were factored into the Trustees' deliberations concerning the renewal of the advisory agreement. The Trustees indicated that the Trust's performance, when considered in connection with the various other factors, was consistent with the renewal of the investment advisory agreement.

Management Fee and Expenses

The Trustees considered information showing the fees and expenses of the Trust in comparison to the management fees and the expense ratios of a peer group of funds selected on the basis of criteria determined by the Independent Trustees for this purpose using data provided by Strategic Insight Mutual Fund Research and Consulting, LLC (Strategic Insight), an independent third party. In all quintile rankings referred to below, first quintile is most favorable to the Trust's shareowners.

The Trustees considered that the Trust's management fee (based on managed assets) for the most recent fiscal year was in the third quintile relative to the management fees paid by other funds in its Strategic Insight peer group for the comparable period. The Trustees considered that the expense ratio (based on managed assets) of the Trust's common shares for the most recent fiscal year was in the third quintile relative its Strategic Insight peer group for the comparable period.

The Trustees reviewed management fees charged by Pioneer to institutional and other clients, including publicly offered European funds sponsored by affiliates of Pioneer, unaffiliated U.S. registered investment companies (in a sub-advisory capacity), and unaffiliated foreign and domestic separate accounts. The Trustees also considered PIM's costs in providing services to the Trust and Pioneer's costs in providing services to the other clients and considered the differences in management fees and profit margins for Trust and non-Trust services. In evaluating the fees associated with Pioneer's client accounts, the Trustees took into account the respective demands, resources and complexity associated with the Trust and client accounts. The Trustees noted that, in some instances, the fee rates for those clients were lower than the management fee for the Trust and considered that, under the investment advisory agreement with the Trust, PIM performs additional services for the Trust that it does not provide to those other clients or services that are broader in scope, including oversight of the Trust's other service providers and activities related to compliance and the extensive regulatory and tax regimes to which the Trust is subject. The Trustees also considered the different entrepreneurial risks associated with PIM's management of the Trust and Pioneer's management of the other client accounts.

The Trustees concluded that the management fee payable by the Trust to PIM was reasonable in relation to the nature and quality of the services provided by PIM to the Trust.

Profitability

The Trustees considered information provided by PIM regarding the profitability of PIM with respect to the advisory services provided by PIM to the Trust, including the methodology used by PIM in allocating certain of its costs to the management of the Trust. The Trustees also considered PIM's profit margin in connection with the overall operation of the Trust. They further reviewed the financial results realized by PIM and its affiliates from non-fund businesses. The Trustees considered PIM's profit margins with respect to the Trust in comparison to the limited industry data available and noted that the profitability of any adviser was affected by numerous factors, including its organizational structure and method for allocating expenses. The Trustees concluded that PIM's profitability with respect to the management of the Trust was not unreasonable.

Economies of Scale

The Trustees considered the extent to which PIM may realize economies of scale or other efficiencies in managing and supporting the Trust. Since the Trust is a closed-end fund that has not raised additional capital, the Trustees concluded that economies of scale were not a relevant consideration in the renewal of the investment advisory agreement.

Other Benefits

The Trustees considered the other benefits to PIM from its relationship with the Trust. The Trustees considered the character and amount of fees paid by the Trust, other than under the investment advisory agreement, for services provided by PIM and its affiliates. The Trustees further considered the revenues and profitability of PIM's businesses other than the fund business. Pioneer is the principal U.S. asset management business of Pioneer Global Asset Management, the worldwide asset management business of UniCredit Group, which manages over $150 billion in assets (including the Funds). Pioneer and the Funds receive reciprocal intangible benefits from the relationship, including mutual brand recognition and, for the Funds, direct and indirect access to the resources of a large global asset manager. The Trustees concluded that any such benefits received by Pioneer as a result of its relationship with the Funds were reasonable and their consideration of the advisory agreement between the Trust and PIM and the fees thereunder were unaffected by Pioneer's possible receipt of any such intangible benefits.

