

BLACKROCK MUNIASSETS FUND, INC.
Form N-Q
March 27, 2012
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: 04/30/2012

Date of reporting period: 01/31/2012

Item 1 – Schedule of Investments

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Schedule of Investments January 31, 2012 (Unaudited)

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

	Par (000)	Value
Municipal Bonds		
Alabama 0.7%		
Alabama State Docks Department, Refunding RB, 6.00%, 10/01/40	\$ 2,165	\$ 2,402,349
County of Jefferson Alabama, RB, Series A, 5.25%, 1/01/17	895	869,099
		3,271,448
Alaska 1.7%		
Northern Tobacco Securitization Corp., RB, Asset-Backed, Series A:		
4.63%, 6/01/23	1,890	1,853,145
5.00%, 6/01/32	1,500	1,228,980
5.00%, 6/01/46	6,885	5,067,842
		8,149,967
Arizona 3.4%		
Maricopa County IDA Arizona, RB, Arizona Charter Schools Project, Series A, 6.63%, 7/01/20	2,120	1,683,089
Phoenix IDA Arizona, ERB, Great Hearts Academies - Veritas Project:		
6.30%, 7/01/42	500	502,645
6.40%, 7/01/47	425	427,597
Phoenix IDA Arizona, Refunding RB, America West Airlines Inc. Project, AMT, 6.30%, 4/01/23	7,750	6,749,165
Pima County IDA, RB, Arizona Charter School Project, Series E, 7.25%, 7/01/31	2,255	2,260,164
Pima County IDA, Refunding RB, Charter Schools II, Series A, 6.75%, 7/01/31	660	660,264
Salt Verde Financial Corp., RB, Senior, 5.00%, 12/01/32	1,840	1,832,806
Show Low Improvement District, Special Assessment Bonds, District No. 5, 6.38%, 1/01/15	450	453,424
University Medical Center Corp. Arizona, RB:		
6.25%, 7/01/29	820	943,041
6.50%, 7/01/39	500	564,125
		16,076,320
Arkansas 0.4%		
County of Little River Arkansas, Refunding RB, Georgia-Pacific Corp. Project, AMT, 5.60%, 10/01/26	1,740	1,745,498
California 2.7%		
California Statewide Communities Development Authority, Refunding RB:		
American Baptist Homes of the West, 6.25%, 10/01/39	2,175	2,284,055
Senior Living, Southern California, 7.00%, 11/15/29	1,000	1,132,240
Municipal Bonds	Par (000)	Value
California (concluded)		

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City of Fontana California, Special Tax Bonds, Refunding RB, Community Facilities District No. 22-Sierra, Series H, 6.00%, 9/01/34	\$ 2,320	\$ 2,333,062
City of San Jose California, RB, Convention Center Expansion & Renovation Project:		
6.50%, 5/01/36	900	1,014,552
6.50%, 5/01/42	2,220	2,491,972
Tobacco Securitization Authority of Southern California, Refunding RB, Series A1-SNR, 5.00%, 6/01/37	4,860	3,469,165
		12,725,046
Colorado 1.5%		
E-470 Public Highway Authority Colorado, Refunding RB, CAB, 7.08%, 9/01/35 (a)	3,695	848,076
Plaza Metropolitan District No. 1 Colorado, Tax Allocation Bonds, Public Improvement Fee, Tax Increment:		
8.00%, 12/01/25	4,850	5,012,330
Subordinate, 8.13%, 12/01/25	1,025	996,228
		6,856,634
Connecticut 0.9%		
Connecticut State Development Authority, RB, AFCO Cargo BDL LLC Project, AMT, 8.00%, 4/01/30	3,450	2,071,484
Mohegan Tribe of Indians of Connecticut, RB, Public Improvement, Priority Distribution:		
6.25%, 1/01/31	1,370	1,132,620
5.25%, 1/01/33 (b)	1,500	1,056,705
		4,260,809
Delaware 1.0%		
County of Sussex Delaware, RB, NRG Energy, Inc., Indian River Project, 6.00%, 10/01/40	1,000	1,036,740
Delaware State EDA, RB, Exempt Facilities, Indian River Power, 5.38%, 10/01/45	3,625	3,660,960
		4,697,700
District of Columbia 2.2%		
District of Columbia, RB, Methodist Home District of Columbia, Series A:		
7.38%, 1/01/30	1,665	1,709,572
7.50%, 1/01/39	2,725	2,797,648
District of Columbia Tobacco Settlement Financing Corp., Refunding RB, Asset- Backed, 6.50%, 5/15/33	1,785	1,934,155

