

BLACKROCK MUNIASSETS FUND, INC.

Form N-Q

March 29, 2011

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: 04/30/2011

Date of reporting period: 01/31/2011

Item 1 Schedule of Investments

Schedule of Investments January 31, 2011 (Unaudited)

BlackRock MuniAssets Fund, Inc. (MUA)
 (Percentages shown are based on Net Assets)

Municipal Bonds	Par (000)	Value
Alabama 0.7%		
Alabama State Docks Department, Refunding RB, 6.00%, 10/01/40	\$ 1,285	\$ 1,257,013
County of Jefferson Alabama, RB, Series A, 5.25%, 1/01/17	530	502,837
		1,759,850
Alaska 0.2%		
Alaska Industrial Development & Export Authority, RB, Williams Lynxs, Alaska Cargoport, AMT, 7.80%, 5/01/14	395	385,007
Arizona 5.2%		
Maricopa County IDA Arizona, RB, Arizona Charter Schools Project, Series A, 6.63%, 7/01/20	1,520	1,158,605
Phoenix IDA Arizona, Refunding RB, America West Airlines Inc. Project, AMT, 6.30%, 4/01/23	4,800	3,938,736
Pima County IDA, RB: Arizona Charter Schools Project, Series E, 7.25%, 7/01/31	1,365	1,327,408
Tucson Electric Power Co., Series A, 5.25%, 10/01/40	2,380	2,103,944
Pima County IDA, Refunding RB, Charter Schools II, Series A, 6.75%, 7/01/31	670	615,556
Salt Verde Financial Corp., RB, Senior: 5.00%, 12/01/32	1,840	1,583,504
5.00%, 12/01/37	1,350	1,144,017
Show Low Improvement District, Special Assessment Bonds, District No. 5, 6.38%, 1/01/15	575	576,270
University Medical Center Corp., Arizona, RB: 6.25%, 7/01/29	280	285,482
6.50%, 7/01/39	500	511,990
		13,245,512
Arkansas 0.4%		
County of Little River Arkansas, Refunding RB, Georgia-Pacific Corp. Project, AMT, 5.60%, 10/01/26	1,030	942,471
California 3.2%		
California Statewide Communities Development Authority, Refunding RB:	1,290	1,178,247

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American Baptist Homes of the
West, 6.25%, 10/01/39

Municipal Bonds	Par (000)	Value
California (concluded)		
California Statewide Communities Development Authority, Refunding RB (concluded):		
Senior Living, Southern California, 7.00%, 11/15/29	\$ 600	\$ 614,526
Senior Living, Southern California, 7.25%, 11/15/41	2,060	2,131,276
City of Fontana California, Special Tax Bonds, Refunding, Community Facilities District No. 22-Sierra, Series H, 6.00%, 9/01/34	1,320	1,146,750
State of California, GO, Various Purpose, 6.00%, 3/01/33	3,075	3,128,628
		8,199,427
Colorado 1.6%		
Colorado Health Facilities Authority, Refunding RB, Total Longterm Care National Obligated Group Project, Series A, 6.00%, 11/15/30		
	610	565,378
E-470 Public Highway Authority, Refunding RB, CAB, 7.08%, 9/01/35 (a)	2,190	336,209
Plaza Metropolitan District No. 1 Colorado, Tax Allocation Bonds, Tax Increment: Public Improvement Fee, 8.00%, 12/01/25	2,850	2,763,645
Subordinate Public Improvement Fee, 8.13%, 12/01/25	525	465,014
		4,130,246
Connecticut 2.9%		
Connecticut State Development Authority, RB, AFCO Cargo BDL LLC Project, AMT, 8.00%, 4/01/30		
	3,490	3,154,262
Harbor Point Infrastructure Improvement District, Tax Allocation Bonds, Harbor Point Project, Series A, 7.88%, 4/01/39	2,340	2,357,480
Mohegan Tribe of Indians of Connecticut, RB, Public Improvement, Priority Distribution, 6.25%, 1/01/31	2,610	1,988,533
		7,500,275

Portfolio Abbreviations

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To simplify the listings of portfolio holdings in the Schedule of Investments, the names and descriptions of many of the securities have been abbreviated according to the following list:

ACA	ACA Financial Guaranty Corp.
AGC	Assured Guaranty Corp.
AGM	Assured Guaranty Municipal Corp.
AMBAC	American Municipal Bond Assurance Corp.
AMT	Alternative Minimum Tax (subject to)
CAB	Capital Appreciation Bonds
EDA	Economic Development Authority
EDC	Economic Development Corp.
ERB	Education Revenue Bonds
GO	General Obligation Bonds
HDA	Housing Development Authority
IDA	Industrial Development Authority
MRB	Mortgage Revenue Bonds
NPFGC	National Public Finance Guarantee Corp.
RB	Revenue Bonds
TE	Tax-Exempt
TIF	Tax Increment Financing

BLACKROCK MUNIASSETS FUND, INC.

JANUARY 31, 2011

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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)
(Percentages shown are based on Net Assets)

Municipal Bonds	Par (000)	Value
Delaware 1.2%		
County of Sussex Delaware, RB, NRG Energy, Inc., Indian River Project, 6.00%, 10/01/40	\$ 1,000	\$ 959,840
Delaware State EDA, RB, Exempt Facilities, Indian River Power, 5.38%, 10/01/45	2,505	2,208,057
		<u>3,167,897</u>
District of Columbia 2.1%		
District of Columbia, RB, Methodist Home District of Columbia, Series A: 7.38%, 1/01/30	985	963,822
7.50%, 1/01/39	1,615	1,574,367
District of Columbia Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, 6.50%, 5/15/33	1,055	1,012,969
Metropolitan Washington Airports Authority, RB, CAB, Second Senior Lien, Series B (AGC), 6.55%, 10/01/30 (a)	7,000	1,875,580
		<u>5,426,738</u>
Florida 9.0%		
County of Miami-Dade Florida, Refunding RB, Miami International Airport, Series A-1, 5.38%, 10/01/41	705	653,880
Greater Orlando Aviation Authority Florida, RB, Special Purpose, JetBlue Airways Corp., AMT, 6.38%, 11/15/26	1,180	1,080,585
Harbor Bay Community Development District Florida, Special Assessment Bonds, Series A, 7.00%, 5/01/33	455	420,807
Hillsborough County IDA, RB, AMT, National Gypsum Co.:		
Series A, 7.13%, 4/01/30	2,000	1,777,860
Series B, 7.13%, 4/01/30	1,540	1,368,952
Jacksonville Economic Development Commission, RB, Gerdau Ameristeel US Inc., AMT, 5.30%, 5/01/37	1,300	990,925
Jacksonville Economic Development Commission, Refunding RB, Florida Proton Therapy Institute, Series A, 6.00%, 9/01/17	765	764,541
	2,620	1,971,891

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Lee County IDA Florida, RB, Series A, Lee Charter Foundation, 5.38%, 6/15/37		
Mid-Bay Bridge Authority, RB, Series A, 7.25%, 10/01/40 (b)	2,695	2,647,891
Midtown Miami Community Development District, Special Assessment Bonds, Series A, 6.25%, 5/01/37	3,255	2,850,827
Palm Beach County Health Facilities Authority, RB, Acts Retirement Life Community, 5.50%, 11/15/33	2,000	1,814,320
Santa Rosa Bay Bridge Authority, RB, 6.25%, 7/01/28	3,040	1,404,662
Sarasota County Health Facilities Authority, Refunding RB, Village on the Isle Project: 5.50%, 1/01/27	585	501,035
5.50%, 1/01/32	795	654,436

Municipal Bonds	Par (000)	Value
Florida (concluded)		
Sarasota County Public Hospital District, RB, Sarasota Memorial Hospital Project, Series A, 5.63%, 7/01/39	\$ 615	\$ 602,583
Sumter Landing Community Development District Florida, RB, Sub- Series B, 5.70%, 10/01/38	2,350	1,757,401
Tolomato Community Development District, Special Assessment Bonds, Special Assessment, 6.65%, 5/01/40	2,680	1,776,599
		23,039,195