Conclusion

After consideration of the factors described above as well as other factors, the Trustees, including all of the Independent Trustees, concluded that the investment advisory agreement between PIM and the Trust, including the fees payable thereunder, was fair and reasonable and voted to approve the proposed renewal of the investment advisory agreement for the Trust.

Trustees, Officers and Service Providers

Trustees
Thomas J. Perna, Chairman
David R. Bock
Benjamin M. Friedman
Margaret B.W. Graham
Lisa M. Jones
Lorraine H. Monchak
Marguerite A. Piret
Fred J. Ricciardi
Kenneth J. Taubes

Officers
Lisa M. Jones, President and Chief Executive Officer
Mark E. Bradley, Treasurer and Chief Financial Officer
Christopher J. Kelley, Secretary and Chief Legal Officer

Investment Adviser and Administrator
Pioneer Investment Management, Inc.

Custodian and Sub-Administrator
Brown Brothers Harriman & Co.

Principal Underwriter
Pioneer Funds Distributor, Inc.

Legal Counsel
Morgan, Lewis & Bockius LLP

Transfer Agent
American Stock Transfer & Trust Company

Proxy Voting Policies and Procedures of the Fund are available without charge, upon request, by calling our toll free number (1-800-225-6292). Information regarding how the Fund voted proxies relating to portfolio securities during the most recent 12-month period ended June 30 is publicly available to shareowners at us.pioneerinvestments.com. This information is also available on the Securities and Exchange Commission's web site at www.sec.gov.

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This page for your notes.

How to Contact Pioneer

We are pleased to offer a variety of convenient ways for you to contact us for assistance or information.

You can call American Stock Transfer & Trust Company (AST) for:

Account Information 1-800-710-0935

Or write to AST:

For	Write to
General inquiries, lost dividend checks, change of address, lost stock certificates, stock transfer	American Stock Transfer & Trust Operations Center 6201 15th Ave. Brooklyn, NY 11219
Dividend reinvestment plan (DRIP)	American Stock Transfer & Trust Wall Street Station P.O. Box 922 New York, NY 10269-0560

Website www.amstock.com

For additional information, please contact your investment advisor or visit our web site us.pioneerinvestments.com.

The Trust files a complete schedule of investments with the Securities and Exchange Commission for the first and third quarters for each fiscal year on Form N-Q. Shareowners may view the filed Form N-Q by visiting the Commission's web site at www.sec.gov. The filed form may also be viewed and copied at the Commission's Public Reference Room in Washington, DC. Information regarding the operations of the Public Reference Room may be obtained by calling 1-800-SEC-0330.

[LOGO] PIONEER
Investments(R)

Pioneer Investment Management, Inc.
60 State Street
Boston, MA 02109
us.pioneerinvestments.com

Securities offered through Pioneer Funds Distributor, Inc.
60 State Street, Boston, MA 02109
Underwriter of Pioneer Mutual Funds, Member SIPC
(C) 2015 Pioneer Investments 19442-09-1215

ITEM 2. CODE OF ETHICS.

(a) Disclose whether, as of the end of the period covered by the report, the registrant has adopted a code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, regardless of whether these individuals are employed by the registrant or a third party. If the registrant has not adopted such a code of ethics, explain why it has not done so.

The registrant has adopted, as of the end of the period covered by this report, a code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer and controller.

(b) For purposes of this Item, the term "code of ethics" means written standards that are reasonably designed to deter wrongdoing and to promote:

(1) Honest and ethical conduct, including the ethical handling of actual

or apparent conflicts of interest between personal and professional relationships;

(2) Full, fair, accurate, timely, and understandable disclosure in reports and documents that a registrant files with, or submits to, the Commission and in other public communications made by the registrant;

(3) Compliance with applicable governmental laws, rules, and regulations;

(4) The prompt internal reporting of violations of the code to an appropriate person or persons identified in the code; and

(5) Accountability for adherence to the code.

