

PIONEER MUNICIPAL & EQUITY INCOME TRUST
Form N-Q
October 29, 2008

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

FORM N-Q

CERTIFIED SHAREHOLDER REPORT OF REGISTERED
MANAGEMENT INVESTMENT COMPANIES

Investment Company Act file number 811-21448

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

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

Dorothy E. Bourassa, 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: November 30

Date of reporting period: August 31, 2008

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

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

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ITEM 1. Schedule of Investments.

Pioneer Municipal and Equity Income Trust
SCHEDULE OF INVESTMENTS 8/31/08 (unaudited)

| Principal Amount (\$) | | Value (\$) |
|--------------------------|------------------------------------------------------------|------------|
| | TAX EXEMPT OBLIGATIONS - 82.7% of Net Assets | |
| | Alabama - 1.5% | |
| 5,000,000 | Huntsville-Redstone Village Special Care Facilities Fi | 3,970,050 |
| 1,500,000 | Sylacauga Health Care Authority Revenue, 6.0%, 8/1/35 | 1,322,505 |
| | | 5,292,555 |
| | Arizona - 1.1% | |
| 1,000,000 | Maricopa County Hospital Revenue, 5.0%, 4/1/35 | 871,470 |
| 470,000 | + Pima County Industrial Development Authority, 6.375%, | 539,786 |
| 530,000 | Pima County Industrial Development Authority, 6.375%, | 516,278 |
| 979,000 | Pima County Industrial Development Authority, 6.75%, 7 | 983,259 |
| 925,000 | + Pima County Industrial Development Authority, 7.5%, 7/ | 1,108,844 |
| | | 4,019,637 |
| | California - 3.5% | |
| 1,000,000 | California Health Facilities Authority Revenue, 5.25%, | 996,360 |
| 9,000,000 | Golden State Tobacco Securitization Corp., 5.125%, 6/1 | 6,696,180 |
| 4,000,000 | + Golden State Tobacco Securitization Corp., 6.75%, 6/1/ | 4,623,480 |
| | | 12,316,020 |
| | Colorado - 0.7% | |
| 3,000,000 | Colorado Educational & Cultural Facilities Authority R | 2,576,940 |
| | Connecticut - 1.0% | |
| 1,500,000 | Mohegan Tribe Indians Gaming Authority, 5.25%, 1/1/33 | 1,198,065 |
| 2,470,000 | Mohegan Tribe Indians Gaming Authority, 6.25%, 1/1/31 | 2,246,465 |
| | | 3,444,530 |
| | District of Columbia - 1.1% | |
| 4,000,000 | District of Columbia Tobacco Settlement Financing Corp | 3,968,440 |
| | Florida - 3.5% | |
| 1,105,000 | Highlands County Health Facilities Authority Revenue, | 1,078,657 |
| 5,000,000 | + Highlands County Health Facilities Authority Revenue, | 5,579,150 |
| 2,000,000 | Lee County Industrial Development Authority Revenue, 5 | 1,609,920 |
| 585,000 | Madison County First Mortgage Revenue, 6.0%, 7/1/25 | 536,568 |
| 2,025,000 | Miami Beach Health Facilities Authority Revenue, 5.375 | 1,734,007 |
| 500,000 | Miami Beach Health Facilities Authority Revenue, 6.7%, | 508,230 |
| 1,400,000 | Orange County Health Facilities Authority Revenue, 5.5 | 1,141,322 |
| | | 12,187,854 |
| | Georgia - 0.8% | |
| 2,500,000 | + Milledgeville-Baldwin County Development Authority Rev | 2,857,775 |
| | Illinois - 6.2% | |
| 3,000,000 | Chicago Illinois General Obligation, 5.0%, 1/1/28 | 3,031,980 |
| 4,580,000 | Illinois Development Finance Authority Revenue, 5.25%, | 4,658,501 |
| 5,000,000 | Illinois Educational Facilities Authority Revenue, 5.0 | 5,013,350 |
| 4,000,000 | Illinois Finance Authority Revenue, 5.5%, 8/15/30 | 3,789,280 |
| 2,000,000 | + Illinois Finance Authority Revenue, 5.5%, 8/15/43 | 2,250,120 |
| 2,055,000 | (a) Illinois Finance Authority Revenue, RIB, 11.749%, 8/15 | 2,928,786 |
| | | 21,672,017 |
| | Indiana - 3.1% | |
| 5,000,000 | Indiana Health & Educational Facilities Financing Auth | 4,490,050 |
| 4,135,000 | Indiana State Development Finance Authority Revenue, 5 | 4,170,768 |
| 2,570,000 | Vigo County Hospital Authority Revenue, 5.8%, 9/1/47 (| 2,144,871 |
| | | 10,805,689 |
| | Iowa - 0.9% | |