Georgia 3.2%		
City of Atlanta Georgia, Tax Allocation Bonds, Princeton Lakes Project, 5.50%, 1/01/31	640	521,139
Clayton County Development Authority, RB, Delta Air Lines Inc. Project, Series A, 8.75%, 6/01/29	1,990	2,260,520
County of Clayton Georgia, Tax Allocation Bonds, Ellenwood Project, 7.50%, 7/01/33	1,655	1,470,716
DeKalb County Hospital Authority Georgia, RB, DeKalb Medical Center Inc. Project, 6.13%, 9/01/40	1,100	1,000,659
Gainesville & Hall County Development Authority, Refunding RB, Acts Retirement Life Community, Series A-2: 6.38%, 11/15/29	700	694,246
6.63%, 11/15/39	235	233,623
Rockdale County Development Authority, RB, Visy Paper Project, Series A, AMT, 6.13%, 1/01/34	2,435	2,125,731
		8,306,634

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Guam 1.5%

Guam Government Waterworks Authority, Refunding RB, Water, 6.00%, 7/01/25	750	744,600
Territory of Guam, GO, Series A: 6.00%, 11/15/19	365	371,694
6.75%, 11/15/29	635	670,192
7.00%, 11/15/39	660	704,675
Territory of Guam, RB, Section 30, Series A, 5.63%, 12/01/29	1,460	1,404,958
		<u>3,896,119</u>

Illinois 6.0%

City of Chicago Illinois, Refunding RB, American Airlines Inc. Project, 5.50%, 12/01/30	4,140	3,165,899
Illinois Finance Authority, RB: Navistar International, Recovery Zone, 6.50%, 10/15/40	950	945,298
Roosevelt University Project, 6.50%, 4/01/44	2,470	2,446,486
Rush University Medical Center Obligation Group, Series B, 7.25%, 11/01/30	1,170	1,243,055
Illinois Finance Authority, Refunding RB: CAB, Clare Water Tower, Series B, 0.04%, 5/15/50 (a)	885	10,974
Clare Water Tower, Series A-7, 6.13%, 5/15/41	2,065	1,182,006

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)
(Percentages shown are based on Net Assets)

Municipal Bonds	Par (000)	Value
Illinois (concluded)		
Illinois Finance Authority, Refunding RB (concluded):		
Friendship Village of Schaumburg, 7.25%, 2/15/45	\$ 2,370	\$ 2,212,466
Primary Health Care Centers Program, 6.60%, 7/01/24	685	575,859
Metropolitan Pier & Exposition Authority, Refunding RB, CAB, McCormick Place Expansion Project, Series B (AGM), 6.25%, 6/15/46 (a)	5,845	510,911
Railsplitter Tobacco Settlement Authority, RB: 5.50%, 6/01/23	830	785,819
6.00%, 6/01/28	710	677,581
Village of Lincolnshire Illinois, Special Tax Bonds, Sedgebrook Project, 6.25%, 3/01/34	1,070	878,941
Village of Wheeling Illinois, Tax Allocation Bonds, North Milwaukee/Lake-Cook TIF Project, 6.00%, 1/01/25	825	724,985
		<u>15,360,280</u>
Indiana 0.4%		
Vigo County Hospital Authority Indiana, RB, Union Hospital Inc. (c):		
5.70%, 9/01/37	615	505,007
5.75%, 9/01/42	765	624,164
		<u>1,129,171</u>
Kentucky 0.3%		
Kentucky Economic Development Finance Authority, Refunding RB, Owensboro Medical Health System, Series A, 6.38%, 6/01/40	935	877,928
Louisiana 1.2%		
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp. Projects, 6.75%, 11/01/32	3,000	3,022,500

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Maryland 2.8%		
Maryland EDC, RB, Transportation Facilities Project, Series A, 5.75%, 6/01/35	2,145	1,954,331
Maryland EDC, Refunding RB, CNX Marine Terminals, Inc., 5.75%, 9/01/25	2,435	2,266,596
Maryland Health & Higher Educational Facilities Authority, RB, Washington Christian Academy, 5.50%, 7/01/38 (d)(e)	590	235,994
Maryland Health & Higher Educational Facilities Authority, Refunding RB, Doctor s Community Hospital, 5.75%, 7/01/38	1,845	1,551,682
Maryland State Energy Financing Administration, RB, Cogeneration, AES Warrior Run, AMT, 7.40%, 9/01/19	1,080	1,076,857
		<u>7,085,460</u>