(c) The registrant must briefly describe the nature of any amendment, during the period covered by the report, to a provision of its code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, regardless of whether these individuals are employed by the registrant or a third party, and that relates to any element of the code of ethics definition enumerated in paragraph (b) of this Item. The registrant must file a copy of any such amendment as an exhibit pursuant to Item 10(a), unless the registrant has elected to satisfy paragraph (f) of this Item by posting its code of ethics on its website pursuant to paragraph (f)(2) of this Item, or by undertaking to provide its code of ethics to any person without charge, upon request, pursuant to paragraph (f)(3) of this Item.

The registrant has made no amendments to the code of ethics during the period covered by this report.

(d) If the registrant has, during the period covered by the report, granted a waiver, including an implicit waiver, from a provision of the code of ethics to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions, regardless of whether these individuals are employed by the registrant or a third party, that relates to one or more of the items set forth in paragraph (b) of this Item, the registrant must briefly describe the nature of the waiver, the name of the person to whom the waiver was granted, and the date of the waiver.

Not applicable.

(e) If the registrant intends to satisfy the disclosure requirement under paragraph (c) or (d) of this Item regarding an amendment to, or a waiver from, a provision of its code of ethics that applies to the registrant's principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and that relates to any element of the code of ethics definition enumerated in paragraph (b) of this Item by posting such information on its Internet website, disclose the registrant's Internet address and such intention.

Not applicable.

(f) The registrant must:

(1) File with the Commission, pursuant to Item 12(a)(1), a copy of its code of ethics that applies to the registrant's principal executive officer,principal financial officer, principal accounting officer or controller, or persons performing similar functions, as an exhibit to its annual report on this Form N-CSR (see attachment);

(2) Post the text of such code of ethics on its Internet website and disclose, in its most recent report on this Form N-CSR, its Internet address and the fact that it has posted such code of ethics on its Internet website; or

(3) Undertake in its most recent report on this Form N-CSR to provide to any person without charge, upon request, a copy of such code of ethics and explain the manner in which such request may be made.
See Item 10(2)

ITEM 3. AUDIT COMMITTEE FINANCIAL EXPERT.

(a) (1) Disclose that the registrant's board of trustees has determined that the registrant either:

(i) Has at least one audit committee financial expert serving on its audit committee; or

(ii) Does not have an audit committee financial expert serving on its audit committee.

The registrant's Board of Trustees has determined that the registrant has at least one audit committee financial expert.

(2) If the registrant provides the disclosure required by paragraph (a)(1)(i) of this Item, it must disclose the name of the audit committee financial expert and whether that person is "independent." In order to be considered "independent" for purposes of this Item, a member of an audit committee may not, other than in his or her capacity as a member of the audit committee, the board of trustees, or any other board committee:

(i) Accept directly or indirectly any consulting, advisory, or other compensatory fee from the issuer; or

(ii) Be an "interested person" of the investment company as defined in Section 2(a)(19) of the Act (15 U.S.C. 80a-2(a)(19)).

Ms. Marguerite A. Piret, an independent trustee, is such an audit committee financial expert.

(3) If the registrant provides the disclosure required by paragraph (a)(1)(ii) of this Item, it must explain why it does not have an audit committee financial expert.

Not applicable.

ITEM 4. PRINCIPAL ACCOUNTANT FEES AND SERVICES.

(a) Disclose, under the caption AUDIT FEES, the aggregate fees billed for each of the last two fiscal years for professional services rendered by the principal accountant for the audit of the registrant's annual financial statements or services that are normally provided by the accountant in connection with statutory and regulatory filings or engagements for those fiscal years.

Not applicable.

(b) Disclose, under the caption AUDIT-RELATED FEES, the aggregate fees billed in each of the last two fiscal years for assurance and related services by the principal accountant that are reasonably related to the performance of the audit of the registrant's financial statements and are not reported under paragraph (a) of this Item. Registrants shall describe the nature of the services comprising the fees disclosed under this category.

Not applicable.

(c) Disclose, under the caption TAX FEES, the aggregate fees billed in each of the last two fiscal years for professional services rendered by the principal accountant for tax compliance, tax advice, and tax planning. Registrants shall describe the nature of the services comprising the fees disclosed under this category.

