

BLACKROCK MUNIASSETS FUND, INC.

Form N-Q

September 26, 2016

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED

MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number: 811-07642

Name of Fund: BlackRock MuniAssets Fund, Inc. (MUA)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: John M. Perlowski, Chief Executive Officer, BlackRock MuniAssets Fund, Inc., 55 East 52nd Street, New York, NY 10055

Registrant's telephone number, including area code: (800) 882-0052, Option 4

Date of fiscal year end: 04/30/2017

Date of reporting period: 07/31/2016

Item 1 Schedule of Investments

Schedule of Investments July 31, 2016 (Unaudited)

BlackRock MuniAssets Fund, Inc. (MUA)

(Percentages shown are based on Net Assets)

	Par (000)	Value
Municipal Bonds		
Alabama 2.1%		
County of Jefferson Alabama, RB, Limited Obligation School, Series A:		
5.25%, 1/01/17	\$ 895	\$ 906,196
5.25%, 1/01/19	2,000	2,011,660
5.50%, 1/01/21	1,215	1,222,084
County of Jefferson Alabama Sewer, Refunding RB, Sub-Lien, Series D, 6.00%, 10/01/42	3,745	4,542,123
State of Alabama Docks Department, Refunding RB, 6.00%, 10/01/40	2,165	2,580,529
		11,262,592
Alaska 0.5%		
Northern Tobacco Securitization Corp., Refunding RB, Tobacco Settlement, Asset-Backed, Series A:		
4.63%, 6/01/23	1,080	1,097,291
5.00%, 6/01/32	1,500	1,472,550
		2,569,841
Arizona 1.5%		
City of Phoenix Arizona IDA, RB:		
Great Hearts Academies Veritas Project, 6.30%, 7/01/42	500	558,520
Great Hearts Academies Veritas Project, 6.40%, 7/01/47	425	475,805
Legacy Traditional Schools Project, Series A, 6.50%, 7/01/34 (a)	570	678,710
Legacy Traditional Schools Project, Series A, 6.75%, 7/01/44 (a)	1,000	1,208,510
City of Phoenix Arizona IDA, Refunding RB (a):		
Basis Schools, Inc. Projects, 5.00%, 7/01/35	305	333,676
Basis Schools, Inc. Projects, 5.00%, 7/01/45	855	925,939
Basis Schools, Inc. Projects, Series A, 5.00%, 7/01/35	260	284,445
Basis Schools, Inc. Projects, Series A, 5.00%, 7/01/46	290	313,835
Legacy Traditional School Projects, 5.00%, 7/01/35	320	345,050
Legacy Traditional School Projects, 5.00%, 7/01/45	255	272,980
Salt Verde Financial Corp., RB, Senior, 5.00%, 12/01/37	1,650	2,118,584
	Par (000)	Value
Municipal Bonds		
Arizona (continued)		
University Medical Center Corp., RB, 6.50%, 7/01/19 (b)	\$ 500	\$ 582,310
		8,098,364
California 7.8%		
California Municipal Finance Authority, RB, Urban Discovery Academy Project (a):		
5.50%, 8/01/34	315	338,386
6.00%, 8/01/44	665	720,281
6.13%, 8/01/49	580	629,149
California School Finance Authority, RB:		
Alliance for College Ready Public School 2023 Union LLC Project, Series A, 6.40%, 7/01/48	1,570	1,906,859
Value Schools, 6.65%, 7/01/33	435	508,180
Value Schools, 6.90%, 7/01/43	975	1,150,783
California Statewide Communities Development Authority, RB, Loma Linda University Medical Center, Series A (a):		
5.00%, 12/01/41	690	793,466
5.00%, 12/01/46	920	1,053,777
5.25%, 12/01/56	2,760	3,208,914
California Statewide Communities Development Authority, Refunding RB, American Baptist Homes of the West, 6.25%, 10/01/39	2,175	2,501,881
California Statewide Financing Authority, RB, Asset-Backed, Tobacco Settlement, Series B, 6.00%, 5/01/43	1,650	1,663,150
City of San Jose California Hotel Tax, RB, Convention Center Expansion & Renovation Project:		
6.50%, 5/01/36	900	1,096,839
6.50%, 5/01/42	2,220	2,699,853
City of Stockton California Public Financing Authority, RB, Delta Water Supply Project, Series A, 6.25%, 10/01/40	375	473,685
County of California Tobacco Securitization Agency, RB, Asset-Backed, Los Angeles County Securitization Corp.:		

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5.60%, 6/01/36	1,285	1,306,254
5.70%, 6/01/46	3,600	3,659,616

