

BLACKROCK MUNIASSETS FUND, INC.

Form N-Q

September 27, 2017

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: 04/30/2018

Date of reporting period: 07/31/2017

Item 1 Schedule of Investments

Schedule of Investments July 31, 2017 (Unaudited)

BlackRock MuniAssets Fund, Inc. (MUA)

(Percentages shown are based on Net Assets)

	Par (000)	Value
Municipal Bonds		
Alabama 2.0%		
County of Jefferson Alabama, RB, Limited Obligation School, Series A: 5.25%, 1/01/19	\$ 2,000	\$ 2,003,480
5.50%, 1/01/21	1,215	1,217,236
County of Jefferson Alabama Sewer, Refunding RB, Sub-Lien, Series D, 6.00%, 10/01/42	3,745	4,403,596
State of Alabama Docks Department, Refunding RB, 6.00%, 10/01/20 (a)	2,165	2,492,391
		10,116,703
Alaska 0.7%		
Northern Tobacco Securitization Corp., Refunding RB, Tobacco Settlement, Asset-Backed, Series A: 4.63%, 6/01/23	875	878,185
5.00%, 6/01/32	1,500	1,446,000
5.00%, 6/01/46	1,200	1,141,236
		3,465,421
Arizona 2.2%		
City of Phoenix Arizona IDA, RB: Great Hearts Academies Veritas Project, 6.40%, 7/01/21 (a)	425	507,680
Great Hearts Academies Veritas Projects, 6.30%, 7/01/21 (a)	500	595,370
Legacy Traditional Schools Project, Series A, 6.50%, 7/01/34 (b)	570	645,770
Legacy Traditional Schools Projects, Series A, 6.75%, 7/01/44 (b)	1,000	1,142,430
City of Phoenix Arizona IDA, Refunding RB (b): Basis Schools, Inc. Projects, 5.00%, 7/01/35	305	318,356
Basis Schools, Inc. Projects, 5.00%, 7/01/45	855	882,599
Basis Schools, Inc. Projects, Series A, 5.00%, 7/01/35	260	271,385
Basis Schools, Inc. Projects, Series A, 5.00%, 7/01/46	290	299,167
Legacy Traditional School Projects, 5.00%, 7/01/35	320	329,686
Legacy Traditional School Projects, 5.00%, 7/01/45	255	259,830
Salt Verde Financial Corp., RB, Senior, 5.00%, 12/01/37	1,650	1,986,303
	Par (000)	Value
Municipal Bonds		
Arizona (continued)		
State of Arizona IDA, RB, Academies of Math & Science Project, Series B, 5.13%, 7/01/47 (b)	\$ 665	\$ 659,441
State of Arizona IDA, Refunding RB, Basis Schools, Inc. Projects, Series A (b): 5.13%, 7/01/37	960	1,012,291
5.25%, 7/01/47	1,765	1,857,310
University Medical Center Corp., RB, 6.50%, 7/01/19 (a)	500	551,870
		11,319,488
California 8.3%		
California Municipal Finance Authority, RB, Urban Discovery Academy Project (b): 5.50%, 8/01/34	315	318,827
6.00%, 8/01/44	665	681,778
6.13%, 8/01/49	580	597,098
California Municipal Finance Authority, Refunding RB, Community Medical Centers, Series A: 5.00%, 2/01/36	345	392,496
5.00%, 2/01/37	255	289,660
California Pollution Control Financing Authority, RB, Calplant I Project, Green Bonds, AMT (b): 7.50%, 7/01/32	700	735,826
8.00%, 7/01/39	365	399,168
California School Finance Authority, RB: Alliance for College Ready Public School 2023 Union LLC Project, Series A, 6.40%, 7/01/48	1,570	1,793,348
Value Schools, 6.65%, 7/01/33	435	488,923
Value Schools, 6.90%, 7/01/43	975	1,103,856
California Statewide Communities Development Authority, RB, Loma Linda University Medical Center, Series A (b):		

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5.00%, 12/01/46	920	991,392
5.25%, 12/01/56	2,055	2,236,477
California Statewide Communities Development Authority, Refunding RB, American Baptist Homes of the West, 6.25%, 10/01/39	2,175	2,363,681

BLACKROCK MUNIASSETS FUND, INC.