Not applicable.

(d) Disclose, under the caption ALL OTHER FEES, the aggregate fees billed in each of the last two fiscal years for products and services provided by the principal accountant, other than the services reported in paragraphs (a) through (c) of this Item. Registrants shall describe the nature of the services comprising the fees disclosed under this category.

Not applicable.

(e) (1) Disclose the audit committee's pre-approval policies and procedures described in paragraph (c)(7) of Rule 2-01 of Regulation S-X.

PIONEER FUNDS

APPROVAL OF AUDIT, AUDIT-RELATED, TAX AND OTHER SERVICES
PROVIDED BY THE INDEPENDENT AUDITOR

SECTION I - POLICY PURPOSE AND APPLICABILITY

The Pioneer Funds recognize the importance of maintaining the independence of their outside auditors. Maintaining independence is a shared responsibility involving Pioneer Investment Management, Inc ("PIM"), the audit committee and the independent auditors.

The Funds recognize that a Fund's independent auditors: 1) possess knowledge of the Funds, 2) are able to incorporate certain services into the scope of the audit, thereby avoiding redundant work, cost and disruption of Fund personnel and processes, and 3) have expertise that has value to the Funds. As a result, there are situations where it is desirable to use the Fund's independent auditors for services in addition to the annual audit and where the potential for conflicts of interests are minimal. Consequently, this policy, which is intended to comply with Rule 210.2-01(C)(7), sets forth guidelines and procedures to be followed by the Funds when retaining the independent audit firm to perform audit, audit-related tax and other services under those circumstances, while also maintaining independence.

Approval of a service in accordance with this policy for a Fund shall also constitute approval for any other Fund whose pre-approval is required pursuant to Rule 210.2-01(c)(7)(ii).

In addition to the procedures set forth in this policy, any non-audit services that may be provided consistently with Rule 210.2-01 may be approved by the Audit Committee itself and any pre-approval that may be waived in accordance with Rule 210.2-01(c)(7)(i)(C) is hereby waived.

Selection of a Fund's independent auditors and their compensation shall be determined by the Audit Committee and shall not be subject to this policy.

SECTION II - POLICY

SERVICE CATEGORY	SERVICE CATEGORY DESCRIPTION	SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES
I. AUDIT SERVICES	Services that are directly related to performing the independent audit of the Funds	o Accounting research assistance o SEC consultation, registration statements, and reporting o Tax accrual related matters o Implementation of new accounting standards o Compliance letters (e.g. rating agency letters) o Regulatory reviews and assistance regarding financial matters o Semi-annual reviews (if requested) o Comfort letters for closed end offerings
II. AUDIT-RELATED SERVICES	Services which are not prohibited under Rule 210.2-01(C)(4) (the "Rule") and are related extensions of the audit services support the audit, or use the knowledge/expertise gained from the audit procedures as a foundation to complete the project. In most cases, if the Audit-Related Services are not performed by the Audit firm, the scope of the Audit Services would likely increase. The Services are typically well-defined and governed by accounting professional standards (AICPA, SEC, etc.)	o AICPA attest and agreed-upon procedures o Technology control assessments o Financial reporting control assessments o Enterprise security architecture assessment

AUDIT COMMITTEE APPROVAL POLICY	AUDIT COMMITTEE REPORTING POLICY
o "One-time" pre-approval for the audit period for all pre-approved specific service subcategories. Approval of the independent auditors as auditors for a Fund shall constitute pre approval for these services.	o A summary of all such services and related fees reported at each regularly scheduled Audit Committee meeting.
o "One-time" pre-approval for the fund fiscal year within a specified dollar limit for all pre-approved specific service subcategories	o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly.

o Specific approval is needed to exceed the pre-approved dollar limit for these services (see general Audit Committee approval policy below for details on obtaining specific approvals)	
o Specific approval is needed to use the Fund's auditors for Audit-Related Services not denoted as "pre-approved", or to add a specific service subcategory as "pre-approved"	