Schedule of Investments (continued)

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

	Par (000)	Value
Municipal Bonds		
District of Columbia (concluded)		
Metropolitan Washington Airports Authority, RB, CAB, Second Senior Lien, Series B (AGC) (a):		
6.56%, 10/01/30	\$ 7,000	\$ 2,769,270
6.78%, 10/01/39	5,000	1,145,750
		10,356,395
Florida 10.8%		
Greater Orlando Aviation Authority Florida, RB, Special Purpose, JetBlue Airways Corp., AMT, 6.38%, 11/15/26	4,500	4,502,835
Harbor Bay Community Development District Florida, Special Assessment Bonds, Series A, 7.00%, 5/01/33	455	455,168
Hillsborough County IDA, RB, AMT National Gypsum Co:		
Series A, 7.13%, 4/01/30	4,500	4,185,900
Series B, 7.13%, 4/01/30	3,100	2,883,620
Jacksonville Economic Development Commission, RB, Gerdau Ameristeel US Inc., AMT, 5.30%, 5/01/37	4,500	4,260,195
Jacksonville Economic Development Commission, Refunding RB, Florida Proton Therapy Institute, Series A, 6.00%, 9/01/17	1,365	1,461,560
Lakewood Ranch Stewardship District, Special Assessment Bonds, Lakewood Center & New Sector Projects, 8.00%, 5/01/40	1,485	1,547,697
Mid-Bay Bridge Authority, RB, Series A, 7.25%, 10/01/40	4,550	4,862,266
Midtown Miami Community Development District, Special Assessment Bonds, Series A:		
6.00%, 5/01/24	1,305	1,319,055
6.25%, 5/01/37	4,605	4,641,932
Palm Beach County Health Facilities Authority, RB, Acts Retirement Life Community, 5.50%, 11/15/33	3,500	3,633,035
Santa Rosa Bay Bridge Authority, RB, 6.25%, 7/01/28 (c)(d)	5,180	1,812,896
Sarasota County Health Facilities Authority, Refunding RB, Village On The Isle Project, 5.50%, 1/01/27	955	990,526
Sumter Landing Community Development District Florida, RB, Sub-Series B, 5.70%, 10/01/38	3,885	3,332,165
Tampa Palms Open Space & Transportation Community Development District, RB, Capital Improvement, Richmond Place Project,	1,715	1,716,183