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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
California (continued)		
California Statewide Financing Authority, RB, Asset-Backed, Tobacco Settlement, Series B, 6.00%, 5/01/43	\$ 1,650	\$ 1,654,719
City & County of San Francisco California Redevelopment Agency, Tax Allocation Bonds, Mission Bay South Redevelopment Project, Series D (b)(c):		
0.00%, 8/01/26	1,250	792,775
0.00%, 8/01/43	1,500	364,500
City of San Jose California Hotel Tax, RB, Convention Center Expansion & Renovation Project:		
6.50%, 5/01/36	900	1,050,210
6.50%, 5/01/42	2,220	2,588,764
City of Stockton California Public Financing Authority, RB, Delta Water Supply Project, Series A, 6.25%, 10/01/40	375	457,223
County of Los Angeles California Tobacco Securitization Agency, RB, Asset-Backed, Los Angeles County Securitization Corp.:		
5.60%, 6/01/36	1,285	1,300,420
5.70%, 6/01/46	3,600	3,570,984
County of Riverside California Transportation Commission, RB, Senior Lien, Series A, 5.75%, 6/01/48	2,885	3,264,954
Golden State Tobacco Securitization Corp., Refunding RB, Asset-Backed, Senior Series A-1:		
5.13%, 6/01/47	4,455	4,373,830
5.75%, 6/01/47	3,745	3,745,000
Tobacco Securitization Authority of Southern California, Refunding RB, Tobacco Settlement, Asset-Backed, Senior Series A-1:		
4.75%, 6/01/25	1,230	1,238,684
5.00%, 6/01/37	5,580	5,590,044
		42,384,637
Colorado 1.0%		
Castle Oaks Metropolitan District No. 3, GO, 6.25%, 12/01/44	500	532,930
Centerra Metropolitan District No. 1, Tax Allocation Bonds, 5.00%, 12/01/47	575	583,573
	Par (000)	Value
Municipal Bonds		
Colorado (continued)		
Colorado Health Facilities Authority, Refunding RB, Sunny Vista Living Center Project, Series A (b):		
6.13%, 12/01/45	\$ 335	\$ 352,473
6.25%, 12/01/50	1,115	1,179,358
Colorado High Performance Transportation Enterprise, RB, C-470 Express Lanes, 5.00%, 12/31/47	235	259,621
Copperleaf Metropolitan District No. 2, GO, Refunding, 5.75%, 12/01/45	720	753,041
Regional Transportation District, RB, Denver Transit Partners Eagle P3 Project, 6.00%, 1/15/34	1,500	1,656,015
		5,317,011
Connecticut 1.0%		
Mohegan Tribal Finance Authority, RB, 7.00%, 2/01/45 (b)	1,400	1,481,116
Mohegan Tribe of Indians of Connecticut, RB, Series A, 6.75%, 2/01/45 (b)	1,420	1,481,940
Mohegan Tribe of Indians of Connecticut, Refunding RB, Public Improvement, Priority Distribution, Series C, 6.25%, 2/01/30 (b)	1,835	1,950,862
		4,913,918
Delaware 0.9%		
County of Sussex Delaware, RB, NRG Energy, Inc., Indian River Power LLC Project, 6.00%, 10/01/40	1,000	1,076,800
State of Delaware EDA, RB, Exempt Facilities, Indian River Power LLC Project, 5.38%, 10/01/45	3,180	3,310,571
		4,387,371
Florida 7.9%		
Boggy Creek Improvement District, Refunding RB, Special Assessment Bonds, 5.13%, 5/01/43	1,500	1,518,870

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Capital Trust Agency, Inc., RB, Silver Creek St. Augustine Project, Series A (d): 1st Mortgage, 8.25%, 1/01/44	515	427,708
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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Florida (continued)		
Capital Trust Agency, Inc., RB, Silver Creek St. Augustine Project, Series A (continued) (d):		
1st Mortgage, 8.25%, 1/01/49	\$ 1,105	\$ 916,343
5.75%, 1/01/50	655	612,805
County of Collier Florida IDA, Refunding RB, Arlington of Naples Project, Series A, 8.13%, 5/15/44 (b)	2,510	2,791,547
County of Palm Beach Florida Health Facilities Authority, RB, Acts Retirement Life Community, 5.50%, 11/15/20 (a)	3,500	3,996,335
Florida Development Finance Corp., RB, Renaissance Charter School, Series A:		
5.75%, 6/15/29	690	706,843
6.00%, 6/15/34	835	856,159
6.13%, 6/15/44	3,180	3,241,247
Greenway Improvement District, RB, Special Assessment Bonds, 5.13%, 5/01/43	1,855	1,883,159
Harbor Bay Community Development District Florida, Special Assessment Bonds, Series A, 7.00%, 5/01/33	380	380,293
Jacksonville Economic Development Commission, Refunding RB, Florida Proton Therapy Institute, Series A, 6.00%, 9/01/17 (b)	295	296,021
Lakewood Ranch Stewardship District, Refunding, Special Assessment Bonds, Lakewood Center & New Sector Projects, 8.00%, 5/01/40	1,485	1,745,231
Lakewood Ranch Stewardship District Special Assessment Bonds, Village of Lakewood Ranch Sector Projects:		
4.00%, 5/01/21	150	152,502
4.25%, 5/01/26	150	151,743
Lakewood Ranch Stewardship District Special Assessment Bonds,, Village of Lakewood Ranch Sector Projects, 5.13%, 5/01/46	885	899,594
Mid-Bay Florida Bridge Authority, RB, Springing Lien, Series A, 7.25%, 10/01/21 (a)	4,550	5,646,504
	Par (000)	Value
Municipal Bonds		
Florida (continued)		
Midtown Miami Community Development District, Refunding, Special Assessment Bonds:		
Series A, 5.00%, 5/01/37	\$ 845	\$ 894,196
Series B, 5.00%, 5/01/37	495	523,819
Palm Beach County Health Facilities Authority, Refunding RB, Series A, 7.25%, 6/01/34	500	589,170
Santa Rosa Bay Bridge Authority, RB, 6.25%, 7/01/28 (d)(e)	4,052	2,999,463
Tampa Palms Open Space and Transportation Community Development District, RB, Capital Improvement, Richmond Place Project, 7.50%, 5/01/18	295	295,319
Tolomato Community Development District, Refunding, Special Assessment Bonds:		
Convertible CAB, Series A2, 6.61%, 5/01/39	250	249,998
Convertible CAB, Series A3, 0.00%, 5/01/40 (f)	585	350,052
Convertible CAB, Series A4, 0.00%, 5/01/40 (f)	305	135,100
Series 2015-2, 0.00%, 5/01/40 (f)	805	417,956
Series A1, 6.65%, 5/01/40	875	875,192
Tolomato Community Development District:		
Series 1, 0.00%, 5/01/40 (d)(f)	1,305	805,798
Series 1, 6.65%, 5/01/40 (d)(e)	50	50,262
Series 3, 6.61%, 5/01/40 (d)(e)	875	9
Series 3, 6.65%, 5/01/40 (d)(e)	710	7
Village Community Development District No. 9, Special Assessment Bonds:		
6.75%, 5/01/31	1,540	1,807,821
7.00%, 5/01/41	2,525	2,976,823
5.50%, 5/01/42	1,190	1,328,837
		40,522,726
Georgia 1.9%		
Atlanta Development Authority, RB, Georgia Proton Treatment Center Project, Series A-1:		
6.75%, 1/01/35	835	865,912
7.00%, 1/01/40	640	670,310
County of Clayton Georgia, Tax Allocation Bonds, Ellenwood Project, 7.50%, 7/01/33	2,520	2,541,420