SECTION III - POLICY DETAIL, CONTINUED

SERVICE CATEGORY	SERVICE CATEGORY DESCRIPTION	SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES
III. TAX SERVICES	Services which are not prohibited by the Rule, if an officer of the Fund determines that using the Fund's auditor to provide these services creates significant synergy in the form of efficiency, minimized disruption, or the ability to maintain a desired level of confidentiality.	o Tax planning and support o Tax controversy assistance o Tax compliance, tax returns, excise tax returns and support o Tax opinions

AUDIT COMMITTEE APPROVAL POLICY	AUDIT COMMITTEE REPORTING POLICY
o "One-time" pre-approval for the fund fiscal year within a specified dollar limit	o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly.
o Specific approval is needed to exceed the pre-approved dollar limits for these services (see general Audit Committee approval policy below for details on obtaining specific approvals)	

o Specific approval is needed to use the Fund's auditors for tax services not denoted as pre-approved, or to add a specific service subcategory as "pre-approved"

SECTION III - POLICY DETAIL, CONTINUED

SERVICE CATEGORY	SERVICE CATEGORY DESCRIPTION	SPECIFIC PRE-APPROVED SERVICE SUBCATEGORIES
IV. OTHER SERVICES A. SYNERGISTIC, UNIQUE QUALIFICATIONS	Services which are not prohibited by the Rule, if an officer of the Fund determines that using the Fund's auditor to provide these services creates significant synergy in the form of efficiency, minimized disruption, the ability to maintain a desired level of confidentiality, or where the Fund's auditors posses unique or superior qualifications to provide these services, resulting in superior value and results for the Fund.	o Business Risk Management support o Other control and regulatory compliance projects

AUDIT COMMITTEE APPROVAL POLICY	AUDIT COMMITTEE REPORTING POLICY
o "One-time" pre-approval for the fund fiscal year within a specified dollar limit o Specific approval is needed to exceed the pre-approved dollar limits for these services (see general Audit Committee approval policy below for details on obtaining specific approvals) o Specific approval is needed to use the Fund's auditors for "Synergistic" or	o A summary of all such services and related fees (including comparison to specified dollar limits) reported quarterly.

"Unique Qualifications" Other Services not denoted as pre-approved to the left, or to add a specific service subcategory as "pre-approved"

SECTION III - POLICY DETAIL, CONTINUED

SERVICE CATEGORY	SERVICE CATEGORY DESCRIPTION	SPECIFIC PROHIBITED SERVICE SUBCATEGORIES
PROHIBITED SERVICES	Services which result in the auditors losing independence status under the Rule.	1. Bookkeeping or other services related to the accounting records or financial statements of the audit client* 2. Financial information systems design and implementation* 3. Appraisal or valuation services, fairness* opinions, or contribution-in-kind reports 4. Actuarial services (i.e., setting actuarial reserves versus actuarial audit work)* 5. Internal audit outsourcing services* 6. Management functions or human resources 7. Broker or dealer, investment advisor, or investment banking services 8. Legal services and expert services unrelated to the audit 9. Any other service that the Public Company Accounting Oversight Board determines, by regulation, is impermissible

AUDIT COMMITTEE APPROVAL POLICY	AUDIT COMMITTEE REPORTING POLICY
o These services are not to be performed with the exception of the(*) services that may be permitted if they would not be subject to audit procedures at the audit client (as defined in rule 2-01(f)(4)) level the firm providing the service.	o A summary of all services and related fees reported at each regularly scheduled Audit Committee meeting will serve as continual confirmation that has not provided any restricted services.

GENERAL AUDIT COMMITTEE APPROVAL POLICY:

o For all projects, the officers of the Funds and the Fund's auditors will each make an assessment to determine that any proposed projects will not impair independence.

- Potential services will be classified into the four non-restricted service categories and the "Approval of Audit, Audit-Related, Tax and Other Services" Policy above will be applied. Any services outside the specific pre-approved service subcategories set forth above must be specifically approved by the Audit Committee.

