

BLACKROCK MUNIASSETS FUND, INC.

Form N-Q

September 28, 2010

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: Anne F. Ackerley, 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: 07/31/2010

Item 1 Schedule of Investments

Schedule of Investments July 31, 2010 (Unaudited)

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

Municipal Bonds	Par (000)	Value
Alabama 0.4%		
County of Jefferson Alabama, RB, Series A:		
5.25%, 1/01/13	\$ 635	\$ 609,626
5.25%, 1/01/17	530	482,019
		<u>1,091,645</u>
Alaska 0.2%		
Alaska Industrial Development & Export Authority, RB, Williams Lynxs, Alaska Cargoport, AMT, 7.80%, 5/01/14		
	395	391,117
Arizona 5.9%		
Coconino County Pollution Control Corp. Arizona, Refunding RB, Tucson Electric Power-Navajo, Series A, AMT, 7.13%, 10/01/32		
	3,000	3,001,740
Maricopa County IDA Arizona, RB, Arizona Charter Schools Project, Series A, 6.63%, 7/01/20		
	1,520	1,179,338
Phoenix IDA Arizona, Refunding RB, America West Airlines Inc. Project, AMT, 6.30%, 4/01/23		
	4,800	3,826,656
Pima County IDA, RB, Arizona Charter Schools Project, Series E, 7.25%, 7/01/31		
	1,365	1,371,770
Pima County IDA, Refunding IDR, B, Tucson Electric Power, 5.75%, 9/01/29		
	670	684,452
Pima County IDA, Refunding RB: Arizona Charter Schools Project, Series O, 5.25%, 7/01/31		
	500	403,670
Charter Schools II, Series A, 6.75%, 7/01/31		
	670	652,768
Salt Verde Financial Corp., RB, Senior: 5.00%, 12/01/32		
	1,840	1,671,806
5.00%, 12/01/37		
	1,850	1,641,227
Show Low Improvement District, Special Assessment Bonds, District No. 5, 6.38%, 1/01/15		
	745	747,093
University Medical Center Corp. Arizona, RB: 6.25%, 7/01/29		
	280	300,342
6.50%, 7/01/39		
	500	535,940
		<u>16,016,802</u>

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Municipal Bonds	Par (000)	Value
California 4.2%		
California Health Facilities Financing Authority, RB, Cedars-Sinai Medical Center, 5.00%, 8/15/39	\$ 390	\$ 374,981
California Statewide Communities Development Authority, Refunding RB: American Baptist Homes of the West, 6.25%, 10/01/39	1,290	1,294,322
Senior Living, Southern California, 7.00%, 11/15/29	600	649,296
Senior Living, Southern California, 7.25%, 11/15/41	2,060	2,245,709
City of Fontana California, Special Tax Bonds, Refunding, Community Facilities District No. 22-Sierra, Series H, 6.00%, 9/01/34	1,320	1,280,704
State of California, GO: 4.50%, 10/01/36	2,555	2,277,220
Various Purpose, 6.00%, 3/01/33	3,075	3,328,687
		<u>11,450,919</u>
Colorado 2.7%		
Elk Valley Public Improvement Corp., RB, Public Improvement Fee: Series A, 7.10%, 9/01/14	1,395	1,424,825
Series A, 7.30%, 9/01/22	2,095	2,076,941
Series B, 7.45%, 9/01/31	200	189,500
Plaza Metropolitan District No. 1 Colorado, Tax Allocation Bonds, Public Improvement Fee, Tax Increment: 8.00%, 12/01/25	2,850	2,964,798
Subordinate, 8.13%, 12/01/25	525	480,554
		<u>7,136,618</u>
Connecticut 3.0%		
Connecticut State Development Authority, RB, AFCO Cargo BDL LLC Project, AMT, 8.00%, 4/01/30	3,490	3,335,184
Harbor Point Infrastructure Improvement District, Tax Allocation Bonds, Harbor Point Project, Series A, 7.88%, 4/01/39	2,340	2,480,587

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 ACA Financial Guaranty Corp.
 AGC Assured Guaranty Corp.