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2016

1

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
California (continued)		
County of Riverside California Transportation Commission, RB, Senior Lien, Series A, 5.75%, 6/01/48	\$ 2,885	\$ 3,435,083
Golden State Tobacco Securitization Corp., Refunding RB, Asset-Backed, Series A-1:		
Bonds, 5.13%, 6/01/47	3,850	3,849,730
Senior, 5.75%, 6/01/47	3,980	4,059,600
Tobacco Securitization Authority of Southern California, Refunding RB, Tobacco Settlement, Asset-Backed, Senior Series A-1:		
4.75%, 6/01/25	1,375	1,397,014
5.00%, 6/01/37	4,580	4,580,229
		41,032,729
Colorado 2.1%		
Castle Oaks Metropolitan District No. 3, GO, 6.25%, 12/01/44	500	539,650
Colorado Health Facilities Authority, Refunding RB, Series A (a):		
6.13%, 12/01/45	335	354,618
6.25%, 12/01/50	1,115	1,177,841
Copperleaf Metropolitan District No. 2, GO, Refunding, 5.75%, 12/01/45	720	771,602
Foothills Metropolitan District, Special Assessment Bonds, 6.00%, 12/01/38	5,985	6,575,600
Regional Transportation District, RB, Denver Transit Partners Eagle P3 Project, 6.00%, 1/15/34	1,500	1,741,050
		11,160,361
Connecticut 0.9%		
Mohegan Tribal Finance Authority, RB, 7.00%, 2/01/45 (a)	1,430	1,448,347
Mohegan Tribe of Indians of Connecticut, RB, Series A, 6.75%, 2/01/45 (a)	1,420	1,469,956
Mohegan Tribe of Indians of Connecticut, Refunding RB, Public Improvement, Priority Distribution, Series C, 6.25%, 2/01/30 (a)	1,835	1,895,628
		4,813,931
Municipal Bonds		
Delaware 0.7%		
County of Sussex Delaware, RB, NRG Energy, Inc., Indian River Power LLC Project, 6.00%, 10/01/40	\$ 1,000	\$ 1,126,170
State of Delaware EDA, RB, Exempt Facilities, Indian River Power LLC Project, 5.38%, 10/01/45	2,280	2,500,157
		3,626,327
Florida 8.1%		
Boggy Creek Improvement District, Refunding RB, Special Assessment Bonds, 5.13%, 5/01/43	1,535	1,634,376
Capital Trust Agency, Inc., RB, Silver Creek St. Augustine Project, Series A:		
1st Mortgage, 8.25%, 1/01/44 (c)(d)	515	455,554
1st Mortgage, 8.25%, 1/01/49 (c)(d)	1,105	978,356
5.75%, 1/01/50	655	655,151
County of Collier Florida IDA, Refunding RB, Arlington of Naples Project, Series A, 8.13%, 5/15/44 (a)	2,510	3,031,653
County of Palm Beach Florida Health Facilities Authority, RB, Acts Retirement Life Community, 5.50%, 11/15/20 (b)	3,500	4,179,140
Florida Development Finance Corp., RB, Renaissance Charter School, Series A:		
5.75%, 6/15/29	690	725,149
6.00%, 6/15/34	835	881,535
6.13%, 6/15/44	3,220	3,382,707
Greenway Improvement District, RB, Special Assessment Bonds, 5.13%, 5/01/43	1,940	2,065,596
Harbor Bay Community Development District Florida, Special Assessment Bonds, Series A, 7.00%, 5/01/33	410	411,562

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Florida (continued)		
Jacksonville Economic Development Commission, Refunding RB, Florida Proton Therapy Institute, Series A, 6.00%, 9/01/17 (a)	\$ 535	\$ 562,510
Lakewood Ranch Stewardship District, Refunding, Special Assessment Bonds, Lakewood Center & New Sector Projects, 8.00%, 5/01/40	1,485	1,840,702
Lakewood Ranch Stewardship District, Special Assessment Bonds, Village of Lakewood Ranch Sector Projects:		
4.00%, 5/01/21	200	206,730
4.25%, 5/01/26	160	166,744
5.00%, 5/01/36	460	484,283
5.13%, 5/01/46	915	967,914
Mid-Bay Bridge Authority, RB, Springing Lien, Series A, 7.25%, 10/01/21 (b)	4,550	5,955,722
Midtown Miami Community Development District, Refunding, Special Assessment Bonds:		
Series A, 5.00%, 5/01/37	845	913,234
Series B, 5.00%, 5/01/37	495	534,971
Palm Beach County Health Facilities Authority, Refunding RB, Series A, 7.25%, 6/01/34	500	614,295
Santa Rosa Bay Bridge Authority, RB, 6.25%, 7/01/28 (c)(d)	4,264	2,142,499
Tampa Palms Open Space and Transportation Community Development District, RB, Capital Improvement, Richmond Place Project, 7.50%, 5/01/18	575	576,023
Tolomato Community Development District, Refunding, Special Assessment Bonds:		
Convertible CAB, Series A2, 0.00%, 5/01/39 (e)	250	202,285
Convertible CAB, Series A3, 0.00%, 5/01/40 (e)	585	354,106
Convertible CAB, Series A4, 0.00%, 5/01/40 (e)	305	136,979
Series 2, 0.00%, 5/01/40 (e)	805	427,173
Series A1, 6.65%, 5/01/40	910	919,801
Tolomato Community Development District:		
Series 1, 0.00%, 5/01/40 (e)	1,305	817,126
Series 1, 6.65%, 5/01/40 (c)(d)	50	51,189
	Par (000)	Value
Municipal Bonds		
Florida (continued)		
Tolomato Community Development District (continued):		
Series 3, 6.61%, 5/01/40 (c)(d)	\$ 875	\$ 9
Series 3, 6.65%, 5/01/40 (c)(d)	710	7
Village Community Development District No. 9, Special Assessment Bonds:		
6.75%, 5/01/31	1,600	1,950,384
7.00%, 5/01/41	2,615	3,200,812
5.50%, 5/01/42	1,220	1,416,432
		42,842,709
Georgia 1.6%		
County of Clayton Georgia, Tax Allocation Bonds, Ellenwood Project, 7.50%, 7/01/33	2,575	2,674,009
County of Clayton Georgia Development Authority, Refunding RB, Delta Air Lines, Inc. Project, Series A, 8.75%, 6/01/29	3,365	4,142,180
County of Gainesville & Hall Georgia Development Authority, Refunding RB, Acts Retirement Life Community, Series A-2 (b):		
6.38%, 11/15/19	700	827,694
6.63%, 11/15/19	880	1,047,675
		8,691,558
Guam 0.4%		
Territory of Guam, GO, Series A:		
6.00%, 11/15/19	505	559,273
7.00%, 11/15/19 (b)	1,115	1,341,434
		1,900,707
Illinois 5.0%		
City of Chicago Illinois, GO, Series A, 5.50%, 1/01/39	3,600	3,727,332
Illinois Finance Authority, Refunding RB:		
Friendship Village of Schaumburg, 7.25%, 2/15/45	4,000	4,325,280
Lutheran Home & Services Obligated Group, 5.63%, 5/15/42	2,395	2,600,156
Presence Health Network, Series C, 5.00%, 2/15/36 (f)	225	256,558