Municipal Bonds	Par (000)	Value
Massachusetts 0.7%		
Massachusetts Development Finance Agency, RB, Foxborough Regional Charter School, Series A, 7.00%, 7/01/42	\$ 610	\$ 613,288
Massachusetts Development Finance Agency, Refunding RB, Eastern Nazarene College, 5.63%, 4/01/29	80	68,633
Massachusetts Health & Educational Facilities Authority, RB, Jordan Hospital, Series E, 6.75%, 10/01/33	1,150	1,039,784
		<u>1,721,705</u>

Michigan 2.7%		
Advanced Technology Academy, RB, 6.00%, 11/01/37	900	732,681
County of Wayne Michigan, GO, Building Improvement, Series A, 6.75%, 11/01/39	540	540,999
Monroe County Hospital Finance Authority, Refunding RB, Mercy Memorial Hospital Corp. Obligation, 5.50%, 6/01/35	1,740	1,359,566
Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, 8.25%, 9/01/39	3,735	4,158,960
		<u>6,792,206</u>

Minnesota 0.7%		
City of Minneapolis Minnesota, Refunding RB, Fairview Health Services, Series A, 6.75%, 11/15/32	1,785	1,897,901

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Missouri 0.5%

Kirkwood IDA Missouri, RB, Aberdeen Heights, Series A, 8.25%, 5/15/39	1,370	1,379,412
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Multi-State 0.3%

MuniMae TE Bond Subsidiary LLC, 7.50%, 6/30/49 (c)(f)(g)	919	854,238
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Nevada 0.2%

County of Clark Nevada, Special Assessment Bonds, Special Improvement District No. 142, Local Improvement, 6.38%, 8/01/23	600	540,462
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New Hampshire 0.4%

New Hampshire Health & Education Facilities Authority, RB, Catholic Medical Center, 5.00%, 7/01/36	1,165	923,519
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New Jersey 6.4%

New Jersey EDA, RB, Continental Airlines Inc. Project, AMT:		
6.63%, 9/15/12	1,000	1,005,760
6.25%, 9/15/19	2,000	1,891,560
6.40%, 9/15/23	1,000	945,030
6.25%, 9/15/29	3,330	3,014,283
9.00%, 6/01/33 (g)	1,250	1,303,012
New Jersey EDA, Refunding RB, Newark Airport Marriott Hotel, 7.00%, 10/01/14	2,500	2,485,700
New Jersey Educational Facilities Authority, Refunding RB, University of Medicine & Dentistry, Series B, 7.50%, 12/01/32	2,510	2,716,673

BLACKROCK MUNIASSETS FUND, INC.

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Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)
(Percentages shown are based on Net Assets)

Municipal Bonds	Par (000)	Value
New Jersey (concluded)		
New Jersey Health Care Facilities Financing Authority, RB, Pascack Valley Hospital Association, 6.63%, 7/01/36 (d)(e)	\$ 2,000	\$ 20
New Jersey Health Care Facilities Financing Authority, Refunding RB, St. Joseph's Healthcare System, 6.63%, 7/01/38	2,410	2,363,583
New Jersey Transportation Trust Fund Authority, RB, CAB, Transportation System, Series C (AMBAC), 5.05%, 12/15/35 (a)	3,450	634,973
		<u>16,360,594</u>
New York 9.0%		
Brooklyn Arena Local Development Corp., RB, Barclays Center Project, 6.38%, 7/15/43	1,000	973,400
Chautauqua County Industrial Deve- lopment Agency, RB, NRG Dunkirk Power Project, 5.88%, 4/01/42	2,485	2,341,367
Dutchess County Industrial Development Agency New York, Refunding RB, St. Francis Hospital, Series A, 7.50%, 3/01/29	1,400	1,319,556
Metropolitan Transportation Authority, RB, Series 2008C, 6.50%, 11/15/28	3,685	4,030,174
New York City Industrial Development Agency, RB: American Airlines Inc., JFK International Airport, AMT, 8.00%, 8/01/28 (g)	1,045	1,099,194
British Airways Plc Project, AMT, 7.63%, 12/01/32	2,400	2,404,752
Series C, 6.80%, 6/01/28	510	524,540
Special Needs Facilities Pooled Program, Series C-1, 6.63%, 7/01/29	1,100	953,436
New York City Municipal Water Finance Authority, RB, Second General Resolution, Series EE, 5.50%, 6/15/43	4,510	4,567,953
New York Liberty Development Corp., Refunding RB, Second Priority, Bank of America Tower at One Bryant Park Project, 6.38%, 7/15/49	750	753,772
New York State Dormitory Authority, RB, NYU Hospital Center, Series A, 6.00%,	1,325	1,292,763