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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
IDRB	Industrial Development Revenue Bonds
MRB	Mortgage Revenue Bonds
NPFGC	National Public Finance Guarantee Corp.
RB	Revenue Bonds
TE	Tax-Exempt
TIF	Tax Increment Financing

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2010

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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
Connecticut (concluded)		
Mohegan Tribe of Indians of Connecticut, RB, Public Improvement, Priority Distribution, 6.25%, 1/01/31	\$ 2,610	\$ 2,146,020
		<u>7,961,791</u>
District of Columbia 2.1%		
District of Columbia, RB, Methodist Home District of Columbia, Series A: 7.38%, 1/01/30	985	1,002,868
7.50%, 1/01/39	1,615	1,645,733
District of Columbia Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, 6.50%, 5/15/33	1,055	1,011,397
Metropolitan Washington Airports Authority, RB, CAB, 2nd Senior Lien, Series B (AGC), 6.54%, 10/01/30 (a)	7,000	2,124,500
		<u>5,784,498</u>
Florida 8.7%		
County of Miami-Dade Florida, Refunding RB, Miami International Airport, Series A-1, 5.38%, 10/01/41	705	717,380
Greater Orlando Aviation Authority Florida, RB, Special Purpose, JetBlue Airways Corp., AMT, 6.38%, 11/15/26	1,180	1,086,815
Harbor Bay Community Development District Florida, Special Assessment Bonds, Series A, 7.00%, 5/01/33	455	455,523
Hillsborough County IDA, RB: National Gypsum Co., Series A, AMT, 7.13%, 4/01/30	2,000	1,888,960
National Gypsum Co., Series B, AMT, 7.13%, 4/01/30	1,540	1,454,499
Tampa General Hospital Project, 5.00%, 10/01/36	2,670	2,553,481
Jacksonville Economic Development Commission, RB, Gerdau Ameristeel US Inc., AMT, 5.30%, 5/01/37	1,300	1,062,113
Jacksonville Economic Development Commission, Refunding RB, Florida Proton Therapy Institute, Series A, 6.00%, 9/01/17	850	874,114
Lee County IDA Florida, RB, Series A, Lee Charter Foundation, 5.38%,	2,620	2,156,208

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6/15/37		
Midtown Miami Community Development District, Special Assessment Bonds, Series A, 6.25%, 5/01/37	3,255	3,124,182
Santa Rosa Bay Bridge Authority, RB, 6.25%, 7/01/28	3,040	1,661,512
Sarasota County Health Facilities Authority, Refunding RB, Village On The Isle Project: 5.50%, 1/01/27	860	792,662
5.50%, 1/01/32	795	717,289
Sarasota County Public Hospital District, RB, Sarasota Memorial Hospital Project, Series A, 5.63%, 7/01/39	645	671,342
Sumter Landing Community Development District Florida, RB, Sub-Series B, 5.70%, 10/01/38	2,380	1,932,108
Municipal Bonds	Par (000)	Value
Florida (concluded)		
Tolomato Community Development District, Special Assessment Bonds, Special Assessment, 6.65%, 5/01/40	\$ 2,680	\$ 2,204,166
		<u>23,352,354</u>
Georgia 3.5%		
City of Atlanta Georgia, Tax Allocation Bonds, Princeton Lakes Project, 5.50%, 1/01/31	640	572,154
Clayton County Development Authority, RB, Delta Air Lines Inc. Project, Series A, 8.75%, 6/01/29	1,990	2,148,324
County of Clayton Georgia, Tax Allocation Bonds, Ellenwood Project, 7.50%, 7/01/33	1,775	1,712,893
DeKalb County Hospital Authority Georgia, RB, DeKalb Medical Center Inc. Project, 6.13%, 9/01/40	1,525	1,538,023
Gainesville & Hall County Development Authority, Refunding RB, Acts Retirement Life Community, Series A-2: 6.38%, 11/15/29	700	733,131
6.63%, 11/15/39	235	245,488
Rockdale County Development Authority, RB, Visy Paper Project, Series A, AMT, 6.13%, 1/01/34	2,435	2,288,535
Thomasville Hospital Authority, RB, Anticipation Certificates, John D. Archbold, 5.38%, 11/01/40	275	272,338
		<u>9,510,886</u>
Guam 1.5%		
	750	767,393