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| | | | |
|-----------|-----|----------------------------------------------------------|------------|
| 4,000,000 | | Iowa Financing Authority Senior Housing Revenue, 5.625 | 3,215,120 |
| | | Kansas - 0.6% | |
| 750,000 | | Manhattan Health Care Facilities Revenue, 5.125%, 5/15 | 587,197 |
| 2,000,000 | | Manhattan Health Care Facilities Revenue, 5.125%, 5/15 | 1,540,720 |
| | | | 2,127,917 |
| | | Louisiana - 3.5% | |
| 5,000,000 | | Louisiana Public Facilities Authority Revenue, 5.5%, 5 | 4,723,000 |
| 8,335,000 | | Tobacco Settlement Financing Corp., 5.875%, 5/15/39 | 7,553,177 |
| | | | 12,276,177 |
| | | Maryland - 2.1% | |
| 3,000,000 | | Frederick County Educational Facilities Revenue, 5.625 | 2,820,540 |
| 1,000,000 | | Maryland State Economic Development Revenue, Series A, | 945,500 |
| 660,000 | | Maryland State Economic Development Revenue, Series B, | 624,030 |
| 1,000,000 | | Maryland State Economic Development Revenue, 5.0%, 12/ | 745,180 |
| 2,000,000 | + | Maryland State Health & Higher Educational Facilities | 2,194,540 |
| | | | 7,329,790 |
| | | Massachusetts - 7.8% | |
| 8,500,000 | (a) | Lehman Brothers Municipal Trust Receipts, RIB, 7.861%,10 | 333,960 |
| 4,500,000 | | Massachusetts Health & Educational Facilities Authorit | 3,691,530 |
| 2,000,000 | | Massachusetts Health & Educational Facilities Authorit | 2,016,100 |
| 1,550,000 | | Massachusetts Health & Educational Facilities Authorit | 1,514,908 |
| 1,600,000 | | Massachusetts Health & Educational Facilities Authorit | 1,566,048 |
| 2,120,000 | | Massachusetts Health & Educational Facilities Authorit | 2,070,646 |
| 900,000 | | Massachusetts Health & Educational Facilities Authorit | 909,801 |
| 2,750,000 | | Massachusetts Health & Educational Facilities Authorit | 2,793,615 |
| 500,000 | | Massachusetts State Development Finance Agency, 5.5%, | 431,130 |
| 1,100,000 | | Massachusetts State Development Finance Agency, 5.625% | 1,095,908 |
| 1,000,000 | | Massachusetts State Development Finance Agency, 5.7%, | 980,000 |
| | | | 27,403,646 |
| | | Michigan - 3.5% | |
| 5,000,000 | + | Macomb County Hospital Finance Authority Revenue, 5.87 | 5,629,350 |
| 1,550,000 | | Meridian Economic Development Corporate Ltd. Obligatio | 1,399,247 |
| 3,340,000 | | Michigan Public Educational Facilities Authority Reven | 2,866,087 |
| 2,000,000 | | Michigan State Hospital Finance Authority Revenue, 5.2 | 1,692,620 |
| 1,000,000 | | Michigan State Hospital Finance Authority Revenue, 5.5 | 825,860 |
| | | | 12,413,164 |
| | | Minnesota - 1.1% | |
| 2,000,000 | + | Duluth Economic Development Authority Health Care Faci | 2,215,320 |
| 1,500,000 | + | Duluth Economic Development Authority Health Care Faci | 1,661,490 |
| | | | 3,876,810 |
| | | Missouri - 0.5% | |
| 1,720,000 | | Missouri State Health & Educational Authority Health F | 1,591,344 |
| | | Montana - 0.3% | |
| 1,000,000 | | Montana Finance Authority Hospital Facilities Revenue, | 989,820 |
| | | Nevada - 0.4% | |
| 1,500,000 | | Henderson Nevada Health Care Facilities Revenue, 5.625 | 1,515,465 |
| | | New Hampshire - 0.8% | |
| 1,600,000 | + | New Hampshire Business Finance Authority Revenue, 6.05 | 1,668,688 |
| 1,000,000 | | New Hampshire Health & Education Facilities Authority | 1,006,640 |
| | | | 2,675,328 |
| | | New Jersey - 6.4% | |
| 1,250,000 | | Camden County Improvement Authority Revenue, 5.75%, 2/ | 1,203,138 |
| 5,920,000 | (a) | Garden State Preservation Trust, RIB, 12.393%, 11/1/22 | 8,213,467 |
| 710,000 | | New Jersey Economic Development Authority Revenue, 5.7 | 655,138 |
| 1,000,000 | | New Jersey Health Care Facilities Financing Authority | 934,530 |
| 5,000,000 | | New Jersey Health Care Facilities Financing Authority | 4,693,650 |
| 3,500,000 | | New Jersey Health Care Facilities Financing Authority | 3,450,090 |