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7/01/40

Port Authority of New York & New Jersey, RB, JFK International Air Terminal:		
6.00%, 12/01/36	795	762,540
6.00%, 12/01/42	775	731,499

Yonkers Industrial Development Agency New York, RB, Sarah Lawrence College Project, Series A, 6.00%, 6/01/41	1,240	1,219,466
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22,974,412

North Carolina 1.5%

North Carolina Capital Facilities Finance Agency, RB, Duke Energy Carolinas, Series B, 4.38%, 10/01/31	985	878,167
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Municipal Bonds	Par (000)	Value
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North Carolina (concluded)

North Carolina Capital Facilities Finance Agency, Refunding RB, Duke Energy Carolinas, Series B, 4.63%, 11/01/40	\$ 985	\$ 869,223
North Carolina Medical Care Commission, Refunding RB, First Mortgage, Deerfield, Series A, 6.13%, 11/01/38	2,335	2,185,957

3,933,347

Ohio 1.7%

Buckeye Tobacco Settlement Financing Authority, RB, Asset-Backed, Senior Series A-2, 5.13%, 6/01/24	2,245	1,686,736
State of Ohio, RB, Ford Motor Co. Project, AMT, 5.75%, 4/01/35	2,890	2,603,023

4,289,759

Pennsylvania 8.0%

Allegheny County Hospital Development Authority, Refunding RB, Health System, West Penn, Series A, 5.38%, 11/15/40	3,040	2,020,262
Bucks County IDA, RB, Ann s Choice Inc. Facility, Series A: 6.13%, 1/01/25	200	189,508
6.25%, 1/01/35	1,550	1,373,579
Cumberland County Municipal Authority, RB, Diakon Lutheran, 6.38%, 1/01/39	3,655	3,536,907
Lancaster County Hospital Authority, RB, Brethren Village Project, Series A: 6.25%, 7/01/26	685	652,442
6.50%, 7/01/40	990	882,635
Montgomery County IDA Pennsylvania, MRB, Whitmarsh Continuing Care, 6.13%, 2/01/28	2,330	1,981,432

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Pennsylvania Economic Development Financing Authority, RB, National Gypsum Co., Series A, AMT, 6.25%, 11/01/27	3,250	2,654,860
Philadelphia Authority for Industrial Development, RB, AMT: Commercial Development, 7.75%, 12/01/17	5,000	5,002,300
Subordinate, Air Cargo, Series A, 7.50%, 1/01/25	2,270	2,120,452
		<u>20,414,377</u>
Puerto Rico 0.8%		
Puerto Rico Sales Tax Financing Corp., RB, First Sub-Series A, 6.50%, 8/01/44	1,650	1,707,634
Puerto Rico Sales Tax Financing Corp., Refunding RB, CAB, First Sub-Series C, 6.52%, 8/01/38 (a)	2,630	415,935
		<u>2,123,569</u>
Rhode Island 0.8%		
Central Falls Detention Facility Corp., Refunding RB, 7.25%, 7/15/35	2,495	1,996,424

Schedule of Investments (continued)

BlackRock MuniAssets Fund, Inc. (MUA)
(Percentages shown are based on Net Assets)