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Guam Government Waterworks Authority, Refunding RB, Water, 6.00%, 7/01/25		
Territory of Guam, GO, Series A:		
6.00%, 11/15/19	365	379,045
6.75%, 11/15/29	635	680,853
7.00%, 11/15/39	660	713,737
Territory of Guam, RB, Section 30, Series A, 5.63%, 12/01/29	1,460	1,500,968
		4,041,996

Illinois 4.8%

City of Chicago Illinois, Refunding RB, American Airlines Inc. Project, 5.50%, 12/01/30	4,140	3,070,058
Illinois Finance Authority, RB: Roosevelt University Project, 6.50%, 4/01/44	2,470	2,580,656
Rush University Medical Center Obligation Group, Series B, 7.25%, 11/01/30	1,170	1,338,445
Illinois Finance Authority, Refunding RB: CAB, Clare Water Tower, Series B, 0.04%, 5/15/50 (a)	885	10,293
Clare Water Tower, Series A-7, 6.13%, 5/15/41	2,065	1,343,076
Friendship Village of Schaumburg, 7.25%, 2/15/45	2,370	2,382,822
Primary Health Care Centers Program, 6.60%, 7/01/24	685	616,637

Schedule of Investments (continued)

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

Municipal Bonds	Par (000)	Value
Illinois (concluded)		
Village of Lincolnshire Illinois, Special Tax Bonds, Sedgebrook Project, 6.25%, 3/01/34	\$ 1,070	\$ 942,199
Village of Wheeling Illinois, Tax Allocation Bonds, North Milwaukee/Lake-Cook TIF Project, 6.00%, 1/01/25	825	765,608
		<u>13,049,794</u>
Indiana 0.8%		
Indiana Finance Authority, Refunding RB, Improvement, U.S. Steel Corp., 6.00%, 12/01/26	900	922,140
Vigo County Hospital Authority Indiana, RB, Union Hospital Inc.: 5.70%, 9/01/37	615	565,812
5.75%, 9/01/42	765	702,393
		<u>2,190,345</u>
Kentucky 0.4%		
Kentucky Economic Development Finance Authority, Refunding RB, Owensboro Medical Health System, Series A, 6.38%, 6/01/40	935	974,064
Louisiana 1.2%		
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp. Projects, 6.75%, 11/01/32	3,000	3,102,780
Maryland 1.9%		
Maryland EDC, RB, Transportation Facilities Project, Series A, 5.75%, 6/01/35	615	628,850
Maryland EDC, Refunding RB, Health & Mental Hygiene Program, Series A, 7.75%, 3/01/25	1,480	1,496,472
Maryland Health & Higher Educational Facilities Authority, RB, Washington Christian Academy, 5.50%, 7/01/38	590	253,700
Maryland Health & Higher Educational Facilities Authority, Refunding RB,	1,845	1,773,137

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Doctor s Community Hospital, 5.75%, 7/01/38		
Maryland State Energy Financing Administration, RB, Cogeneration, AES Warrior Run, AMT, 7.40%, 9/01/19	1,080	1,080,432
		<u>5,232,591</u>
Massachusetts 0.6%		
Massachusetts Development Finance Agency, Refunding RB, Eastern Nazarene College, 5.63%, 4/01/29	500	427,525
Massachusetts Health & Educational Facilities Authority, RB, Jordan Hospital, Series E, 6.75%, 10/01/33	1,150	1,147,850
		<u>1,575,375</u>
Michigan 2.7%		
Advanced Technology Academy, RB, 6.00%, 11/01/37	900	821,466
Municipal Bonds	Par (000)	Value
Michigan (concluded)		
County of Wayne Michigan, GO, Building Improvement, Series A, 6.75%, 11/01/39	\$ 545	\$ 578,234
Monroe County Hospital Finance Authority, Refunding RB, Mercy Memorial Hospital Corp. Obligation, 5.50%, 6/01/35	1,740	1,457,668
Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, 8.25%, 9/01/39	3,735	4,459,889
		<u>7,317,257</u>
Minnesota 0.7%		
City of Minneapolis Minnesota, Refunding RB, Fairview Health Services, Series A, 6.75%, 11/15/32	1,785	2,001,181
Missouri 0.9%		
Kansas City IDA Missouri, RB, First Mortgage, Bishop Spencer, Series A, 6.50%, 1/01/35	1,000	902,040
Kirkwood IDA Missouri, RB, Aberdeen Heights, Series A, 8.25%, 5/15/39	1,370	1,402,003
		<u>2,304,043</u>
Multi-State 0.3%		
MuniMae TE Bond Subsidiary LLC, 7.50%, 6/30/49 (b)(c)(d)	960	890,662
Nevada 0.2%		
	605	581,024