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2016

3

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Illinois (continued)		
Illinois Finance Authority, Refunding RB (continued):		
Presence Health Network, Series C, 4.00%, 2/15/41 (f)	\$ 1,525	\$ 1,528,889
Primary Health Care Centers Program, 6.60%, 7/01/24	990	997,603
Rogers Park Montessori School Project, Series 2014, 6.00%, 2/01/34	365	396,883
Rogers Park Montessori School Project, Series 2014, 6.13%, 2/01/45	860	932,799
Roosevelt University Project, 6.50%, 4/01/44	4,170	4,611,895
Metropolitan Pier & Exposition Authority, RB, McCormick Place Expansion Project, Series A, 5.50%, 6/15/53	2,370	2,783,209
Railsplitter Tobacco Settlement Authority, RB:		
5.50%, 6/01/23	180	212,031
6.00%, 6/01/28	710	851,404
Village of Lincolnshire Illinois, Special Tax Bonds, Sedgebrook Project, 6.25%, 3/01/34	1,730	1,732,975
Village of Wheeling Illinois, Tax Allocation Bonds, North Milwaukee/Lake-Cook TIF Project, 6.00%, 1/01/25	1,260	1,261,134
		26,218,148
Indiana 1.6%		
City of Valparaiso Indiana, RB, Exempt Facilities, Pratt Paper LLC Project, AMT:		
6.75%, 1/01/34	825	1,021,408
7.00%, 1/01/44	2,000	2,503,160
City of Vincennes Indiana, Refunding RB, Southwest Indiana Regional Youth Village Project, 6.25%, 1/01/29 (a)	2,510	2,532,741
Indiana Finance Authority, RB, Private Activity Bond, Ohio River Bridges East End Crossing Project, Series A, AMT:		
5.00%, 7/01/44	470	528,350
	Par (000)	Value
Municipal Bonds		
Indiana (continued)		
Indiana Finance Authority, RB, Private Activity Bond, Ohio River Bridges East End Crossing Project, Series A, AMT (continued):		
5.00%, 7/01/48	\$ 1,555	\$ 1,737,759
		8,323,418
Iowa 2.7%		
Iowa Finance Authority, Refunding RB:		
Midwestern Disaster Area, Iowa Fertilizer Co. Project, 5.50%, 12/01/22	2,090	2,173,391
Midwestern Disaster Area, Iowa Fertilizer Co. Project, 5.25%, 12/01/25	2,190	2,362,485
Sunrise Retirement Community Project, 5.50%, 9/01/37	1,355	1,411,178
Sunrise Retirement Community Project, 5.75%, 9/01/43	2,115	2,217,345
Iowa Tobacco Settlement Authority, Refunding RB:		
Asset-Backed, CAB, Series B, 5.60%, 6/01/34	1,200	1,209,660
Series C, 5.38%, 6/01/38	4,900	4,900,196
		14,274,255
Kentucky 1.1%		
Kentucky Economic Development Finance Authority, Refunding RB, Baptist Life Communities Project, Series S:		
6.25%, 11/15/46	635	651,897
6.38%, 11/15/51	620	637,931
Kentucky Public Transportation Infrastructure Authority, RB, Downtown Crossing, First Tier, Series A, 5.75%, 7/01/49	4,000	4,768,280
		6,058,108
Louisiana 2.8%		
Juban Crossing Economic Development District, Refunding RB, General Infrastructure Project, Series C, 7.00%, 9/15/44 (a)		
	1,055	1,139,147