- At least quarterly, the Audit Committee shall review a report summarizing the services by service category, including fees, provided by the Audit firm as set forth in the above policy.

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(2) Disclose the percentage of services described in each of paragraphs (b) through (d) of this Item that were approved by the audit committee pursuant to paragraph (c)(7)(i)(C) of Rule 2-01 of Regulation S-X.

Not applicable.

(f) If greater than 50 percent, disclose the percentage of hours expended on the principal accountants engagement to audit the registrant's financial statements for the most recent fiscal year that were attributed to work performed by persons other than the principal accountant's full-time, permanent employees.

Not applicable.

(g) Disclose the aggregate non-audit fees billed by the registrants accountant for services rendered to the registrant, and rendered to the registrants investment adviser (not including any sub-adviser whose role is primarily portfolio management and is subcontracted with or overseen by another investment adviser), and any entity controlling, controlled by, or under common control with the adviser that provides ongoing services to the registrant for each of the last two fiscal years of the registrant.

Not applicable.

(h) Disclose whether the registrants audit committee of the board of trustees has considered whether the provision of non-audit services that were rendered to the registrants investment adviser (not including any subadviser whose role is primarily portfolio management and is subcontracted with or overseen by another investment adviser), and any entity controlling, controlled by, or under common control with the investment adviser that provides ongoing services to the registrant that were not pre-approved pursuant to paragraph (c)(7)(ii) of Rule 2-01 of Regulation S-X is compatible with maintaining the principal accountant's independence.

The Trust's audit committee of the Board of Trustees has considered whether the provision of non-audit services that were rendered to the Affiliates (as defined) that were not pre- approved pursuant to paragraph (c)(7)(ii) of Rule 2-01 of Regulation S-X is compatible with maintaining the principal accountant's independence.

ITEM 5. AUDIT COMMITTEE OF LISTED REGISTRANTS

(a) If the registrant is a listed issuer as defined in Rule 10A-3 under the Exchange Act (17 CFR 240.10A-3), state whether or not the registrant has a separately-designated standing audit committee established in accordance with Section

3(a)(58)(A) of the Exchange Act (15 U.S.C. 78c(a)(58)(A)).
If the registrant has such a committee, however designated,
identify each committee member. If the entire board of directors
is acting as the registrant's audit committee as specified in
Section 3(a)(58)(B) of the Exchange Act (15 U.S.C. 78c(a)(58)(B)),
so state.

N/A

(b) If applicable, provide the disclosure required by Rule 10A-3(d)
under the Exchange Act (17 CFR 240.10A-3(d)) regarding an exemption
from the listing standards for audit committees.

N/A

ITEM 6. SCHEDULE OF INVESTMENTS.

File Schedule of Investments in securities of unaffiliated issuers
as of the close of the reporting period as set forth in 210.1212
of Regulation S-X [17 CFR 210.12-12], unless the schedule is
included as part of the report to shareholders filed under Item
1 of this Form.

Included in Item 1

ITEM 7. DISCLOSURE OF PROXY VOTING POLICIES AND PROCEDURES FOR
CLOSED-END MANAGEMENT INVESTMENT COMPANIES.

A closed-end management investment company that is filing an annual report on
this Form N-CSR must, unless it invests exclusively in non-voting securities,
describe the policies and procedures that it uses to determine how to vote
proxies relating to portfolio securities, including the procedures that the
company uses when a vote presents a conflict between the interests of its
shareholders, on the one hand, and those of the company's investment adviser;
principal underwriter; or any affiliated person (as defined in Section 2(a)(3)
of the Investment Company Act of 1940 (15 U.S.C. 80a-2(a)(3)) and the rules
thereunder) of the company, its investment adviser, or its principal
underwriter, on the other. Include any policies and procedures of the company's
investment adviser, or any other third party, that the company uses, or that are
used on the company's behalf, to determine how to vote proxies relating to
portfolio securities.

Not applicable to semi annual report.

ITEM 8. PORTFOLIO MANAGERS OF CLOSED-END MANAGEMENT INVESTMENT COMPANIES.