Municipal Bonds	Par (000)	Value
South Carolina 0.4%		
Connector 2000 Association Inc., RB, CAB, Senior Series B, 12.48%, 1/01/14 (a)(d)(e)	\$ 1,485	\$ 170,463
South Carolina Jobs-EDA, Refunding RB, Palmetto Health, 5.50%, 8/01/26	975	922,867
		<u>1,093,330</u>
Tennessee 0.5%		
Knox County Health Educational & Housing Facilities Board Tennessee, Refunding RB, Covenant, Series A (AGM), 4.69%, 1/01/40 (a)	5,820	978,807
Shelby County Health Educational & Housing Facilities Board, RB, Village at Germantown, 6.25%, 12/01/34	355	284,366
		<u>1,263,173</u>
Texas 11.3%		
Bexar County Health Facilities Development Corp., RB, Army Retirement Residence Project, 6.20%, 7/01/45	2,985	2,796,438
Brazos River Authority, Refunding RB, Texas Utility Co., Series, AMT, 7.70%, 4/01/33	2,550	886,686
Central Texas Regional Mobility Authority, RB:		
CAB, 7.56%, 1/01/29 (a)	2,000	555,440
CAB, 7.65%, 1/01/30 (a)	1,170	293,272
CAB, 7.71%, 1/01/31 (a)	2,000	462,380
CAB, 7.77%, 1/01/32 (a)	3,500	753,340
CAB, 7.78%, 1/01/33 (a)	1,540	308,000
Senior Lien, 5.75%, 1/01/25	650	626,470
City of Houston Texas, RB, Special Facilities, Continental Airlines, Series E, AMT, 6.75%, 7/01/21	2,685	2,616,425
Harris County Health Facilities Development Corp., Refunding RB, Memorial Hermann Healthcare System, Series B, 7.13%, 12/01/31	1,500	1,610,850
La Vernia Higher Education Finance Corp., RB, KIPP Inc., 6.38%, 8/15/44	860	840,779
Love Field Airport Modernization Corp., RB, Southwest Airlines Co. Project,	3,975	3,493,747

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5.25%, 11/01/40 Matagorda County Navigation District No. 1 Texas, Refunding RB, Central Power & Light Co. Project, Series A, 6.30%, 11/01/29	1,240	1,254,074
North Texas Tollway Authority, RB, Toll, Second Tier, Series F, 6.13%, 1/01/31	2,775	2,778,885
Tarrant County Cultural Education Facilities Finance Corp., RB, Series A: CC Young Memorial Home, 8.00%, 2/15/38	1,035	1,031,533
Senior Living Center Project, 8.25%, 11/15/44	2,490	2,357,632
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien: LBJ Infrastructure Group LLC, LBJ Freeway Managed Lanes Project, 7.00%, 6/30/40	2,640	2,657,846

Municipal Bonds	Par (000)	Value
Texas (concluded)		
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien (concluded): NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39	\$ 2,330	\$ 2,322,567
Texas State Public Finance Authority, Refunding, ERB, KIPP Inc., Series A (ACA): 5.00%, 2/15/28	575	500,825
5.00%, 2/15/36	850	694,263
		28,841,452
U.S. Virgin Islands 1.2%		
United States Virgin Islands, Refunding RB, Senior Secured, Hovensa Coker Project, AMT, 6.50%, 7/01/21	3,000	2,978,100
Utah 0.7%		
County of Carbon Utah, Refunding RB, Laidlaw Environmental, Series A, AMT, 7.45%, 7/01/17	1,660	1,662,955
Vermont 0.3%		
Vermont Economic Development Authority, Refunding MRB, Wake Robin Corp. Project, Series A (ACA), 6.30%, 3/01/33	950	838,955
Virginia 0.9%		
Dulles Town Center Community Development Authority, Special Assessment Bonds, Dulles Town Center Project, 6.25%, 3/01/26	1,410	1,316,066

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Fairfax County EDA, Refunding RB,

Goodwin House Inc.:

5.13%, 10/01/37	585	498,713
5.13%, 10/01/42	450	375,669
Lexington IDA, Refunding MRB, Kendal at Lexington, Series A, 5.38%, 1/01/28	40	32,352

2,222,800

Wisconsin 2.1%

Wisconsin Health & Educational

Facilities Authority, RB:

New Castle Place Project, Series A,

7.00%, 12/01/31	1,855	1,466,359
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Wheaton Franciscan Healthcare,

5.25%, 8/15/34	3,695	3,110,746
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Wisconsin Health & Educational

Facilities Authority, Refunding RB, St.