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Louisiana (continued)		
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp. Project, 6.75%, 11/01/32	\$ 5,000	\$ 5,351,300
Louisiana Public Facilities Authority, RB, Belle Chasse Educational Foundation Project, 6.75%, 5/01/41	1,855	2,140,596
Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, Series A, 5.25%, 5/15/35	5,570	6,406,892
		15,037,935
Maine 0.6%		
Maine Health & Higher Educational Facilities Authority, RB, Maine General Medical Center, 6.75%, 7/01/41	2,955	3,378,511
Maryland 2.0%		
County of Frederick Maryland, RB, Jefferson Technology Park Project, Series B, 7.13%, 7/01/43	2,840	3,267,960
Maryland EDC, RB, Transportation Facilities Project, Series A, 5.75%, 6/01/35	3,615	4,050,824
Maryland EDC, Refunding RB, CNX Marine Terminals, Inc., 5.75%, 9/01/25	3,085	3,065,441
		10,384,225
Massachusetts 1.6%		
Massachusetts Development Finance Agency, RB:		
Boston Medical Center, Series D, 4.00%, 7/01/45	1,000	1,064,850
Boston Medical Center, Series D, 5.00%, 7/01/44	1,905	2,215,839
Foxborough Regional Charter School, Series A, 7.00%, 7/01/42	1,025	1,174,384
North Hill Communities Issue, Series A, 6.50%, 11/15/43 (a)	2,020	2,233,251
	Par (000)	Value
Municipal Bonds		
Massachusetts (continued)		
Massachusetts Development Finance Agency, Refunding RB, Tufts Medical Center, Series I, 6.75%, 1/01/36	\$ 1,490	\$ 1,784,588
		8,472,912
Michigan 0.9%		
City of Detroit Michigan Sewage Disposal System, Refunding RB, Senior Lien, Series A, 5.25%, 7/01/39	2,785	3,192,557
Michigan Finance Authority, RB, Detroit Water & Sewage Disposal System, Senior Lien, Series 2014 C-2, AMT, 5.00%, 7/01/44	415	457,351
Michigan Finance Authority, Refunding RB, Detroit Water & Sewage Department Project, Senior Lien, Series C-1, 5.00%, 7/01/44	920	1,036,683
		4,686,591
Minnesota 0.3%		
City of Rochester Minnesota, RB, Health Care And Facility Homestead Rochester Incorporate, 5.00%, 12/01/49	1,335	1,435,979
Missouri 1.0%		
Kirkwood IDA Missouri, RB, Aberdeen Heights, Series A, 8.25%, 5/15/39	2,315	2,628,729
Lees Summit Industrial Development Authority, RB, John Knox Obligated Group, 5.25%, 8/15/39	2,235	2,560,393
		5,189,122
New Jersey 4.6%		
Casino Reinvestment Development Authority, Refunding RB:		
5.25%, 11/01/39	1,065	1,136,142
5.25%, 11/01/44	770	818,133
County of Essex New Jersey Improvement Authority, RB, AMT, 5.25%, 7/01/45 (a)	1,150	1,202,946
New Jersey EDA, RB:		
Goethals Bridge Replacement Project, Private Activity Bond, AMT, 5.38%, 1/01/43	2,155	2,507,256
Kapkowski Road Landfill Project, Series B, AMT, 6.50%, 4/01/31	2,250	2,775,150

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
New Jersey (continued)		
New Jersey EDA, RB (continued):		
Team Academy Charter School Project, 6.00%, 10/01/43	\$ 1,530	\$ 1,781,119
New Jersey EDA, Refunding RB, Greater Brunswick Charter School, Inc. Project, Series A, 6.00%, 8/01/49 (a)	500	533,815
New Jersey Health Care Facilities Financing Authority, Refunding RB:		
St. Barnabas Health Care System, Series A, 5.63%, 7/01/37	2,650	3,110,358
St. Joseph's Healthcare System, 6.63%, 7/01/38	4,090	4,474,992
New Jersey Transportation Trust Fund Authority, RB, Transportation Program, Series AA, 5.25%, 6/15/41	1,140	1,293,854
Tobacco Settlement Financing Corp., Refunding RB, Series 1A:		
5.00%, 6/01/29	3,735	3,774,180
5.00%, 6/01/41	1,070	1,051,254
		24,459,199
New Mexico 0.6%		
New Mexico Hospital Equipment Loan Council, Refunding RB, Gerald Champion Regional Medical Center Project, 5.50%, 7/01/42	2,970	3,342,616
New York 9.2%		
City of New York New York Industrial Development Agency, ARB, American Airlines, Inc., JFK International Airport Project, AMT, 8.00%, 8/01/28 (g)		
	1,765	1,783,109
City of New York New York Industrial Development Agency, RB, Special Needs Facilities Pooled Program, Series C-1:		
6.50%, 7/01/24	610	611,452
6.63%, 7/01/29	1,100	1,102,728
Counties of New York Tobacco Trust IV, Refunding RB, Settlement Pass-Through Turbo, Series A:		
6.25%, 6/01/41 (a)	5,300	5,610,421
5.00%, 6/01/42	3,155	3,154,874
5.00%, 6/01/45	1,185	1,184,917
	Par (000)	Value
Municipal Bonds		
New York (continued)		
County of Dutchess New York IDA, Refunding RB, Bard College Civic Facility, Series A-1, 5.00%, 8/01/46	\$ 3,315	\$ 3,254,335
County of Nassau New York Tobacco Settlement Corp., Refunding RB, Asset-Backed, Series A-3, 5.13%, 6/01/46	1,170	1,153,901
County of Westchester New York Healthcare Corp., RB, Senior Lien, Series A, 5.00%, 11/01/44	1,354	1,576,791
Erie Tobacco Asset Securitization Corp., Refunding RB, Asset-Backed, Series A, 5.00%, 6/01/45	2,890	2,890,144
Metropolitan Transportation Authority, RB, Series C:		
6.50%, 11/15/18 (b)	1,490	1,687,723
6.50%, 11/15/28	510	577,754
New York Liberty Development Corp., Refunding RB:		
2nd Priority, Bank of America Tower at One Bryant Park Project, Class 3, 6.38%, 7/15/49	1,270	1,444,396
3 World Trade Center Project, Class 1, 5.00%, 11/15/44 (a)	4,705	5,394,941
3 World Trade Center Project, Class 2, 5.15%, 11/15/34 (a)	455	511,757
3 World Trade Center Project, Class 2, 5.38%, 11/15/40 (a)	1,080	1,258,438
3 World Trade Center Project, Class 3, 7.25%, 11/15/44 (a)	1,565	2,058,178
New York Transportation Development Corp., RB, Laguardia Airport Terminal B Redevelopment Project, Series A (AMT), 5.00%, 7/01/41	630	722,068
New York Transportation Development Corp., Refunding RB, American Airlines, Inc., AMT:		
5.00%, 8/01/26	1,065	1,182,651
5.00%, 8/01/31	1,195	1,308,812
Niagara Area Development Corp., Refunding RB, Solid Waste Disposal Facility, Covanta Energy Project, Series A, AMT, 5.25%, 11/01/42 (a)	1,335	1,365,531