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| | | |
|-----------|------------------------------------------------------------|------------|
| 3,000,000 | + Tobacco Settlement Financing Corp., 6.25%, 6/1/43 | 3,454,380 |
| | | 22,604,393 |
| | New Mexico - 0.7% | |
| 1,000,000 | Dona Ana County PILT Revenue, 5.25%, 12/1/25 | 969,250 |
| 1,500,000 | Farmington New Mexico Hospital Revenue, 5.0%, 6/1/23 | 1,416,915 |
| | | 2,386,165 |
| | New York - 4.3% | |
| 2,500,000 | Albany Industrial Development Agency Civic Facilities | 2,316,275 |
| 2,000,000 | Dutchess County Industrial Development Agency Revenue, | 2,126,620 |
| 3,255,000 | (a) Lehman Brothers Municipal Trust Receipts, RIB, 9.698%, | 3,329,377 |
| 1,700,000 | Nassau County Industrial Development Agency, 6.7% 1/1/ | 1,681,317 |
| 1,000,000 | New York City Industrial Development Agency, 5.0%, 7/1 | 1,022,790 |
| 1,000,000 | New York City Industrial Development Agency, 5.25%, 7/ | 1,045,380 |
| 1,000,000 | Suffolk County Industrial Development Agency Civic Fac | 806,770 |
| 3,000,000 | Ulster County Industrial Development Agency Civic Faci | 2,884,800 |
| | | 15,213,329 |
| | North Carolina - 0.5% | |
| 1,000,000 | North Carolina Capital Facilities Finance Agency Stude | 907,060 |
| 1,000,000 | North Carolina Capital Facilities Finance Agency Stude | 867,350 |
| | | 1,774,410 |
| | Ohio - 2.3% | |
| 1,500,000 | Cuyahoga County Health Care & Independent Living Facil | 1,316,910 |
| 1,500,000 | Cuyahoga County Health Care & Independent Living Facil | 1,304,880 |
| 1,000,000 | Hamilton County Hospital Facilities Revenue, 5.125%, 5 | 904,910 |
| 3,955,000 | (a) Lehman Brothers Municipal Trust Receipts, RIB, 10.158% | 4,413,622 |
| | | 7,940,322 |
| | Oregon - 0.8% | |
| 2,935,000 | Oregon State Housing & Community Services Department M | 2,935,440 |
| | Pennsylvania - 3.7% | |
| 3,000,000 | Allegheny County Hospital Development Authority Revenu | 2,093,910 |
| 5,000,000 | + Pennsylvania State Turnpike Commission Oil Franchise T | 5,506,400 |
| 1,315,000 | + Sayre Health Care Facilities Authority Revenue, 5.875% | 1,458,151 |
| 685,000 | Sayre Health Care Facilities Authority Revenue, 5.875% | 693,679 |
| 700,000 | Scranton-Lackawanna Health and Welfare Authority Hospi | 698,803 |
| 460,000 | Scranton-Lackawanna Health and Welfare Authority Hospi | 458,376 |
| 2,165,000 | Swarthmore Borough Authority College Revenue, 5.0%, 9/ | 2,178,293 |
| | | 13,087,612 |
| | Puerto Rico - 1.4% | |
| 75,000 | + Puerto Rico Public Buildings Authority Revenue, 5.25%, | 82,205 |
| 4,925,000 | Puerto Rico Public Buildings Authority Revenue, 5.25%, | 4,864,029 |
| | | 4,946,234 |
| | Rhode Island - 1.3% | |
| 1,640,000 | Tobacco Settlement Financing Corp., 6.125%, 6/1/32 | 1,538,615 |
| 3,100,000 | Tobacco Settlement Financing Corp., 6.25%, 6/1/42 | 2,816,598 |
| | | 4,355,213 |
| | South Carolina - 3.8% | |
| 2,000,000 | Berkeley County School District Installment Lease, 5.0 | 1,909,620 |
| 5,000,000 | Florence County Hospital Revenue, 5.25%, 11/1/34 | 5,046,800 |
| 3,500,000 | + Lexington County Health Services District, Inc., Hospi | 3,876,530 |
| 540,000 | + South Carolina Jobs Economic Development Authority Rev | 598,714 |
| 1,960,000 | South Carolina Jobs Economic Development Authority Rev | 1,975,268 |
| | | 13,406,932 |
| | Tennessee - 0.7% | |
| 2,500,000 | Knox County Health Educational & Housing Facilities Bo | 2,559,750 |
| | Texas - 6.1% | |
| 1,552,000 | Houston Housing Financing Corp., 6.25%, 9/20/31 | 1,585,368 |
| 2,750,000 | Lower Colorado River Authority, 5.0%, 5/15/31 | 2,759,955 |
| 5,000,000 | North Texas Tollway Authority Revenue, 5.75%, 1/1/38 | 4,821,300 |
| 1,711,000 | Panhandle Regional Housing Finance Corp., 6.6%, 7/20/3 | 1,777,233 |
| 3,000,000 | Richardson Hospital Authority, 6.0%, 12/1/34 | 2,870,010 |