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7.50%, 5/01/18		
Tolomato Community Development District, Special Assessment Bonds,		
6.65%, 5/01/40	4,525	1,919,596
	Par (000)	Value
Municipal Bonds		
Florida (concluded)		
Village Community Development District No. 9, Special Assessment Bonds:		
6.75%, 5/01/31	\$ 2,000	\$ 2,239,180
7.00%, 5/01/41	3,230	3,617,019
5.50%, 5/01/42 (e)	1,380	1,394,959
		50,775,787
Georgia 3.0%		
City of Atlanta Georgia, Tax Allocation Bonds, Princeton Lakes Project, 5.50%, 1/01/31	1,035	1,019,403
Clayton County Development Authority, RB, Delta Air Lines Inc. Project, Series A, 8.75%, 6/01/29	3,365	3,892,699
County of Clayton Georgia, Tax Allocation Bonds, Ellenwood Project, 7.50%, 7/01/33	2,765	2,792,263
DeKalb County Hospital Authority Georgia, RB, Dekalb Medical Center Inc. Project, 6.13%, 9/01/40	2,005	2,149,200
Gainesville & Hall County Development Authority, Refunding RB, Acts Retirement Life Community, Series A-2:		
6.38%, 11/15/29	700	793,583
6.63%, 11/15/39	880	972,435
Private Colleges & Universities Authority, RB, Mercer University Project, Series A:		
5.25%, 10/01/27	1,790	1,907,191
5.00%, 10/01/32	855	862,772
		14,389,546
Guam 1.0%		
Guam Government Waterworks Authority, Refunding RB, Water, 6.00%, 7/01/25	1,265	1,291,881
Territory of Guam, GO, Series A:		
6.00%, 11/15/19	615	676,697
6.75%, 11/15/29	1,485	1,580,842
7.00%, 11/15/39	1,115	1,180,941
		4,730,361
Illinois 4.9%		
City of Chicago Illinois, Refunding RB, American Airlines Inc. Project, 5.50%, 12/01/30 (c)(d)	7,000	1,856,190
Illinois Finance Authority, RB: Roosevelt University Project, 6.50%, 4/01/44	4,170	4,530,747
Rush University Medical Center Obligation Group, Series A, 7.25%, 11/01/30	2,000	2,492,220
Rush University Medical Center Obligation Group, Series B, 7.25%, 11/01/30	1,170	1,457,949

Schedule of Investments (continued)

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

	Par (000)	Value
Municipal Bonds		
Illinois (concluded)		
Illinois Finance Authority, Refunding RB:		
CAB Clare Water Tower, Series B, 5.00%, 5/15/50 (a)(c)(d)	\$ 1,500	\$ 2,700
Clare Water Tower, Series A-7, 6.13%, 5/15/41 (c)(d)	3,500	524,475
Friendship Village Of Schaumburg, 7.25%, 2/15/45	4,000	4,040,960
Primary Health Care Centers Program, 6.60%, 7/01/24	1,175	1,094,724
Metropolitan Pier & Exposition Authority, Refunding RB, CAB, McCormick Place Expansion Project, Series B (AGM), 6.25%, 6/15/46 (a)	9,860	1,517,158
Railsplitter Tobacco Settlement Authority, RB:		
5.50%, 6/01/23	1,400	1,597,288
6.00%, 6/01/28	710	796,137
Village of Lincolnshire Illinois, Special Tax Bonds, Sedgebrook Project, 6.25%, 3/01/34	1,800	1,679,760
Village of Wheeling Illinois, Tax Allocation Bonds, North Milwaukee/Lake-Cook TIF Project, 6.00%, 1/01/25	1,465	1,426,456
		23,016,764
Kentucky 1.1%		
Kentucky Economic Development Finance Authority, RB, Owensboro Medical Health System Series A:		
6.38%, 6/01/40	1,580	1,744,573
6.50%, 3/01/45	2,000	2,225,300
Kentucky Economic Development Finance Authority, Refunding RB, Owensboro Medical Health System Series B, 6.38%, 3/01/40	1,135	1,253,221
		5,223,094
Louisiana 1.6%		
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp. Projects, 6.75%, 11/01/32	5,000	5,398,450
Louisiana Public Facilities Authority, RB, Belle Chasse Educational Foundation Project, 6.75%, 5/01/41	1,855	2,013,454
		7,411,904
Maine 0.7%		
Maine Health & Higher Educational Facilities Authority, RB, Maine General Medical Center, 6.75%, 7/01/41	2,955	3,189,686