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
New York (continued)		
Port Authority of New York & New Jersey, ARB, Special Project, JFK International Air Terminal LLC Project, Series 8, 6.00%, 12/01/36	\$ 1,340	\$ 1,580,785
TSASC, Inc., Refunding RB, Series 1, 5.00%, 6/01/34	2,305	2,305,023
Westchester Tobacco Asset Securitization, Refunding RB, 5.13%, 6/01/45	4,800	4,799,568
		48,520,297
North Carolina 1.5%		
North Carolina Medical Care Commission, Refunding RB, 1st Mortgage, Series A:		
Deerfield Project, 6.13%, 11/01/18 (b)	4,565	4,995,069
Retirement Facilities Whitestone Project, 7.75%, 3/01/31	1,000	1,158,240
Retirement Facilities Whitestone Project, 7.75%, 3/01/41	1,420	1,642,769
		7,796,078
Ohio 3.0%		
Buckeye Tobacco Settlement Financing Authority, RB, Asset-Backed, Series A-2:		
Senior Turbo Term, 5.88%, 6/01/47	6,390	6,341,692
5.75%, 6/01/34	6,745	6,677,685
6.00%, 6/01/42	3,040	3,039,726
		16,059,103
Oklahoma 0.3%		
Oklahoma Development Finance Authority, Refunding RB, Inverness Village Community, 6.00%, 1/01/32	1,305	1,415,168
Oregon 0.8%		
Hospital Facilities Authority of Multnomah County Oregon, Refunding RB, Mirabella at South Waterfront, 5.50%, 10/01/49		
	1,765	1,972,935
Polk County Hospital Facility Authority, RB, Dallas Retirement Village Project, Series A:		
5.13%, 7/01/35	620	651,682
	Par (000)	Value
Municipal Bonds		
Oregon (continued)		
Polk County Hospital Facility Authority, RB, Dallas Retirement Village Project, Series A (continued):		
5.38%, 7/01/45	\$ 1,435	\$ 1,518,273
		4,142,890
Pennsylvania 3.8%		
Allentown Neighborhood Improvement Zone Development Authority, Refunding RB, Series A, 5.00%, 5/01/42		
	2,140	2,335,040
City of Philadelphia Pennsylvania Hospitals & Higher Education Facilities Authority, RB, Temple University Health System, Series A, 5.63%, 7/01/36		
	2,000	2,252,820
County of Cumberland Pennsylvania Municipal Authority, Refunding RB, Diakon Lutheran:		
6.38%, 1/01/19 (b)	5,550	6,305,133
6.38%, 1/01/39	615	693,431
County of Lancaster Pennsylvania Hospital Authority, Refunding RB, Brethren Village Project, Series A, 6.25%, 7/01/26		
	1,160	1,192,178
County of Lehigh Pennsylvania General Purpose Authority, Refunding RB, Bible Fellowship Church Homes, 5.13%, 7/01/32		
	1,800	1,933,758
County of Northampton Pennsylvania IDA, Route 33 Project, Tax Allocation Bond, 7.00%, 7/01/32		
	2,110	2,351,785
Pennsylvania Economic Development Financing Authority, Refunding RB, National Gypsum Co., AMT, 5.50%, 11/01/44		
	2,710	3,050,024
		20,114,169
Puerto Rico 0.6%		
Children s Trust Fund, Refunding RB, Tobacco Settlement, Asset-Backed Bonds, Series A, 0.00%, 5/15/50 (h)		
	3,450	311,880
Commonwealth of Puerto Rico, GO, Refunding, Series A, 8.00%, 7/01/35 (c)(d)		
	1,765	1,157,187

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BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2016