(a) If the registrant is a closed-end management investment company that
is filing an annual report on this Form N-CSR,provide the following
information:
(1) State the name, title, and length of service of the person or persons
employed by or associated with the registrant or an investment adviser
of the registrant who are primarily responsible for the day-to-day management
of the registrant's portfolio ("Portfolio Manager"). Also state each Portfolio
Manager's business experience during the past 5 years.

Not applicable to semi annual report.

ITEM 9. PURCHASES OF EQUITY SECURITIES BY CLOSED-END MANAGEMENT

INVESTMENT COMPANY AND AFFILIATED PURCHASERS.

(a) If the registrant is a closed-end management investment company, in the following tabular format, provide the information specified in paragraph (b) of this Item with respect to any purchase made by or on behalf of the registrant or any affiliated purchaser, as defined in Rule 10b-18(a)(3) under the Exchange Act (17 CFR 240.10b-18(a)(3)), of shares or other units of any class of the registrant's equity securities that is registered by the registrant pursuant to Section 12 of the Exchange Act (15 U.S.C. 781).

During the period covered by this report, there were no purchases made by or on behalf of the registrant or any affiliated purchaser as defined in Rule 10b-18(a)(3) under the Securities Exchange Act of 1934 (the Exchange Act), of shares of the registrants equity securities that are registered by the registrant pursuant to Section 12 of the Exchange Act.

ITEM 10. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS.

Describe any material changes to the procedures by which shareholders may recommend nominees to the registrant's board of directors, where those changes were implemented after the registrant last provided disclosure in response to the requirements of Item 407(c)(2)(iv) of Regulation S-R(17 CFR 229.407)(as required by Item 22(b)(15)) of Schedule 14A (17 CFR 240.14a-101), or this Item.

There have been no material changes to the procedures by which the shareholders may recommend nominees to the registrant's board of directors since the registrant last provided disclosure in response to the requirements of Item 407(c)(2)(iv) of Regulation S-R of Schedule 14(A) in its definitive proxy statement, or this item.

ITEM 11. CONTROLS AND PROCEDURES.

(a) Disclose the conclusions of the registrant's principal executive and principal financials officers, or persons performing similar functions, regarding 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 the evaluation of these controls and procedures required by Rule 30a-3(b) under the Act (17 CFR 270.30(a)-3(b) and Rules 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 the 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 control over financial reporting (as defined in Rule 30a-3(d) under the Act (17CFR 270.30a-3(d)) that occured during the second fiscal quarter of the period covered by this report 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.

The registrant's principal executive officer and principal financial officer, however, voluntarily are reporting the following information:

In August of 2006 the registrant's investment adviser enhanced its internal procedures for reporting performance information required to be included in prospectuses. Those enhancements involved additional internal controls over the appropriateness of performance data generated for this purpose. Such enhancements were made following an internal review which identified prospectuses relating to certain classes of shares of a limited number of registrants where, inadvertently, performance information not reflecting the deduction of applicable sales charges was included. Those prospectuses were revised, and the revised prospectuses were distributed to shareholders.

ITEM 12. EXHIBITS.

(a) File the exhibits listed below as part of this Form. Letter or number the exhibits in the sequence indicated.

(1) Any code of ethics, or amendment thereto, that is the subject of the disclosure required by Item 2, to the extent that the registrant intends to satisfy the Item 2 requirements through filing of an exhibit.

(2) A separate certification for each principal executive officer and principal financial officer of the registrant as required by Rule 30a-2(a) under the Act (17 CFR 270.30a-2(a)) , exactly as set forth below:

Filed herewith.

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/ Lisa M. Jones
Lisa M. Jones, President & Chief Executive Officer

Date December 30, 2015

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/ Lisa M. Jones
Lisa M. Jones, President & Chief Executive Officer

Date December 30, 2015

By (Signature and Title)* /s/ Mark Bradley
Mark Bradley, Treasurer & Chief Accounting & Financial Officer

Date December 30, 2015

* Print the name and title of each signing officer under his or her signature.