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|---------------|--------------------------------------------------------|-------------|
| 1,000,000 | Seguin Higher Education Facilities Corp. Revenue, 5.0% | 930,030 |
| 1,500,000 + | Texas State Student Housing Revenue, 6.5%, 9/1/34 | 1,721,730 |
| 2,160,000 | Willacy County Local Government Corp. Revenue, 6.0%, 9 | 2,139,502 |
| 3,000,000 | Willacy County Local Government Corp. Revenue, 6.875% | 2,841,660 |
| | | 21,446,788 |
| | Vermont - 1.4% | |
| 3,750,000 (a) | Lehman Brothers Municipal Trust Receipts, RIB, 11.29% | 3,617,550 |
| 1,295,000 | Vermont Educational & Health Buildings Financing Agenc | 1,192,281 |
| | | 4,809,831 |
| | Virginia - 1.5% | |
| 1,500,000 | Prince William County Industrial Development Hospital | 1,480,035 |
| 3,925,000 | Prince William County Industrial Development Hospital | 3,770,630 |
| | | 5,250,665 |
| | Washington - 2.8% | |
| 3,000,000 | King County Washington Sewer Revenue, 5.0%, 1/1/35 | 2,995,440 |
| 7,000,000 | Tobacco Settlement Authority Revenue, 6.625%, 6/1/32 | 6,896,190 |
| | | 9,891,630 |
| | Wisconsin - 1.0% | |
| 3,500,000 | Wisconsin State Health & Educational Facilities Author | 3,317,650 |
| | TOTAL TAX-EXEMPT OBLIGATIONS | |
| | (Cost \$293,507,915) (b) | 290,482,402 |
| Shares | | |
| | COMMON STOCKS - 39.3% of Net Assets | |
| | Energy - 1.7% | |
| | Oil & Gas Drilling - 0.6% | |
| 19,566 | Diamond Offshore Drilling, Inc. | 2,150,499 |
| | Oil & Gas Storage & Transportation - 1.1% | |
| 142,876 | Spectra Energy Corp. | 3,780,499 |
| | Total Energy | 5,930,998 |
| | Materials - 0.7% | |
| | Diversified Chemicals - 0.7% | |
| 94,000 | Olin Corp. | 2,529,540 |
| | Total Materials | 2,529,540 |
| | Capital Goods - 0.5% | |
| | Aerospace & Defense - 0.5% | |
| 27,334 | Northrop Grumman Corp., 7.0% | 1,881,946 |
| | Total Capital Goods | 1,881,946 |
| | Commercial Services & Supplies - 0.6% | |
| | Commercial Printing - 0.6% | |
| 79,034 | R.R. Donnelley & Sons Co. | 2,203,468 |
| | Total Commercial Services & Supplies | 2,203,468 |
| | Consumer Durables & Apparel - 0.1% | |
| | Home Furnishings - 0.1% | |
| 50,000 | Bassett Furniture Industries, Inc. | 514,000 |
| | Total Consumer Durables & Apparel | 514,000 |
| | Media - 1.0% | |
| | Movies & Entertainment - 1.0% | |
| 206,487 | Regal Entertainment Group | 3,460,722 |
| | Total Media | 3,460,722 |
| | Food, Beverage & Tobacco - 8.3% | |
| | Packaged Foods & Meats - 1.4% | |
| 257,800 | B&G Foods, Inc. | 2,077,868 |
| 92,828 | Kraft Foods, Inc. | 2,925,010 |