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County of Clark Nevada, Special
Assessment Bonds, Special
Improvement District No. 142, Local
Improvement, 6.38%, 8/01/23

New Hampshire 0.4%

New Hampshire Health & Education
Facilities Authority, RB, Catholic
Medical Center, 5.00%, 7/01/36

1,165 1,005,884

New Jersey 8.5%

New Jersey EDA, RB, Continental Airlines
Inc. Project, AMT:

6.63%, 9/15/12 1,000 1,014,970

6.25%, 9/15/19 2,000 1,963,240

6.40%, 9/15/23 1,000 961,760

6.25%, 9/15/29 3,330 3,171,159

9.00%, 6/01/33 1,250 1,318,612

New Jersey EDA, Refunding RB, Newark
Airport Marriott Hotel, 7.00%,
10/01/14

2,500 2,511,350

New Jersey Educational Facilities
Authority, Refunding RB, University of
Medicine & Dentistry, Series B,
7.50%, 12/01/32

2,510 2,881,982

New Jersey Health Care Facilities
Financing Authority, RB, Pascack
Valley Hospital Association, 6.63%,
7/01/36 (e)(f)

2,000 20

New Jersey Health Care Facilities
Financing Authority, Refunding RB, St.
Joseph's Healthcare System, 6.63%,
7/01/38

2,410 2,502,158

BLACKROCK MUNIASSETS FUND, INC.

JULY 31, 2010

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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 Transportation Trust Fund Authority, RB, CAB, Transportation System, Series C (AMBAC), 5.05%, 12/15/35 (a)	\$ 3,450	\$ 773,525
Tobacco Settlement Financing Corp. New Jersey, Refunding RB, Series 1A: 4.50%, 6/01/23	4,335	3,969,256
5.00%, 6/01/41	3,015	1,977,388
		<u>23,045,420</u>
New York 6.2%		
Brooklyn Arena Local Development Corp., RB, Barclays Center Project, 6.38%, 7/15/43	1,000	1,025,650
Chautauqua County Industrial Development Agency, RB, NRG Dunkirk Power Project, 5.88%, 4/01/42	2,485	2,549,188
Dutchess County Industrial Development Agency New York, Refunding RB, St. Francis Hospital, Series A, 7.50%, 3/01/29	1,400	1,396,528
Metropolitan Transportation Authority, RB, Series 2008-C, 6.50%, 11/15/28	3,685	4,301,095
New York City Industrial Development Agency, RB: American Airlines Inc., JFK International Airport, AMT, 8.00%, 8/01/28	1,045	1,096,414
British Airways Plc Project, AMT, 7.63%, 12/01/32	2,400	2,426,256
Series C, 6.80%, 6/01/28	510	535,882
Special Needs Facilities Pooled Program, Series C-1, 6.63%, 7/01/29	1,515	1,401,981
New York Liberty Development Corp., RB, National Sports Museum Project, Series A, 6.13%, 2/15/19 (e)(f)	870	9
New York Liberty Development Corp., Refunding RB, Second Priority, Bank of America Tower at One Bryant Park Project, 6.38%, 7/15/49	750	783,810
Yonkers Industrial Development Agency New York, RB, Sarah Lawrence College Project, Series A, 6.00%, 6/01/41	1,240	1,299,619

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16,816,432

North Carolina 0.9%

North Carolina Medical Care Commission, Refunding RB, First Mortgage, Deerfield, Series A, 6.13%, 11/01/38	2,335	2,341,468
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Ohio 1.8%

Buckeye Tobacco Settlement Financing Authority, RB, Asset-Backed, Senior Series A-2: 5.13%, 6/01/24	2,250	1,879,718
6.50%, 6/01/47	3,935	3,051,671