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Schedule of Investments (continued)

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	Par (000)	Value
Municipal Bonds		
Georgia (continued)		
County of Clayton Georgia Development Authority, Refunding RB, Delta Air Lines, Inc. Project, Series A, 8.75%, 6/01/29	\$ 3,365	\$ 3,934,291
County of Gainesville & Hall Georgia Development Authority, Refunding RB, Acts Retirement Life Community, Series A-2 (a):		
6.38%, 11/15/19	700	784,455
6.63%, 11/15/19	880	991,021
		9,787,409
Guam 0.3%		
Territory of Guam, GO, Series A:		
6.00%, 11/15/19	390	411,111
7.00%, 11/15/19 (a)	1,115	1,264,700
		1,675,811
Illinois 4.1%		
City of Chicago Illinois, GO, Refunding, Series A, 6.00%, 1/01/38	1,260	1,351,690
Illinois Finance Authority, Refunding RB:		
Friendship Village of Schaumburg, 7.25%, 2/15/45	4,000	4,171,320
Lutheran Home & Services Obligated Group, 5.63%, 5/15/42	2,395	2,495,590
Presence Health Network, Series C, 4.00%, 2/15/41	1,500	1,395,900
Primary Health Care Centers Program, 6.60%, 7/01/24	890	895,073
Rogers Park Montessori School Project, Series 2014, 6.00%, 2/01/34	365	385,046
Rogers Park Montessori School Project, Series 2014, 6.13%, 2/01/45	860	902,923
Roosevelt University Project, 6.50%, 4/01/44	4,170	4,413,361
Metropolitan Pier & Exposition Authority, RB, McCormick Place Expansion Project, Series A, 5.50%, 6/15/53	2,370	2,508,242
Railsplitter Tobacco Settlement Authority, RB:		
5.50%, 6/01/23	180	205,103
6.00%, 6/01/28	710	808,938
	Par (000)	Value
Municipal Bonds		
Illinois (continued)		
Village of Lincolnshire Illinois, Special Tax Bonds, Sedgebrook Project, 6.25%, 3/01/34	\$ 1,661	\$ 1,665,169
		21,198,355
Indiana 2.1%		
City of Valparaiso Indiana, RB, Exempt Facilities, Pratt Paper LLC Project, AMT:		
6.75%, 1/01/34	825	980,744
7.00%, 1/01/44	2,000	2,399,740
City of Vincennes Indiana, Refunding RB, Southwest Indiana Regional Youth Village Project, 6.25%, 1/01/29 (b)	2,450	2,378,190
County of Allen Indiana, RB, StoryPoint Fort Wayne Project, Series A-1 (b):		
6.63%, 1/15/34	290	299,944
6.75%, 1/15/43	525	542,939
6.88%, 1/15/52	860	889,283
Indiana Finance Authority, RB, Private Activity Bond, Ohio River Bridges East End Crossing Project, Series A, AMT:		
5.00%, 7/01/44	470	502,830
5.00%, 7/01/48	1,555	1,669,184
Town of Chesterton Indiana, RB, StoryPoint Chesterton Project, Series A-1, 6.38%, 1/15/51 (b)	1,190	1,202,816
		10,865,670
Iowa 2.7%		
Iowa Finance Authority, Refunding RB:		
Midwestern Disaster Area, Iowa Fertilizer Co. Project, 5.50%, 12/01/22	2,090	2,135,813
Midwestern Disaster Area, Iowa Fertilizer Co. Project, 5.25%, 12/01/25	2,190	2,336,029
Sunrise Retirement Community Project, 5.50%, 9/01/37	1,355	1,370,474
Sunrise Retirement Community Project, 5.75%, 9/01/43	2,115	2,152,118
Iowa Tobacco Settlement Authority, Refunding RB:		

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Asset-Backed, CAB, Series B, 5.60%, 6/01/34

795

786,231

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BLACKROCK MUNIASSETS FUND, INC.