7

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Puerto Rico (continued)		
Commonwealth of Puerto Rico Aqueduct & Sewer Authority, RB, Senior Lien, Series A, 6.00%, 7/01/44	\$ 1,060	\$ 764,589
Commonwealth of Puerto Rico Aqueduct & Sewer Authority, Refunding RB, Senior Lien, Series A:		
6.13%, 7/01/24	365	268,300
6.00%, 7/01/38	1,150	830,990
		3,332,946
Rhode Island 2.1%		
Central Falls Detention Facility Corp., Refunding RB, 7.25%, 7/15/35 (c)(d)	4,190	1,040,293
Tobacco Settlement Financing Corp., Refunding RB:		
Series A, 5.00%, 6/01/40	980	1,090,887
Series B, 4.50%, 6/01/45	5,055	5,404,503
Series B, 5.00%, 6/01/50	3,330	3,568,028
		11,103,711
Texas 10.6%		
Brazos River Authority, Refunding RB, Texas Utility Co., Series A, AMT, 7.70%, 4/01/33 (c)(d)	5,080	86,157
Central Texas Regional Mobility Authority, Refunding RB:		
CAB, 0.00%, 1/01/28 (h)	1,000	686,530
CAB, 0.00%, 1/01/29 (h)	2,000	1,320,500
CAB, 0.00%, 1/01/30 (h)	1,170	746,109
CAB, 0.00%, 1/01/33 (h)	3,690	2,086,437
CAB, 0.00%, 1/01/34 (h)	4,000	2,158,560
Senior Lien, 6.25%, 1/01/21 (b)	2,210	2,721,438
City of Houston Texas Airport System, Refunding ARB, AMT:		
Special Facilities, Continental Airlines, Inc., Series A, 6.63%, 7/15/38	2,890	3,372,428
United Airlines, Inc. Terminal E Project, 5.00%, 7/01/29	910	1,029,237
Clifton Higher Education Finance Corp., ERB, Idea Public Schools:		
5.50%, 8/15/31	955	1,068,826
5.75%, 8/15/41	720	814,918
County of Bexar Texas Health Facilities Development Corp., RB, Army Retirement Residence Project, 6.20%, 7/01/45	5,040	5,771,002
	Par (000)	Value
Municipal Bonds		
Texas (continued)		
County of Harris Texas Cultural Education Facilities Finance Corp., RB, 1st Mortgage, Brazos Presbyterian Homes, Inc. Project, Series B, 7.00%, 1/01/48	\$ 475	\$ 567,843
County of Matagorda Texas Navigation District No. 1, Refunding RB, Central Power & Light Co., Project, Series A, 6.30%, 11/01/29	2,090	2,377,250
County of Tarrant Texas Cultural Education Facilities Finance Corp., RB, Series A:		
CC Young Memorial Home, 8.00%, 2/15/38	1,745	1,965,498
Senior Living Center Project, 8.25%, 11/15/44	4,200	4,472,958
County of Tarrant Texas Cultural Education Facilities Finance Corp., Refunding RB, Trinity Terrace Project, 5.00%, 10/01/49	865	977,035
County of Travis Texas Health Facilities Development Corp., Refunding RB, 7.13%, 1/01/46	3,080	3,515,358
Mesquite Health Facility Development Corp., Refunding RB, 5.13%, 2/15/42	810	903,992
Mission Economic Development Corp., RB, Senior Lien, Series B (AMT), 5.75%, 10/01/31 (a)	1,325	1,415,219
New Hope Cultural Education Facilities Corp., RB, Stephenville LLC Tarleton State University Project:		
5.88%, 4/01/36	1,210	1,421,278
6.00%, 4/01/45	1,845	2,176,141
Newark Higher Education Finance Corp., RB, Series A (a):		
5.50%, 8/15/35	290	305,182
5.75%, 8/15/45	580	609,603
North Texas Education Finance Corp., ERB, Uplift Education, Series A, 5.25%, 12/01/47	1,600	1,778,752
Red River Health Facilities Development Corp., First MRB, Project:		
Eden Home, Inc., 7.25%, 12/15/42 (c)(d)	2,895	2,566,736
Wichita Falls Retirement Foundation, 5.13%, 1/01/41	900	953,163

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Texas (continued)		
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien:		
LBJ Infrastructure Group LLC, 7.00%, 6/30/40	\$ 3,775	\$ 4,473,337
NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39	3,000	3,558,660
		55,900,147
Utah 0.6%		
State of Utah Charter School Finance Authority, Refunding RB, 6.75%, 10/15/43	2,950	3,119,477
Vermont 0.2%		
Vermont EDA, Refunding, MRB, Wake Robin Corp. Project, 5.40%, 5/01/33	770	821,374
Virginia 3.2%		
County of Fairfax Virginia EDA, Refunding RB, Goodwin House, Inc., 5.13%, 10/01/42	2,500	2,587,050
Lower Magnolia Green Community Development Authority, Special Assessment Bonds (a):		
5.00%, 3/01/35	510	521,052
5.00%, 3/01/45	520	529,427
Mosaic District Community Development Authority, Special Assessment, Series A:		
6.63%, 3/01/26	1,485	1,723,105
6.88%, 3/01/36	1,300	1,504,516
Tobacco Settlement Financing Corp., Refunding RB, Senior Series B-1, 5.00%, 6/01/47	2,280	2,211,509
Virginia College Building Authority, RB, Marymount University Project, Series B, 5.00%, 7/01/45 (a)	535	589,993
Virginia College Building Authority, Refunding RB, Marymount University Project, Series A (a):		
5.00%, 7/01/35	130	145,677
5.00%, 7/01/45	375	415,957
	Par (000)	Value
Municipal Bonds		
Virginia (continued)		
Virginia Small Business Financing Authority, RB, Senior Lien, Elizabeth River Crossings OpCo LLC Project, AMT, 6.00%, 1/01/37	\$ 5,410	\$ 6,462,624
		16,690,910
Washington 0.8%		
County of King Washington Public Hospital District No. 4, GO, Refunding, Snoqualmie Valley Hospital, 7.00%, 12/01/40	1,455	1,626,545
Greater Wenatchee Regional Events Center Public Facilities District, Refunding RB, Series A, 5.50%, 9/01/42	1,495	1,598,813
Washington State Housing Finance Commission, Refunding RB (a):		
5.75%, 1/01/35	315	328,425
6.00%, 1/01/45	850	885,853
		4,439,636
Wisconsin 1.1%		
Public Finance Authority, RB, Series A:		
4.75%, 12/01/35	775	822,996
5.00%, 12/01/45	1,875	2,016,787
5.15%, 12/01/50	1,170	1,260,312
Wisconsin Health & Educational Facilities Authority, Refunding RB, St. Johns Communities, Inc., Series A (b):		
7.25%, 9/15/19	425	502,673
7.63%, 9/15/19	855	1,031,019
		5,633,787
Total Municipal Bonds 88.3%		466,349,831
Municipal Bonds Transferred to		
Tender Option Bond Trusts (i)		
Colorado 2.4%	11,468	12,773,787