4,931,389

Municipal Bonds

**Par
(000)**

Value

Pennsylvania 9.1%

Allegheny County Hospital Development Authority, Refunding RB, Health System, West Penn, Series A, 5.38%, 11/15/40	\$ 3,960	\$ 2,939,587
Bucks County IDA, RB, Ann s Choice Inc. Facility, Series A: 6.13%, 1/01/25	200	196,332
6.25%, 1/01/35	1,550	1,466,610
Cumberland County Municipal Authority, RB, Diakon Lutheran, 6.38%, 1/01/39	3,655	3,751,638
Lancaster County Hospital Authority, RB, Brethren Village Project, Series A: 6.25%, 7/01/26	685	689,535
6.50%, 7/01/40	990	966,992
Montgomery County IDA Pennsylvania, MRB, Whitmarsh Continuing Care, 6.13%, 2/01/28	2,330	1,980,407
Pennsylvania Economic Development Financing Authority, RB, AMT: National Gypsum Co., Series A, 6.25%, 11/01/27	3,250	2,810,665
Reliant Energy, Series B, 6.75%, 12/01/36	2,040	2,103,832
Pennsylvania Higher Educational Facilities Authority, Refunding RB, Allegheny Delaware Valley Obligation, Series A (NPFGC), 5.88%, 11/15/21	500	487,680
Philadelphia Authority for Industrial Development, RB, AMT: Commercial Development, 7.75%, 12/01/17	5,000	5,005,900
Subordinate, Air Cargo, Series A, 7.50%, 1/01/25	2,270	2,201,718

24,600,896

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Puerto Rico 1.3%		
Puerto Rico Public Buildings Authority, Refunding RB, Series Q, 5.63%, 7/01/39	1,650	1,687,637
Puerto Rico Sales Tax Financing Corp., RB, First Sub-Series A, 6.50%, 8/01/44	1,650	1,828,926
		3,516,563
Rhode Island 0.8%		
Central Falls Detention Facility Corp., Refunding RB, 7.25%, 7/15/35	2,495	2,148,819
South Carolina 0.4%		
Connector 2000 Association Inc., RB, CAB, Senior Series B, 0.00%, 1/01/14 (a)(e)(f)	1,485	199,435
South Carolina Jobs, EDA, Refunding RB, Palmetto Health, 5.50%, 8/01/26	975	985,618
		1,185,053
Tennessee 0.6%		
Knox County Health Educational & Housing Facilities Board Tennessee, Refunding RB, Covenant, Series A (AGM), 4.69%, 1/01/40 (a)	5,975	1,167,993
4	BLACKROCK MUNIASSETS FUND, INC.	JULY 31, 2010

Schedule of Investments (continued)

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

Municipal Bonds	Par (000)	Value
Tennessee (concluded)		
Shelby County Health Educational & Housing Facilities Board, RB, Village at Germantown, 6.25%, 12/01/34	\$ 355	\$ 307,948
		<u>1,475,941</u>
Texas 10.0%		
Bexar County Health Facilities Development Corp., RB, Army Retirement Residence Project, 6.20%, 7/01/45	2,985	3,035,655
Brazos River Authority, Refunding RB, Texas Utility Co., Series, AMT, 7.70%, 4/01/33	2,550	1,357,952
Central Texas Regional Mobility Authority, RB:		
CAB, 7.56%, 1/01/29 (a)	2,000	614,560
CAB, 7.65%, 1/01/30 (a)	1,170	327,834
CAB, 7.71%, 1/01/31 (a)	2,000	519,700
CAB, 7.77%, 1/01/32 (a)	3,500	851,375
CAB, 7.78%, 1/01/33 (a)	1,540	349,164
Senior Lien, 5.75%, 1/01/25	650	661,310
City of Houston Texas, RB, Special Facilities, Continental Airlines, Series E, AMT, 6.75%, 7/01/21	2,685	2,671,494
Harris County Health Facilities Development Corp., Refunding RB, Memorial Hermann Healthcare System, Series B, 7.13%, 12/01/31	1,500	1,705,125
La Vernia Higher Education Finance Corp., RB, KIPP Inc., 6.38%, 8/15/44	860	885,250
Matagorda County Navigation District No. 1 Texas, Refunding RB, Central Power & Light Co. Project, Series A, 6.30%, 11/01/29	1,240	1,352,914
North Texas Tollway Authority, RB, Toll, 2nd Tier, Series F, 6.13%, 1/01/31	2,775	2,958,039
Tarrant County Cultural Education Facilities Finance Corp., RB, Series A: CC Young Memorial Home, 8.00%, 2/15/38	1,035	1,084,121
Senior Living Center Project, 8.25%, 11/15/44	2,490	2,495,876
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien: LBJ Infrastructure, 7.00%, 6/30/40	2,640	2,746,524
Note Mobility, 6.88%, 12/31/39	2,330	2,418,214