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	Par (000)	Value
Municipal Bonds		
Maryland 2.6%		
Maryland EDC, RB, Transportation Facilities Project, Series A, 5.75%, 6/01/35	\$ 3,615	\$ 3,729,270
Maryland EDC, Refunding RB, CNX Marine Terminals Inc., 5.75%, 9/01/25	4,785	4,959,748
Maryland Health & Higher Educational Facilities Authority, RB, Washington Christian Academy, 5.50%, 7/01/38 (c)(d)	1,000	437,530
Maryland Health & Higher Educational Facilities Authority, Refunding RB, Doctor s Community Hospital, 5.75%, 7/01/38	3,110	3,159,574
		12,286,122
Massachusetts 1.0%		
Massachusetts Development Finance Agency, RB: Eastern Nazarene College, 5.63%, 4/01/19	40	40,004
Eastern Nazarene College, 5.63%, 4/01/29	80	75,739
Foxborough Regional Charter School, Series A, 7.00%, 7/01/42	1,025	1,123,082
Tufts Medical Center, Series I, 6.75%, 1/01/36	1,490	1,672,242
Massachusetts Health & Educational Facilities Authority, RB, Jordan Hospital, Series E, 6.75%, 10/01/33	2,000	2,020,240
		4,931,307
Michigan 2.3%		
Monroe County Hospital Finance Authority, Refunding RB, Mercy Memorial Hospital Corp. Obligation, 5.50%, 6/01/35	3,000	2,995,830
Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, 8.25%, 9/01/39	6,310	7,803,072
		10,798,902
Minnesota 0.4%		
City of Minneapolis Minnesota, Refunding RB, Fairview Health Services, Series A, 6.75%, 11/15/32	1,785	2,086,897
Missouri 0.5%		
Kirkwood IDA Missouri, RB, Aberdeen Heights, Series A, 8.25%, 5/15/39	2,315	2,453,993
Nevada 0.2%		
County of Clark Nevada, Special Assessment Bonds, Special Improvement District No. 142, Local Improvement, 6.38%, 8/01/23	955	988,492

Schedule of Investments (continued)

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

	Par (000)	Value
Municipal Bonds		
New Jersey 7.5%		
New Jersey EDA, RB: Cigarette Tax, 5.75%, 6/15/29	\$ 3,180	\$ 3,322,909
Continental Airlines Inc. Project, AMT, 6.63%, 9/15/12	4,050	4,121,928
Continental Airlines Inc. Project, AMT, 6.25%, 9/15/19	2,000	1,999,800
Continental Airlines Inc. Project, AMT, 6.25%, 9/15/29	4,330	4,311,338
Continental Airlines Inc. Project, AMT, 9.00%, 6/01/33 (f)	1,250	1,281,575
Kapkowski Road Landfill Project, Series 1998B-MB, AMT, 6.50%, 4/01/31	2,250	2,387,475
New Jersey EDA, Refunding RB, Newark Airport Marriott Hotel, 7.00%, 10/01/14	4,000	4,017,880
New Jersey Educational Facilities Authority, Refunding RB, University of Medicine & Dentistry, Series B: 7.13%, 12/01/23	670	834,338
7.50%, 12/01/32	3,575	4,368,292
New Jersey Health Care Facilities Financing Authority, RB, Pascack Valley Hospital Association, 6.63%, 7/01/36 (c)(d)	3,870	39
New Jersey Health Care Facilities Financing Authority, Refunding RB: Barnabas Health, Series A, 5.63%, 7/01/37	2,650	2,783,215
St. Joseph's Healthcare System, 6.63%, 7/01/38	4,090	4,206,688
New Jersey Transportation Trust Fund Authority, RB, Transportation System, Series C (AMBAC), 5.05%, 12/15/35 (a)	6,210	1,843,811
		35,479,288
New York 5.7%		
Chautauqua County Industrial Development Agency, RB, NRG Dunkirk Power Project, 5.88%, 4/01/42	3,695	3,800,086
Dutchess County Industrial Development Agency New York, RB, St. Francis Hospital, Series B, 7.50%, 3/01/29	1,000	1,011,410
Dutchess County Industrial Development Agency New York, Refunding RB, St. Francis Hospital, Series A, 7.50%, 3/01/29	1,400	1,415,974
Metropolitan Transportation Authority, RB, Series 2008C, 6.50%, 11/15/28	5,685	7,083,396