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| | | |
|---------|-------------------------------------------------------|-------------|
| | | 5,002,878 |
| | Tobacco - 6.9% | |
| 134,140 | Altria Group, Inc. | 2,820,964 |
| 172,872 | Lorillard, Inc. | 12,488,273 |
| 134,140 | Philip Morris International, Inc. | 7,203,318 |
| 29,704 | Reynolds American, Inc. | 1,573,718 |
| | | 24,086,273 |
| | Total Food, Beverage & Tobacco | 29,089,151 |
| | Pharmaceuticals, Biotechnology & Life Sciences - 4.2% | |
| | Pharmaceuticals - 4.2% | |
| 329,758 | Bristol-Myers Squibb Co. | 7,037,036 |
| 216,536 | Merck & Co., Inc. | 7,723,839 |
| | Total Pharmaceuticals, Biotechnology & Life Sciences | 14,760,875 |
| | Banks - 1.1% | |
| | Regional Banks - 0.5% | |
| 81,550 | KeyCorp | 979,416 |
| 67,800 | Regions Financial Corp. | 628,506 |
| | | 1,607,922 |
| | Thrifths & Mortgage Finance - 0.6% | |
| 222,700 | TrustCo Bank Corp., NY | 2,178,006 |
| | Total Banks | 3,785,928 |
| | Diversified Financials - 2.0% | |
| | Other Diversified Financial Services - 0.4% | |
| 42,500 | Bank of America Corp. | 1,323,450 |
| | Investment Banking & Brokerage - 1.6% | |
| 134,161 | Lazard, Ltd., 6.625% | 5,687,085 |
| | Total Diversified Financials | 7,010,535 |
| | Telecommunication Services - 10.5% | |
| | Integrated Telecommunication Services - 10.5% | |
| 187,900 | AT&T, Inc. | 6,010,921 |
| 7,670 | FairPoint Communications, Inc. | 67,880 |
| 529,946 | Frontier Communications Corp. | 6,661,421 |
| 406,745 | Verizon Communications, Inc. | 14,284,884 |
| 790,184 | Windstream Corp. | 9,814,085 |
| | Total Telecommunication Services | 36,839,191 |
| | Utilities - 8.6% | |
| | Electric Utilities - 2.2% | |
| 285,753 | Duke Energy Corp. | 4,983,532 |
| 138,400 | Empire District Electric Co. | 2,920,240 |
| | | 7,903,772 |
| | Gas Utilities - 3.9% | |
| 81,249 | AGL Resources, Inc. | 2,686,092 |
| 395,466 | Atmos Energy Corp. | 10,891,134 |
| | | 13,577,226 |
| | Multi-Utilities - 2.5% | |
| 100,000 | Consolidated Edison, Inc. | 4,090,000 |
| 134,112 | NSTAR | 4,538,350 |
| | | 8,628,350 |
| | Total Utilities | 30,109,348 |
| | TOTAL COMMON STOCKS | |
| | (Cost \$131,149,283) | 138,115,702 |
| | NON-CONVERTIBLE PREFERRED STOCKS - 3.8% of Net Assets | |
| | Banks - 1.0% | |
| | Diversified Banks - 1.0% | |