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Colorado Health Facilities Authority, Refunding RB, Sisters of Leavenworth Health System, Series A,
5.00%, 1/01/40

Florida 3.1%

County of Miami-Dade Florida, Refunding RB, Miami International Airport, Series A, AMT (AGC),
5.25%, 10/01/33

15,000

16,302,750

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2016

9

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

Municipal Bonds Transferred to	Par	
Tender Option Bond Trusts (i)	(000)	Value
Illinois 2.8%		
Illinois Finance Authority, RB, The Carle Foundation, Series A (AGM), 6.00%, 8/15/41	\$ 7,180	\$ 8,647,089
State of Illinois Toll Highway Authority, RB, Senior Priority, Series A, 5.00%, 1/01/40	5,056	6,074,356
		14,721,445
New York 13.6%		
City of New York New York Housing Development Corp., RB, M/F Housing, Series D-1, Class B, 4.25%, 11/01/45	8,996	9,613,740
City of New York New York Municipal Water Finance Authority, Refunding RB, Water & Sewer System, 2nd General Resolution:		
Fiscal 2013, Series CC, 5.00%, 6/15/47	14,181	16,931,951
Series HH, 5.00%, 6/15/31 (j)	8,610	10,219,209
Hudson Yards Infrastructure Corp., RB, Fiscal 2012, Series A, 5.75%, 2/15/47	4,520	5,343,960
New York Liberty Development Corp., RB, 1 World Trade Center Port Authority Consolidated Bonds, 5.25%, 12/15/43	18,104	21,796,525
Municipal Bonds Transferred to	Par	
Tender Option Bond Trusts (i)	(000)	Value
New York (continued)		
New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51	\$ 6,600	\$ 7,985,370
		71,890,755
Washington 1.8%		
City of Bellingham Washington, RB, Water & Sewer, 5.00%, 8/01/40	7,966	9,271,254
Total Municipal Bonds Transferred to		
Tender Option Bond Trusts 23.7%		124,959,991
Total Long-Term Investments		
(Cost \$534,910,362) 112.0%		591,309,822
Short-Term Securities	Shares	
BlackRock Liquidity Funds, MuniCash, Institutional Class, 0.26% (k)(l)	850,504	850,504
Total Short-Term Securities		850,504
(Cost \$850,504) 0.2%		
Total Investments (Cost \$535,760,866*) 112.2%		592,160,326
Other Assets Less Liabilities 0.3%		1,962,893
Liability for TOB Trust Certificates, Including Interest Expense and Fees Payable (12.5)%		(66,159,092)
Net Assets Applicable to Common		
Shares 100.0%		\$ 527,964,127

* As of July 31, 2016, gross unrealized appreciation and depreciation based on cost for federal income tax purposes were as follows:

Tax cost	\$ 469,251,005
Gross unrealized appreciation	\$ 68,071,128
Gross unrealized depreciation	(11,248,330)
Net unrealized appreciation	\$ 56,822,798

Notes to Schedule of Investments

- (a) Security exempt from registration pursuant to Rule 144A under the Securities Act of 1933, as amended. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (b) U.S. Government securities, held in escrow, are used to pay interest on this security, as well as to retire the bond in full at the date indicated, typically at a premium to par.
- (c) Issuer filed for bankruptcy and/or is in default of interest payments.
- (d) Non-income producing security.
- (e) Step-up bond that pays an initial coupon rate for the first period and then a higher coupon rate for the following periods. Rate as of period end.
- (f) When-issued security.
- (g) Variable rate security. Rate as of period end.

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

- (h) Zero-coupon bond.
- (i) Represent bonds transferred to a TOB Trust in exchange of cash and residual certificates received by the Fund. These bonds serve as collateral in a secured borrowing.
- (j) All or a portion of security is subject to a recourse agreement. The aggregate maximum potential amount the Fund could ultimately be required to pay under the agreement, which expires on June 15, 2019, is \$5,961,229.
- (k) During the period ended July 31, 2016, investments in issuers considered to be an affiliate of the Fund for purposes of Section 2(a)(3) of the Investment Company Act of 1940, as amended, were as follows:

Affiliate	Shares Held at April 30, 2016	Net Activity	Shares Held at July 31, 2016	Value at July 31, 2016	Income
BlackRock Liquidity Funds, MuniCash, Institutional Class	4,296,151	(3,445,647)	850,504	\$ 850,504	\$ 1,273

- (l) Current yield as of period end.