John's Communities Inc., Series A:

7.25%, 9/15/29	250	247,080
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7.63%, 9/15/39	505	504,758
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5,328,943

Wyoming 1.3%

County of Sweetwater Wyoming,

Refunding RB, FMC Corp. Project,

AMT, 5.60%, 12/01/35	3,600	3,392,856
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Total Municipal Bonds 94.3%		241,299,199
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Schedule of Investments (concluded)

BlackRock MuniAssets Fund, Inc. (MUA)
(Percentages shown are based on Net Assets)

Municipal Bonds Transferred to Tender Option Bond Trusts (h)	Par (000)	Value
District of Columbia 1.6%		
District of Columbia Water & Sewer Authority, RB, Series A, 6.00%, 10/01/35	\$ 3,951	\$ 4,269,806
Florida 3.2%		
County of Miami-Dade Florida, RB, Miami International Airport, Series A, AMT (AGC), 5.25%, 10/01/33	8,870	8,153,659
Virginia 3.4%		
Virginia HDA, RB, Sub-Series H-1 (NPFGC), 5.38%, 7/01/36	8,690	8,692,867
Total Municipal Bonds Transferred to Tender Option Bond Trusts 8.2%		21,116,332
Total Long-Term Investments (Cost \$277,348,751) 102.5%		262,415,531

Short-Term Securities	Shares	
FFI Institutional Tax-Exempt Fund, 0.16% (i)(j)	4,352,003	4,352,003
Total Short-Term Securities (Cost \$4,352,003) 1.7%		4,352,003
Total Investments (Cost \$281,700,754*) 104.2%		266,767,534
Liabilities in Excess of Other Assets 0.0%		(40,029)
Liability for Trust Certificates, Including Interest Expense and Fees Payable (4.2)%		(10,764,542)
Net Assets 100.0%		\$ 255,962,963

* The cost and unrealized appreciation (depreciation) of investments as of January 31, 2011, as computed for

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federal income tax purposes, were as follows:

Aggregate cost	\$ 271,004,131
Gross unrealized appreciation	\$ 7,903,217
Gross unrealized depreciation	(22,895,460)
Net unrealized depreciation	\$ (14,992,243)

(a) Represents a zero-coupon bond. Rate shown reflects the current yield as of report date.

(b) When-issued security. Unsettled when-issued transactions were as follows:

Counterparty	Value	Unrealized Appreciation
Goldman Sachs & Co.	\$ 2,647,891	\$ 32,987

(c) Security exempt from registration under Rule 144A of the Securities Act of 1933. These securities may be resold in transactions exempt from registration to qualified institutional investors.

(d) Issuer filed for bankruptcy and/or is in default of interest payments.

(e) Non-income producing security.

(f) Security represents a beneficial interest in a trust. The collateral deposited into the trust is federally tax-exempt revenue bonds issued by various state or local governments, or their respective agencies or authorities. The security is subject to remarketing prior to its stated maturity.

(g) Variable rate security. Rate shown is as of report date.

(h) Securities represent bonds transferred to a tender option bond trust in exchange for which the Fund acquired residual interest certificates. These securities serve as collateral in a financing transaction.

(i) Investments in companies considered to be an affiliate of the Fund during the period, 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, 2010	Net Activity	Shares Held at January 31, 2011	Income
FFI Institutional Tax-Exempt Fund	149,925	4,202,078	4,352,003	\$ 3,806

(j) Represents the current yield as of report date.

Fair Value Measurements - Various inputs are used in determining the fair value of investments, which are as follows:

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Level 1 price quotations in active markets/exchanges for identical assets and liabilities

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)

The inputs or methodologies used for valuing securities are not necessarily an indication of the risk associated with investing in those securities. For information about the Fund's policy regarding valuation of investments and other significant accounting policies, please refer to the Fund's most recent financial statements as contained in its semi-annual report.

The following table summarizes the inputs used as of January 31, 2011 in determining the fair valuation of the Fund's investments:

Valuation Inputs	Level 1	Level 2	Level 3	Total
Assets:				
Investments in Securities:				
Long-Term Investments ¹		\$ 262,415,531		\$ 262,415,531
Short-Term Securities	\$ 4,352,003			4,352,003
Total	\$ 4,352,003	\$ 262,415,531		\$ 266,767,534

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

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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: March 25, 2011

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: March 25, 2011

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

Date: March 25, 2011