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New York City Industrial Development

Agency, RB:

American Airlines Inc., JFK

International Airport, AMT,

8.00%, 8/01/28 (c)(d)(f)

1,765

1,590,000

	Par (000)	Value
Municipal Bonds		
New York (concluded)		
New York City Industrial Development		
Agency, RB (concluded):		
British Airways Plc Project,		
7.63%, 12/01/32	\$ 4,130	\$ 4,132,478
Series C, 6.80%, 6/01/28	860	891,046
Special Needs Facilities Pooled		
Program, Series C-1, 6.50%,		
7/01/24	610	599,227
Special Needs Facilities Pooled		
Program, Series C-1, 6.63%,		
7/01/29	1,100	1,050,687
New York Liberty Development Corp.,		
Refunding RB, Second Priority, Bank of		
America Tower at One Bryant Park		
Project, 6.38%, 7/15/49		
	1,270	1,374,775
Port Authority of New York & New Jersey,		
RB, JFK International Air Terminal,		
6.00%, 12/01/36		
	1,340	1,450,550
Yonkers Industrial Development Agency		
New York, RB, Sarah Lawrence College		
Project, Series A, 6.00%, 6/01/41		
	2,090	2,321,008
		26,720,637
North Carolina 1.6%		
North Carolina Medical Care		
Commission, RB:		
First Mortgage, Deerfield, Series		
A, 6.13%, 11/01/38	4,565	4,845,017
First Mortgage, Whitestone,		
Series A, 7.75%, 3/01/31	1,000	1,069,800
First Mortgage, Whitestone,		
Series A, 7.75%, 3/01/41	1,420	1,500,827
		7,415,644
Ohio 1.6%		
Buckeye Tobacco Settlement Financing		
Authority, RB, Asset-Backed, Senior		
Series A-2, 5.13%, 6/01/24	3,350	2,636,617
State of Ohio, RB, Ford Motor Co.		
Project, AMT, 5.75%, 4/01/35	4,880	4,888,638
		7,525,255
Pennsylvania 7.1%		
Allegheny County Hospital Development		
Authority, Refunding RB, Health		
System, West Penn, Series A, 5.38%,		
11/15/40	5,345	4,359,061
Bucks County IDA, RB, Ann s Choice, Inc.		
Facility, Series A:		
6.13%, 1/01/25	1,360	1,364,461
6.25%, 1/01/35	1,550	1,528,548

Schedule of Investments (continued)

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

	Par (000)	Value
Municipal Bonds		
Pennsylvania (concluded)		
Cumberland County Municipal Authority, RB, Diakon Lutheran, 6.38%, 1/01/39	\$ 6,165	\$ 6,629,163
Lancaster County Hospital Authority, RB, Brethren Village Project, Series A: 6.25%, 7/01/26	1,160	1,193,385
6.50%, 7/01/40	1,665	1,701,364
Montgomery County IDA Pennsylvania, MRB, Whitemarsh Continuing Care, 6.13%, 2/01/28	2,330	2,169,486
Pennsylvania Economic Development Financing Authority, RB, National Gypsum Co., Series A, AMT, 6.25%, 11/01/27	3,250	2,883,205
Philadelphia Authority for Industrial Development, RB, AMT: Commercial Development, 7.75%, 12/01/17	8,000	8,009,360
Subordinate, Air Cargo, Series A, 7.50%, 1/01/25	3,870	3,777,700
		33,615,733
Puerto Rico 0.9%		
Puerto Rico Sales Tax Financing Corp., RB, First Sub-Series C, 6.53%, 8/01/38 (a)	4,445	1,018,038
Puerto Rico Sales Tax Financing Corp., Refunding RB, First Sub-Series A, 6.50%, 8/01/44	2,650	3,122,601
		4,140,639
Rhode Island 0.7%		
Central Falls Detention Facility Corp., Refunding RB, 7.25%, 7/15/35	4,245	3,391,713
Tennessee 0.4%		
Knox County Health Educational & Housing Facilities Board Tennessee, Refunding RB, Covenant, Series A (AGM), 4.70%, 1/01/40 (a)	5,820	1,440,043
Shelby County Health Educational & Housing Facilities Board Tennessee, RB, Village at Germantown, 6.25%, 12/01/34	575	508,024
		1,948,067
Texas 12.9%		
Bexar County Health Facilities Development Corp., RB, Army Retirement Residence Project, 6.20%, 7/01/45	5,040	5,443,906
Brazos River Authority, Refunding RB, Texas Utility Co., Series A, AMT, 7.70%, 4/01/33	5,080	927,303