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|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 150,000 | JPMorgan Chase Capital Trust XVI, 6.35% | 3,420,000 |
| | Total Banks | 3,420,000 |
| | Diversified Financials - 0.6% | |
| | Other Diversified Financial Services - 0.6% | |
| 37,300 | JPMorgan Chase & Co. Series F, 5.72% | 1,445,748 |
| 13,700 | JPMorgan Chase & Co. Series G, 5.49% | 503,612 |
| | Total Diversified Financials | 1,949,360 |
| | Insurance - 0.0% | |
| | Life & Health Insurance - 0.0% | |
| 72,550 | Scottish Re Group, Ltd., 7.25% | 148,728 |
| | Total Insurance | 148,728 |
| | Real Estate - 0.3% | |
| | Retail Real Estate Investment Trust - 0.3% | |
| 53,500 | Regency Centers Corp., Series E, 6.7% | 1,102,100 |
| | Total Real Estate | 1,102,100 |
| | Utilities - 1.9% | |
| | Electric Utilities - 1.9% | |
| 58,400 | Alabama Power Co., 5.3% | 1,284,800 |
| 57,000 | Alabama Power Co., 5.83% | 1,311,000 |
| 78,000 | Interstate Power and Light Co., Series B, 8.375% | 2,147,340 |
| 7,700 | PPL Electric Utilities Corp., 4.5% | 612,920 |
| 73,000 | Southern California Edison Co., 4.32% | 1,365,100 |
| | Total Utilities | 6,721,160 |
| | TOTAL NON-CONVERTIBLE PREFERRED STOCKS (Cost \$17,039,149) | 13,341,348 |
| | CONVERTIBLE PREFERRED STOCKS - 0.9% of Net Assets | |
| | Commercial Services & Supplies - 0.8% | |
| | Office Services & Supplies - 0.8% | |
| 60,000 | Avery Dennison Corp., 7.875% | 2,821,200 |
| | Total Commercial Services & Supplies | 2,821,200 |
| | Insurance - 0.1% | |
| | Property & Casualty Insurance - 0.1% | |
| 47,919 | XL Capital, Ltd., Class A, 7.0% | 396,769 |
| | Total Insurance | 396,769 |
| | TOTAL CONVERTIBLE PREFERRED STOCKS (Cost \$4,203,881) | 3,217,969 |
| | TAX-EXEMPT MONEY MARKET MUTUAL FUND - 9.4% of Net Assets | |
| 33,005,000 | BlackRock Liquidity Funds MuniFund Portfolio | 33,005,000 |
| | TOTAL TAX-EXEMPT MONEY MARKET MUTUAL FUND (Cost \$33,005,000) | 33,005,000 |
| | TOTAL INVESTMENTS IN SECURITIES - 136.1% (Cost \$478,905,228) (c) | 478,162,421 |
| | OTHER ASSETS AND LIABILITIES 14.1% | 49,502,647 |
| | PREFERRED SHARES AT REDEMPTION VALUE, INCLUDING DIVIDENDS PAYABLE - (50.2%) | (176,340,209) |
| | NET ASSETS APPLICABLE TO COMMON SHAREOWNERS - 100.0% | 351,324,859 |
| RIB | Residual Interest Bonds | |
| (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 August 31, 2008, the value of | |

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these securities amounted \$41,809,873, or 11.9% of total net assets.