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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Iowa (continued)		
Iowa Tobacco Settlement Authority, Refunding RB (continued): Series C, 5.38%, 6/01/38	\$ 4,900	\$ 4,851,147
		13,631,812
Kentucky 0.9%		
Kentucky Public Transportation Infrastructure Authority, RB, Downtown Crossing, First Tier, Series A, 5.75%, 7/01/49	4,000	4,478,240
Louisiana 3.0%		
Juban Crossing Economic Development District, Refunding RB, General Infrastructure Project, Series C, 7.00%, 9/15/44 (b)	2,460	2,574,070
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp. Project, 6.75%, 11/01/32	5,000	5,056,150
Louisiana Public Facilities Authority, RB, Belle Chasse Educational Foundation Project, 6.75%, 5/01/41	1,745	1,933,495
Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, Series A, 5.25%, 5/15/35	5,570	6,000,227
		15,563,942
Maine 0.6%		
Maine Health & Higher Educational Facilities Authority, RB, Maine General Medical Center, 6.75%, 7/01/41	2,955	3,229,963
Maryland 2.6%		
City of Baltimore Maryland, Refunding RB, Convention Center Hotel, 5.00%, 9/01/33	470	535,020
County of Frederick Maryland, RB, Jefferson Technology Park Project, Series B, 7.13%, 7/01/43	2,840	3,124,000
Maryland EDC, RB: Purple Line Light Rail Project, AMT, 5.00%, 3/31/51	2,185	2,418,336
Transportation Facilities Project, Series A, 5.75%, 6/01/35	3,615	3,879,365
	Par (000)	Value
Municipal Bonds		
Maryland (continued)		
Maryland EDC, Refunding RB, CNX Marine Terminals, Inc., 5.75%, 9/01/25	\$ 3,085	\$ 3,119,398
		13,076,119
Massachusetts 1.4%		
Massachusetts Development Finance Agency, RB: Boston Medical Center, Series D, 5.00%, 7/01/44	1,905	2,084,489
Foxborough Regional Charter School, Series A, 7.00%, 7/01/42	1,025	1,125,101
North Hill Communities Issue, Series A, 6.50%, 11/15/43 (b)	2,020	2,274,278
Massachusetts Development Finance Agency, Refunding RB, Tufts Medical Center, Series I, 6.75%, 1/01/36	1,490	1,698,734
		7,182,602
Michigan 0.9%		
City of Detroit Michigan Sewage Disposal System, Refunding RB, Senior Lien, Series A, 5.25%, 7/01/39	2,785	3,094,970
Michigan Finance Authority, RB, Detroit Water & Sewage Disposal System, Senior Lien, Series 2014 C-2, AMT, 5.00%, 7/01/44	415	443,461
Michigan Finance Authority, Refunding RB, Detroit Water & Sewage Department Project, Senior Lien, Series C-1, 5.00%, 7/01/44	920	999,994
		4,538,425
Minnesota 0.1%		
St. Paul Housing & Redevelopment Authority, Refunding RB, Hmong College Prep Academy Project, Series A: 5.75%, 9/01/46	195	200,421
6.00%, 9/01/51	290	300,173
		500,594
Missouri 1.0%		

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Kirkwood Missouri IDA, RB, Aberdeen Heights, Series A, 8.25%, 5/15/20 (a)