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Central Texas Regional Mobility Authority, RB:		
CAB, 7.48%, 1/01/28 (a)	1,000	428,230
CAB, 7.56%, 1/01/29 (a)	2,000	802,700

	Par (000)	Value
Municipal Bonds		
Texas (continued)		
Central Texas Regional Mobility Authority, RB (continued):		
CAB, 7.65%, 1/01/30 (a)	\$ 1,170	\$ 436,457
CAB, 7.71%, 1/01/31 (a)	2,000	700,960
CAB, 7.77%, 1/01/32 (a)	3,500	1,142,680
CAB, 7.78%, 1/01/33 (a)	3,690	1,129,657
CAB, 7.79%, 1/01/34 (a)	4,000	1,142,480
Senior Lien, 5.75%, 1/01/25	675	730,647
Senior Lien, 6.25%, 1/01/46	2,210	2,365,650
City of Houston Texas, RB, Special Facilities, Continental Airlines, Series E, AMT, 6.75%, 7/01/21	4,550	4,573,706
City of Houston Texas, Refunding RB, Special Facilities, Continental Airlines Inc. Terminal Projects, AMT, 6.63%, 7/15/38	2,890	2,937,512
Clifton Higher Education Finance Corp., ERB, Idea Public Schools:		
5.50%, 8/15/31	955	1,000,448
5.75%, 8/15/41	720	753,876
Danbury Higher Education Authority Inc., RB, A.W. Brown Fellowship Charter, Series A (ACA), 5.13%, 8/15/36	1,000	1,172,540
Harris County Health Facilities Development Corp., Refunding RB, Memorial Hermann Healthcare System, Series B:		
7.13%, 12/01/31	1,500	1,803,585
7.25%, 12/01/35	1,110	1,320,833
Houston Higher Education Finance Corp., RB, Cosmos Foundation, Inc., Series A, 6.88%, 5/15/41	595	664,371
La Vernia Higher Education Finance Corp., RB, KIPP Inc., Series A, 6.38%, 8/15/44	860	937,434
Love Field Airport Modernization Corp., RB, Southwest Airlines Co. Project, 5.25%, 11/01/40	1,500	1,521,945
Matagorda County Navigation District No. 1 Texas, Refunding RB, Central Power & Light Co. Project, Series A, 6.30%, 11/01/29	2,090	2,400,741
North Texas Tollway Authority, RB: CAB, Special Projects System, Series B, 7.55%, 9/01/37 (a)	2,110	492,685
Toll 2nd Tier, Series F, 6.13%, 1/01/31	4,425	4,875,509
Red River Health Facilities Development Corp., RB, Eden Home Inc. Project, 7.25%, 12/15/42 (e)	2,895	2,884,028
Tarrant County Cultural Education Facilities Finance Corp., RB, Series A:		
	1,745	1,810,717

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CC Young Memorial Home, 8.00%,
2/15/38

BLACKROCK MUNIASSETS FUND, INC.