Derivative Financial Instruments Outstanding as of Period End
Futures Contracts

Contracts Short	Issue	Expiration	Notional Value	Unrealized Appreciation (Depreciation)
(30)	5-Year U.S. Treasury Note	September 2016	\$ 3,660,469	\$ 958
(42)	10-Year U.S. Treasury Note	September 2016	\$ 5,587,969	5,295
(15)	Long U.S. Treasury Bond	September 2016	\$ 2,616,562	(700)
(4)	Ultra U.S. Treasury Bond	September 2016	\$ 762,125	(21,329)
Total				\$ (15,776)

Portfolio Abbreviations

AGC	Assured Guarantee Corp.
AGM	Assured Guaranty Municipal Corp.
AMT	Alternative Minimum Tax (subject to)
ARB	Airport Revenue Bonds
CAB	Capital Appreciation Bonds
EDA	Economic Development Authority
EDC	Economic Development Corp.
ERB	Education Revenue Bonds
GO	General Obligation Bonds
IDA	Industrial Development Authority
M/F	Multi-Family
MRB	Mortgage Revenue Bonds

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RB Revenue Bonds

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2016

11

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

Fair Value Hierarchy as of Period End

Various inputs are used in determining the fair value of investments and derivative financial instruments. These inputs to valuation techniques are categorized into a fair value hierarchy consisting of three broad levels for financial reporting purposes as follows:

Level 1 unadjusted price quotations in active markets/exchanges for identical assets or liabilities that the Fund has the ability to access

Level 2 other observable inputs (including, but not limited to, quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market-corroborated inputs)

Level 3 unobservable inputs based on the best information available in the circumstances, to the extent observable inputs are not available (including the Fund's own assumptions used in determining the fair value of investments and derivative financial instruments)

The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Accordingly, the degree of judgment exercised in determining fair value is greatest for instruments categorized in Level 3. The inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the fair value hierarchy classification is determined based on the lowest level input that is significant to the fair value measurement in its entirety. The significant unobservable inputs used by the Global Valuation Committee in determining the price for Fair Valued Investments are typically categorized as Level 3.

Changes in valuation techniques may result in transfers into or out of an assigned level within the hierarchy. In accordance with the Fund's policy, transfers between different levels of the fair value hierarchy are deemed to have occurred as of the beginning of the reporting period. The categorization of a value determined for investments and derivative financial instruments is based on the pricing transparency of the investments and derivative financial instruments and is not necessarily an indication of the risks associated with investing in those securities. For information about the Fund's policy regarding valuation of investments and derivative financial instruments, refer to the Fund's most recent financial statements as contained in its annual report.

The following tables summarize the Fund's investments and derivative financial instruments categorized in the disclosure hierarchy:

	Level 1	Level 2	Level 3	Total
Assets:				
Investments:				
Long-Term Investments ¹		\$ 591,309,822		\$ 591,309,822
Short-Term Securities	\$ 850,504			850,504
Total	\$ 850,504	\$ 591,309,822		\$ 592,160,326
Derivative Financial Instruments ²				
Assets:				
Interest rate contracts	\$ 6,253			\$ 6,253
Liabilities:				
Interest rate contracts	(22,029)			(22,029)
Total	\$ (15,776)			\$ (15,776)

¹ See above Schedule of Investments for values in each state or political subdivision.

² Derivative financial instruments are futures contracts, which are valued at the unrealized appreciation (depreciation) on the instrument.

Schedule of Investments (concluded)

BlackRock MuniAssets Fund, Inc. (MUA)

The Fund may hold assets and/or liabilities in which the fair value approximates the carrying amount for financial reporting purposes. As of period end, such assets and/or liabilities are categorized within the disclosure hierarchy as follows:

	Level 1	Level 2	Level 3	Total
Assets:				
Cash	\$ 504			\$ 504
Cash pledged for futures contracts	158,950			158,950
Liabilities:				
TOB Trust Certificates		\$ (66,086,523)		(66,086,523)
Total	\$ 159,454	\$ (66,086,523)		\$ (65,927,069)

During the period ended July 31, 2016, there were no transfers between levels.

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2016

13

Item 2 Controls and Procedures

- 2(a) The registrant's principal executive and principal financial officers, or persons performing similar functions, have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act")) are effective as of a date within 90 days of the filing of this report based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended.
- 2(b) There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3 Exhibits

Certifications Attached hereto

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.

BlackRock MuniAssets Fund, Inc.

By: /s/ John M. Perlowski
John M. Perlowski
Chief Executive Officer (principal executive officer) of
BlackRock MuniAssets Fund, Inc.

Date: September 21, 2016

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: /s/ John M. Perlowski
John M. Perlowski
Chief Executive Officer (principal executive officer) of
BlackRock MuniAssets Fund, Inc.

Date: September 21, 2016

By: /s/ Neal J. Andrews
Neal J. Andrews
Chief Financial Officer (principal financial officer) of
BlackRock MuniAssets Fund, Inc.

Date: September 21, 2016