2,315

2,760,915

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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Missouri (continued)		
Lees Summit Missouri IDA, RB, John Knox Obligated Group, 5.25%, 8/15/39	\$ 2,235	\$ 2,352,338
		5,113,253
New Jersey 5.2%		
Casino Reinvestment Development Authority, Refunding RB: 5.25%, 11/01/39	1,065	1,093,318
5.25%, 11/01/44	770	785,277
County of Essex New Jersey Improvement Authority, RB, AMT, 5.25%, 7/01/45 (b) New Jersey EDA, RB:	1,150	1,156,728
Goethals Bridge Replacement Project, AMT, Private Activity Bond, 5.38%, 1/01/43	2,155	2,406,467
Kapkowski Road Landfill Project, Series B, AMT, 6.50%, 4/01/31	2,250	2,599,763
Provident Group-Kean Properties, Series A, 5.00%, 7/01/32	165	182,181
Provident Group-Kean Properties, Series A, 5.00%, 7/01/37	260	282,352
Team Academy Charter School Project, 6.00%, 10/01/43	1,530	1,695,668
New Jersey EDA, Refunding RB, Greater Brunswick Charter School, Inc. Project, Series A, 6.00%, 8/01/49 (b)	500	501,415
New Jersey Health Care Facilities Financing Authority, Refunding RB (a): St. Barnabas Health Care System, Series A, 5.63%, 7/01/21	2,650	3,102,859
St. Joseph's Healthcare System, 6.63%, 7/01/18	2,590	2,725,638
New Jersey Transportation Trust Fund Authority, RB, Transportation Program, Series AA, 5.25%, 6/15/41	1,140	1,209,278
Tobacco Settlement Financing Corp. New Jersey, Refunding RB, Series 1A, 5.00%, 6/01/29	3,735	3,706,128
	Par (000)	Value
Municipal Bonds		
New Jersey (continued)		
Tobacco Settlement Financing Corp. New Jersey, Series 1A, 5.00%, 6/01/41	\$ 5,210	\$ 4,973,049
		26,420,121
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	3,244,487
New York 7.7%		
Counties of New York Tobacco Trust IV, Refunding RB, Settlement Pass-Through Turbo, Series A: 6.25%, 6/01/41 (b)	5,300	5,450,414
5.00%, 6/01/42	3,155	3,051,958
5.00%, 6/01/45	1,185	1,126,378
Counties of New York Tobacco Trust VI, Refunding RB, Tobacco Settlement Pass-Through, Series A-2B, 5.00%, 6/01/51	900	924,786
County of Dutchess New York Industrial Development Agency, Refunding RB, Bard College Civic Facility, Series A-1, 5.00%, 8/01/46	3,315	2,802,136
County of Nassau New York Tobacco Settlement Corp., Refunding RB, Asset-Backed, Series A-3, 5.13%, 6/01/46	750	732,068
County of Westchester New York Healthcare Corp., RB, Senior Lien, Series A, 5.00%, 11/01/44	1,333	1,428,318
Erie Tobacco Asset Securitization Corp., Refunding RB, Asset-Backed, Series A, 5.00%, 6/01/45	2,890	2,829,830
Metropolitan Transportation Authority, RB, Series C: 6.50%, 11/15/18 (a)	1,490	1,597,205
6.50%, 11/15/18 (a)	125	133,994
6.50%, 11/15/28	385	412,812
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	1,376,210
3 World Trade Center Project, Class 1, 5.00%, 11/15/44 (b)	4,705	5,095,515

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
New York (continued)		
New York Liberty Development Corp., Refunding RB (continued):		
3 World Trade Center Project, Class 2, 5.15%, 11/15/34 (b)	\$ 455	\$ 499,836
3 World Trade Center Project, Class 2, 5.38%, 11/15/40 (b)	1,080	1,198,228
3 World Trade Center Project, Class 3, 7.25%, 11/15/44 (b)	1,565	1,864,619
New York Transportation Development Corp., Refunding RB, American Airlines, Inc., AMT, 5.00%, 8/01/31	1,195	1,277,336
Niagara Area Development Corp., Refunding RB, Solid Waste Disposal Facility, Covanta Energy Project, Series A, AMT, 5.25%, 11/01/42 (b)	1,335	1,339,058
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	1,505,651
State of New York Dormitory Authority, Refunding RB, Orange Regional Medical Center, 5.00%, 12/01/33 (b)	955	1,056,517
Town of Oyster Bay New York, GO, BAN, Series A, 3.50%, 6/01/18	3,035	3,073,241
Town of Oyster Bay New York, GO, Refunding, BAN, Series B, 3.50%, 2/02/18	505	509,661
		39,285,771
North Carolina 1.5%		
North Carolina Medical Care Commission, Refunding RB, 1st Mortgage, Series A:		
Deerfield Project, 6.13%, 11/01/18 (a)	4,565	4,858,575
Retirement Facilities Whitestone Project, 7.75%, 3/01/31	1,000	1,101,010
	Par (000)	Value
Municipal Bonds		
North Carolina (continued)		
North Carolina Medical Care Commission, Refunding RB, 1st Mortgage, Series A (continued):		
Retirement Facilities Whitestone Project, 7.75%, 3/01/41	\$ 1,420	\$ 1,563,931
		7,523,516
Ohio 3.1%		
Buckeye Tobacco Settlement Financing Authority, RB, Asset-Backed, Series A-2:		
5.75%, 6/01/34	6,745	6,374,093
6.00%, 6/01/42	3,040	2,834,861
Senior Turbo Term, 5.88%, 6/01/47	5,570	5,247,051
County of Hamilton Ohio, Refunding RB, Improvement-Life Enriching Communities, 5.00%, 1/01/46	1,400	1,483,762
		15,939,767
Oklahoma 0.2%		
County of Tulsa Industrial Authority, Refunding RB, Montereau, Inc. Project, 5.25%, 11/15/37		
	750	829,147
Oklahoma Development Finance Authority, Refunding RB, Inverness Village Community, 6.00%, 1/01/32	305	315,111
		1,144,258
Oregon 0.8%		
Hospital Facilities Authority of Multnomah County Oregon, Refunding RB, Mirabella at South Waterfront, 5.50%, 10/01/49		
	1,765	1,879,443
Polk County Hospital Facility Authority, RB, Dallas Retirement Village Project, Series A:		
5.13%, 7/01/35	620	622,976
5.38%, 7/01/45	1,435	1,462,896
		3,965,315
Pennsylvania 3.5%		
Allentown Neighborhood Improvement Zone Development Authority, Refunding RB, Series A, 5.00%, 5/01/42		
	2,140	2,243,876