JANUARY 31, 2012

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Schedule of Investments (continued)

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

	Par (000)	Value
Municipal Bonds		
Texas (concluded)		
Tarrant County Cultural Education Facilities Finance Corp., RB, Series A (concluded):		
Senior Living Center Project, 8.25%, 11/15/44	\$ 4,200	\$ 4,367,496
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien: LBJ Infrastructure Group LLC, LBJ Freeway Managed Lanes Project, 7.00%, 6/30/40	4,455	5,018,379
NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39	3,000	3,336,930
Texas State Public Finance Authority, RB, Charter School Finance Corp., Series A, 5.38%, 2/15/37	1,000	1,000,940
Texas State Public Finance Authority, Refunding ERB, KIPP Inc., Series A (ACA), 5.00%, 2/15/28	2,825	2,849,973
		60,974,318
US Virgin Islands 1.1%		
United States Virgin Islands, Refunding RB, Government Refinery, Senior Secured, Hovensa Coker Project, AMT, 6.50%, 7/01/21	5,100	5,100,051
Vermont 0.3%		
Vermont EDA, Refunding MRB, Wake Robin Corp. Project, Series A (ACA), 6.30%, 3/01/33	1,600	1,547,424
Virginia 1.4%		
Dulles Town Center Community Development Authority, Special Assessment Bonds, Dulles Town Center Project, 6.25%, 3/01/26	3,635	3,637,072
Lexington IDA, Refunding MRB, Kendal at Lexington, Series A, 5.38%, 1/01/28	40	38,155
Mosaic District Community Development Authority, RB, Special Assessment, Series A:		
6.63%, 3/01/26	1,485	1,606,413
6.88%, 3/01/36	1,300	1,406,093
		6,687,733
Washington 0.3%		
King County, Washington Public Hospital District No. 4, Refunding GO, Snoqualmie Valley Hospital, 7.00%, 12/01/40	1,455	1,498,548
Wisconsin 2.1%		

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Wisconsin Health & Educational Facilities Authority, RB: New Castle Place Project, Series A, 7.00%, 12/01/31	3,175	2,302,161
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	Par (000)	Value
Municipal Bonds		
Wisconsin (concluded)		
Wisconsin Health & Educational Facilities Authority, RB (concluded): Wheaton Franciscan Healthcare, 5.25%, 8/15/34	\$ 6,235	\$ 6,259,815
Wisconsin Health & Educational Facilities Authority, Refunding RB, St. John's Communities Inc, Series A: 7.25%, 9/15/29	425	460,139
7.63%, 9/15/39	855	929,761
		9,951,876
Total Municipal Bonds 88.2%		416,419,598

Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts (g)		
District of Columbia 1.8%		
District of Columbia Water & Sewer Authority, RB, Series A, 6.00%, 10/01/35	6,681	8,345,147
Florida 3.3%		
County of Miami-Dade Florida, RB, Miami International Airport, Series A, AMT (AGC), 5.25%, 10/01/33	15,000	15,817,500
Illinois 1.7%		
Illinois Finance Authority, RB, Carle Foundation, Series A (AGM), 6.00%, 8/15/41	7,180	8,138,745
New York 10.2%		
Hudson Yards Infrastructure Corp., RB, Series A, 5.75%, 2/15/47	4,520	5,107,214
New York City Municipal Water & Sewer Finance Authority, RB: Second General Resolution, Series EE, 5.50%, 6/15/43	7,605	8,825,374
Second General Resolution, Series HH, 5.00%, 6/15/31	8,609	10,013,875
New York Liberty Development Corp., RB, 1 World Trade Center Port Authority Construction, 5.25%, 12/15/43	10,920	12,405,448
New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51	6,600	7,510,338
New York State Dormitory Authority, ERB, Series F, 5.00%, 3/15/35	4,004	4,346,160
		48,208,409
Washington 1.9%		
Bellingham Washington, Water & Sewer, RB, 5.00%, 8/01/40	7,966	8,904,554

Schedule of Investments (continued)