+ Prerefunded bonds have been collateralized by U.S. Treasury securities or U.S. Government Agencies, 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.

(a) The interest rate is subject to change periodically and inversely based upon prevailing market rates. The interest rate shown is the coupon rate at August 31, 2008.

(b) The concentration of tax-exempt investments by type of obligation/market sector is as follows:

| | |
|-------------------------|--------|
| Insured: | |
| FSA | 8.2% |
| Radian | 2.8 |
| MBIA | 1.7 |
| FGIC | 1.2 |
| AMBAC | 0.9 |
| | 14.8% |
| General Obligation | 4.0 |
| Revenue Bonds: | |
| Health Revenue | 30.4 |
| Tobacco Revenue | 15.1 |
| Other Revenue | 10.2 |
| Development Revenue | 9.2 |
| Education Revenue | 7.2 |
| Facilities Revenue | 3.0 |
| Housing Revenue | 2.9 |
| Transportation Revenue | 1.5 |
| Gaming Revenue | 1.1 |
| Other Revenue | 0.0 |
| School District Revenue | 0.6 |
| | 100.0% |

(c) At August 31, 2008, the net unrealized loss on investments based on cost for federal income tax purposes of \$478,645,019 was as follows:

| | |
|------------------------------------------------------------------------------------------------------|--------------|
| Aggregate gross unrealized gain for all investments in which there is an excess of value over tax c | \$27,515,009 |
| Aggregate gross unrealized loss for all investments in which there is an excess of tax cost over val | (27,997,607) |
| Net unrealized loss | \$(482,598) |

For financial reporting purposes net unrealized loss on investments was \$742,807 and cost of investments aggregated \$478,905,228.

Various inputs are used in determining the value of the Fund's investments. These inputs are summarized in the three broad levels listed below.

Highest priority is given to Level 1 inputs and lowest priority is given to Level 3.

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,

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credit risk, etc.)

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

The following is a summary of the inputs used as of August 31, 2008, in valuing the Fund's assets:

| Valuation Inputs | Investments in Securities | Other Financial Instruments |
|-----------------------------------------------|------------------------------|--------------------------------|
| Level 1 - Quoted Prices | \$154,675,019 | \$ - |
| Level 2 - Other Significant Observable Inputs | 323,487,402 | (942,512) |
| Level 3 - Significant Unobservable Inputs | - | - |
| Total | \$478,162,421 | \$(942,512) |

ITEM 2. CONTROLS AND PROCEDURES.

(a) Disclose the conclusions of the registrant's principal executive officer or officers and principal financial officer or officers, or persons performing similar functions, about the effectiveness of the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Act (17 CFR 270.30a-3(c))) as of a date within 90 days of the filing date of the report that includes the disclosure required by this paragraph, based on their evaluation of these controls and procedures required by Rule 30a-3(b) under the Act (17 CFR 270.30a-3(b)) and Rule 13a-15(b) or 15d-15(b) under the Exchange Act (17 CFR 240.13a-15(b) or 240.15d-15(b)).

The registrant's principal executive officer and principal financial officer have concluded that the registrant's disclosure controls and procedures are effective based on their evaluation of these controls and procedures as of a date within 90 days of the filing date of this report.

(b) Disclose any change in the registrant's internal controls over financial reporting (as defined in Rule 30a-3(d) under the Act (17 CFR 270.30a-3(d))) that occurred during the registrant's last fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.

There were no significant changes in the registrant's internal control over financial reporting that occurred during the second fiscal quarter of the period covered by this report that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

ITEM 3. EXHIBITS.

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

Filed herewith.

SIGNATURES

[See General Instruction F]

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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 and Equity Income Trust

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

Date October 29, 2008

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

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

Date October 29, 2008

By (Signature and Title)* /s/ Mark Bradley
Mark Bradley, Treasurer

Date October 29, 2008

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