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Pennsylvania (continued)		
City of Philadelphia Pennsylvania Hospitals & Higher Education Facilities Authority, RB, Temple University Health System, Series A, 5.63%, 7/01/36	\$ 2,000	\$ 2,156,260
County of Cumberland Pennsylvania Municipal Authority, Refunding RB, Diakon Lutheran: 6.38%, 1/01/19 (a)	5,550	5,970,967
6.38%, 1/01/39	615	658,302
County of Lehigh Pennsylvania General Purpose Authority, Refunding RB, Bible Fellowship Church Homes, 5.13%, 7/01/32	1,800	1,855,062
County of Northampton Pennsylvania IDA, Route 33 Project, Tax Allocation Bonds, 7.00%, 7/01/32	2,030	2,345,523
Pennsylvania Economic Development Financing Authority, Refunding RB, National Gypsum Co., AMT, 5.50%, 11/01/44	2,710	2,907,911
		18,137,901
Puerto Rico 1.5%		
Children s Trust Fund, Refunding RB, Tobacco Settlement, Asset-Backed Bonds: 5.50%, 5/15/39	635	629,793
5.63%, 5/15/43	2,145	2,104,738
5.38%, 5/15/33	970	978,488
Commonwealth of Puerto Rico, GO, Refunding, Series A (d)(e): 8.00%, 7/01/35	1,765	1,059,000
Public Improvement, 5.50%, 7/01/39	665	377,388
Commonwealth of Puerto Rico, GO, 6.00%, 7/01/38 (d)(e)	750	425,625
Commonwealth of Puerto Rico Aqueduct & Sewer Authority, RB, Senior Lien, Series A, 6.00%, 7/01/44	1,060	883,796
Commonwealth of Puerto Rico Aqueduct & Sewer Authority, Refunding RB, Senior Lien, Series A, 6.00%, 7/01/38	1,150	964,551
		7,423,379
Rhode Island 2.3%		
Central Falls Detention Facility Corp., Refunding RB, 7.25%, 7/15/35 (d)(e)	4,190	1,033,799
	Par (000)	Value
Municipal Bonds		
Rhode Island (continued)		
Tobacco Settlement Financing Corp., Refunding RB: Series A, 5.00%, 6/01/35	\$ 1,000	\$ 1,089,790
Series A, 5.00%, 6/01/40	980	1,060,360
Series B, 4.50%, 6/01/45	5,055	5,087,908
Series B, 5.00%, 6/01/50	3,330	3,418,778
		11,690,635
Texas 10.2%		
Central Texas Regional Mobility Authority, Refunding RB:		
CAB, 0.00%, 1/01/28 (c)	1,000	712,180
CAB, 0.01%, 1/01/29 (c)	2,000	1,363,420
CAB, 0.01%, 1/01/30 (c)	1,170	756,440
CAB, 0.01%, 1/01/33 (c)	3,690	2,017,655
CAB, 0.00%, 1/01/34 (c)	4,000	2,062,320
Senior Lien, 6.25%, 1/01/21 (a)	2,210	2,584,109
City of Houston Texas Airport System, Refunding ARB, AMT:		
Special Facilities, Continental Airlines, Inc., Series A, 6.63%, 7/15/38	2,890	3,211,831
United Airlines, Inc. Terminal E Project, 5.00%, 7/01/29	910	977,850
Clifton Higher Education Finance Corp., ERB, Idea Public Schools: 5.50%, 8/15/31	955	1,036,462
5.75%, 8/15/41	720	777,974
County of Bexar Texas Health Facilities Development Corp., RB, Army Retirement Residence Project, 6.20%, 7/01/20 (a)	5,040	5,777,302
County of Harris Texas Cultural Education Facilities Finance Corp., RB, 1st Mortgage, Brazos Presbyterian Homes, Inc. Project, Series B, 7.00%, 1/01/23 (a)	475	612,422
	2,090	2,319,001

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County of Matagorda Texas Navigation District No. 1, Refunding RB, Central Power & Light Co., Project, Series A, 6.30%, 11/01/29		
County of Tarrant Texas Cultural Education Facilities Finance Corp., RB, Senior Living Center Project, Series A, 8.25%, 11/15/44	4,200	4,438,224
County of Tarrant Texas Cultural Education Facilities Finance Corp., Refunding RB, Trinity Terrace Project, 5.00%, 10/01/49	865	912,393

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BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2017