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

		Value
Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts (g)		
Total Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts 18.9%		\$ 89,414,355
Total Long-Term Investments (Cost \$488,233,776) 107.1%		505,833,953
Short-Term Securities	Shares	
FFI Institutional Tax-Exempt Fund, 0.01% (h)(i)	9,876,260	9,876,260
	Par (000)	
Michigan Finance Authority, RB, SAN, Detroit Schools, 6.45%, 2/20/2012	\$ 3,400	3,400,000
Total Short-Term Securities (Cost \$13,276,260) 2.8%		13,276,260
Total Investments (Cost - \$501,510,036*) 109.9%		519,110,213
Liabilities in Excess of Other Assets (0.4)%		(1,814,970)
Liability for TOB Trust Certificates, Including Interest Expense and Fees Payable (9.5)%		(44,752,511)
Net Assets 100.0%		\$ 472,542,732

* As of January 31, 2012, gross unrealized appreciation and gross unrealized depreciation based on cost for federal income tax purposes were as follows:

Tax Cost	\$ 457,538,120
Gross unrealized appreciation	\$ 43,508,476
Gross unrealized depreciation	(26,666,809)
Net unrealized appreciation	\$ 16,841,667

- (a) Represents a zero-coupon bond. Rate shown reflects the current yield as of report date.
- (b) Security exempt from registration pursuant to Rule 144A under the Securities Act of 1933. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (c) Issuer filed for bankruptcy and/or is in default of interest payments.
- (d) Non-income producing security.
- (e) When-issued security. Unsettled when-issued transactions were as follows:

Counterparty	Value	Unrealized Appreciation
BB & T Capital Markets	\$ 2,884,028	\$ 24,579
Citigroup Global Markets	\$ 1,394,959	\$ 14,959

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- (f) Variable rate security. Rate shown is as of report date.
- (g) Securities represent bonds transferred to a TOB in exchange for which the Fund acquired residual interest certificates. These securities serve as collateral in a financing transaction.
- (h) 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, 2011	Net Activity	Shares Held at January 31, 2012	Income
FFI Institutional Tax-Exempt Fund	1,560,240	8,316,020	9,876,260	\$ 963

- (i) Represents the current yield as of report date.

Financial futures contracts sold as of January 31, 2012 were as follows:

Contracts	Issue	Exchange	Expiration	Notional Value	Unrealized Depreciation
108	10-Year US Treasury Note	Chicago Board of Trade	March 2012	\$ 14,283,000	\$ (189,205)

Portfolio Abbreviations

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	American Capital Access 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
IDA	Industrial Development Authority
MRB	Mortgage Revenue Bonds
RB	Revenue Bonds
SAN	State Aid Notes

Schedule of Investments (concluded)

BlackRock MuniAssets Fund, Inc. (MUA)

Fair Value Measurements - Various inputs are used in determining the fair value of investments and derivative financial instruments. These inputs are categorized into a disclosure hierarchy consisting of three broad levels for financial reporting purposes as follows:

Level 1 unadjusted 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 and derivative financial instruments)

Changes in valuation techniques may result in transfers in or out of an assigned level within the disclosure hierarchy. The categorization of a value determined for investments and derivative financial instruments is based on the pricing transparency of the investment and derivative financial instrument and does not necessarily correspond to the Fund's perceived risk of investing in those securities. For information about the Fund's policy regarding valuation of investments and derivative financial instruments and other significant accounting policies, please refer to the Fund's most recent financial statements as contained in its semi-annual report.

The following tables summarize the inputs used as of January 31, 2012 in determining the fair valuation of the Fund's investments and derivative financial instruments:

Valuation Inputs	Level 1	Level 2	Level 3	Total
Assets:				
Investments				
Long-Term Investments ¹		\$ 505,833,953		\$ 505,833,953
Short-Term Securities	\$ 9,876,260	3,400,000		13,276,260
Total	\$ 9,876,260	\$ 509,233,953		\$ 519,110,213

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

Valuation Inputs	Level 1	Level 2	Level 3	Total
Derivative Financial Instruments²				
Liabilities:				
Interest rate contracts	\$ (189,205)			\$ (189,205)

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

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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 23, 2012

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 23, 2012

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

Date: March 23, 2012