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Texas (continued)		
County of Travis Texas Health Facilities Development Corp., Refunding RB, 7.13%, 1/01/46	\$ 3,080	\$ 3,326,677
Mesquite Health Facility Development Corp., Refunding RB, 5.13%, 2/15/42	810	841,177
Mission Economic Development Corp., RB, Senior Lien, Natgasoline Project, Series B, AMT, 5.75%, 10/01/31 (b)	1,325	1,387,394
New Hope Cultural Education Facilities Corp., RB, Stephenville LLC Tarleton State University Project:		
5.88%, 4/01/36	1,210	1,367,106
6.00%, 4/01/45	1,845	2,092,285
Newark Higher Education Finance Corp., RB, Series A (b):		
5.50%, 8/15/35	290	294,318
5.75%, 8/15/45	580	591,942
North Texas Education Finance Corp., ERB, Uplift Education, Series A, 5.25%, 12/01/47	1,600	1,692,064
Red River Health Facilities Development Corp., First MRB, Project:		
Eden Home, Inc., 7.25%, 12/15/42 (d)(e)	2,895	2,285,892
Wichita Falls Retirement Foundation, 5.13%, 1/01/41	900	932,661
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien:		
LBJ Infrastructure Group LLC, 7.00%, 6/30/40	3,775	4,292,251
NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39	3,000	3,356,970
		52,020,320
Utah 0.6%		
State of Utah Charter School Finance Authority, Refunding RB, 6.75%, 10/15/43	2,950	3,043,604
Vermont 0.2%		
Vermont EDA, Refunding, MRB, Wake Robin Corp. Project, 5.40%, 5/01/33	770	809,393
	Par (000)	Value
Municipal Bonds		
Virginia 2.4%		
Lower Magnolia Green Community Development Authority, Special Assessment Bonds (b):		
5.00%, 3/01/35	\$ 500	\$ 512,920
5.00%, 3/01/45	510	519,221
Mosaic District Community Development Authority, Special Assessment, Series A:		
6.63%, 3/01/26	1,485	1,641,222
6.88%, 3/01/36	1,300	1,434,056
Tobacco Settlement Financing Corp., Refunding RB, Senior Series B-1, 5.00%, 6/01/47	2,280	2,166,114
Virginia College Building Authority, RB, Marymount University Project, Series B, 5.00%, 7/01/45 (b)	535	558,390
Virginia College Building Authority, Refunding RB, Marymount University Project, Series A, 5.00%, 7/01/45 (b)	375	391,395
Virginia Small Business Financing Authority, RB, Senior Lien, Elizabeth River Crossings OpCo LLC Project, AMT, 6.00%, 1/01/37	4,440	5,031,541
		12,254,859
Washington 1.5%		
County of King Washington Public Hospital District No. 4, GO, Refunding, Snoqualmie Valley Hospital, 7.00%, 12/01/40	1,455	1,558,218
Greater Wenatchee Regional Events Center Public Facilities District, Refunding RB, Series A, 5.50%, 9/01/42	1,495	1,540,627
Washington Economic Development Finance Authority, RB, Columbia Pulp I, LLC Project, Series A, AMT, 7.50%, 1/01/32 (b)(g)	3,100	3,270,624
Washington State Housing Finance Commission, Refunding RB (b):		
5.75%, 1/01/35	315	314,468
6.00%, 1/01/45	850	848,249
		7,532,186
Wisconsin 0.9%		
Public Finance Authority, RB:		
Delray Beach Radiation Therapy, 7.00%, 11/01/46 (b)	570	578,043
Series A, 5.00%, 12/01/45	1,505	1,580,190

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Par (000)	Value
Municipal Bonds		
Wisconsin (continued)		
Public Finance Authority, RB (continued):		
Series A, 5.15%, 12/01/50	\$ 1,170	\$ 1,226,932
Wisconsin Health & Educational Facilities Authority, Refunding RB, St. Johns Communities, Inc., Series A (a):		
7.25%, 9/15/19	425	480,335
7.63%, 9/15/19	855	973,041
		4,838,541
Total Municipal Bonds 87.8%		448,543,523
Municipal Bonds Transferred to Tender Option Bond Trusts (h)		
Colorado 2.4%		
Colorado Health Facilities Authority, Refunding RB, Sisters of Leavenworth Health System, Series A, 5.00%, 1/01/40	11,468	12,258,980
Florida 3.1%		
County of Miami-Dade Florida Aviation Revenue, RB, Miami International, Series A, AGC:		
5.25%, 10/01/18 (a)	3,345	3,490,942
5.25%, 10/01/33	11,655	12,163,508
		15,654,450
Illinois 2.7%		
Illinois Finance Authority, RB, The Carle Foundation, Series A (AGM), 6.00%, 8/15/41	7,180	8,178,163
State of Illinois Toll Highway Authority, RB, Senior Priority, Series A, 5.00%, 1/01/40	5,056	5,748,258
		13,926,421
New York 13.4%		
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	9,309,960
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	16,197,357
Municipal Bonds Transferred to Tender Option Bond Trusts (h)		
New York (continued)		
City of New York New York Municipal Water Finance Authority, Refunding RB, Water & Sewer System, 2nd General Resolution (continued):		
Series HH, 5.00%, 6/15/31 (i)	\$ 8,610	\$ 9,742,559
Hudson Yards Infrastructure Corp., RB, Fiscal 2012, Series A, 5.75%, 2/15/47 (i)	4,520	5,223,705
New York Liberty Development Corp., RB, 1 World Trade Center Port Authority Consolidated Bonds, 5.25%, 12/15/43	18,104	20,523,200
New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51 (i)	6,600	7,618,443
		68,615,224
Pennsylvania 0.6%		
Pennsylvania Turnpike Commission, RB, Sub-Series A, 5.50%, 12/01/42	2,505	2,968,801
Washington 1.8%		
City of Bellingham Washington, RB, Water & Sewer, 5.00%, 8/01/40	7,966	8,909,177
Total Municipal Bonds Transferred to Tender Option Bond Trusts 24.0%		122,333,053
Total Long-Term Investments (Cost \$531,405,122) 111.8%		570,876,576

Short-Term Securities

Shares

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BlackRock Liquidity Funds, MuniCash, Institutional Class, 0.64% (j)(k)	6,949,033	6,951,813
Total Short-Term Securities		
(Cost \$6,951,273) 1.4%		6,951,813

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BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2017

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

	Value
Total Investments (Cost \$538,356,395*) 113.2%	\$ 577,828,389
Other Assets Less Liabilities 0.1%	572,111
Liability for TOB Trust Certificates, Including Interest Expense and Fees Payable (13.3)%	(67,862,700)
Net Assets Applicable to Common Shares 100.0%	\$ 510,537,800

* As of July 31, 2017, gross unrealized appreciation and depreciation based on cost for U.S. federal income tax purposes were as follows:

Tax cost	\$ 469,780,579
Gross unrealized appreciation	\$ 46,197,402
Gross unrealized depreciation	\$ (5,906,115)
Net unrealized appreciation	\$ 40,291,287

Notes to Schedule of Investments

- (a) 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.
- (b) 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.
- (c) Zero-coupon bond.
- (d) Issuer filed for bankruptcy and/or is in default.
- (e) Non-income producing security.
- (f) 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.
- (g) When-issued security.
- (h) 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.
- (i) 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 agreements, which expire between February 15, 2019 to November 15, 2019, is \$11,849,809.

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(j) During the period ended July 31, 2017, 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, 2017	Net Activity	Shares Held at July 31, 2017	Value at July 31, 2017	Income	Net Realized Gain	Change in Unrealized Appreciation
BlackRock Liquidity Funds, MuniCash, Institutional Class	1,057,065	5,891,968	6,949,033	\$ 6,951,813	\$ 3,680	\$ 433	\$ 444

(k) Current yield as of period end.

Derivative Financial Instruments Outstanding as of Period End

Futures Contracts

Description	Number of Contracts	Expiration Date	Notional Amount (000)	Value/ Unrealized Appreciation (Depreciation)
Short Contracts				
5-Year U.S. Treasury Note	(31)	September 2017	\$3,663	\$ (330)
10-Year U.S. Treasury Note	(47)	September 2017	\$5,917	1,230
Long U.S. Treasury Bond	(47)	September 2017	\$7,190	(19,159)
Ultra U.S. Treasury Bond	(16)	September 2017	\$2,632	(21,732)
Total				\$ (39,991)

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2017

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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)

Portfolio Abbreviations

AGC	Assured Guarantee Corp.
AGM	Assured Guaranty Municipal Corp.
AMT	Alternative Minimum Tax (subject to)
ARB	Airport Revenue Bonds
BAN	Bond Anticipation Notes
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
RB	Revenue Bonds

Schedule of Investments (concluded)

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. Investments classified within Level 3 have significant unobservable inputs used by the BlackRock Global Valuation Methodologies Committee (the Global Valuation Committee) in determining the price for Fair Valued Investments. Level 3 investments include equity or debt issued by privately held companies or funds. There may not be a secondary market, and/or there are a limited number of investors. Level 3 investments may also be adjusted to reflect illiquidity and/or non-transferability, with the amount of such discount estimated by the Global Valuation Committee in the absence of market information.

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		\$ 570,876,576		\$ 570,876,576
Short-Term Securities	\$ 6,951,813			6,951,813
Total	\$ 6,951,813	\$ 570,876,576		\$ 577,828,389
Derivative Financial Instruments²				
Assets:				
Interest rate contracts	\$ 1,230			\$ 1,230
Liabilities:				
Interest rate contracts	(41,221)			(41,221)
Total	\$ (39,991)			\$ (39,991)

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.

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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, TOB Trust Certificates of \$(67,756,523) are categorized as Level 2 within the disclosure hierarchy.

During the ended July 31, 2017, there were no transfers between levels.

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2017

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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 25, 2017

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 25, 2017

By: /s/ Neal J. Andrews
Neal J. Andrews

Chief Financial Officer (principal financial officer) of

BlackRock MuniAssets Fund, Inc.

Date: September 25, 2017