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Texas State Public Finance Authority, Refunding ERB, KIPP Inc., Series A (ACA), 5.00%, 2/15/28	975	896,864
		<u>26,931,971</u>

U.S. Virgin Islands 1.1%

United States Virgin Islands, Refunding RB, Senior Secured, Hovensa Coker Project, AMT, 6.50%, 7/01/21	3,000	3,046,260
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Utah 0.6%

County of Carbon Utah, Refunding RB, Laidlaw Environmental, Series A, AMT, 7.45%, 7/01/17	1,660	1,663,403
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Municipal Bonds	Par (000)	Value
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Virginia 2.5%

Dulles Town Center Community Development Authority, Special Assessment Bonds, Dulles Town Center Project, 6.25%, 3/01/26	\$ 1,410	\$ 1,355,673
Fairfax County EDA, Refunding RB, Goodwin House Inc.:		
5.13%, 10/01/37	585	572,779
5.13%, 10/01/42	450	437,868
Lexington IDA, Refunding MRB, Kendal at Lexington, Series A, 5.38%, 1/01/28	540	471,679
Tobacco Settlement Financing Corp. Virginia, Refunding RB, Senior Series B1, 5.00%, 6/01/47	5,875	3,803,299
		<u>6,641,298</u>

Wisconsin 2.2%

Wisconsin Health & Educational Facilities Authority, RB:		
New Castle Place Project, Series A, 7.00%, 12/01/31	1,855	1,852,718
Wheaton Franciscan Healthcare, 5.25%, 8/15/34	3,695	3,375,161
Wisconsin Health & Educational Facilities Authority, Refunding RB, St. John's Communities Inc., Series A:		
7.25%, 9/15/29	250	257,963
7.63%, 9/15/39	505	528,452
		<u>6,014,294</u>

Wyoming 1.3%

County of Sweetwater Wyoming, Refunding RB, FMC Corp. Project, AMT, 5.60%, 12/01/35	3,600	3,526,704
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Total Municipal Bonds	94.4%		254,849,537
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**Municipal Bonds Transferred to Tender
Option Bond Trusts (g)**

District of Columbia 1.6%

District of Columbia Water & Sewer
Authority, RB, Series A, 6.00%,
10/01/35

	3,951	4,464,027
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Florida 3.3%

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

	8,870	8,910,270
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Virginia 3.3%

Virginia HDA, RB, Sub-Series H-1
(NPFGC), 5.38%, 7/01/36

	8,690	8,862,062
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**Total Municipal Bonds Transferred to
Tender Option Bond Trusts 8.2%**

		22,236,359
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**Total Long-Term Investments
(Cost \$278,862,084) 102.6%**

		277,085,896
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Schedule of Investments (concluded)

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

Short-Term Securities	Shares	Value
FFI Institutional Tax-Exempt Fund, 0.21% (h)(i)	781,685	\$ 781,685
Total Short-Term Securities (Cost \$781,685) 0.3%		781,685
Total Investments (Cost \$279,643,769*) 102.9%		277,867,581
Other Assets Less Liabilities 1.1%		2,834,681
Liability for Trust Certificates, Including Interest Expense and Fees Payable (4.0%)		(10,764,302)
Net Assets 100.0%		\$ 269,937,960

* The cost and unrealized appreciation (depreciation) of investments as of July 31, 2010, as computed for federal income tax purposes, were as follows:

Aggregate cost	\$ 268,947,146
Gross unrealized appreciation	\$ 14,244,310
Gross unrealized depreciation	(16,079,521)
Net unrealized depreciation	\$ (1,835,211)

- (a) Represents a zero-coupon bond. Rate shown reflects the current yield as of report date.
- (b) 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.
- (c) 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.
- (d) Variable rate security. Rate shown is as of report date.
- (e) Issuer filed for bankruptcy and/or is in default of interest payments.
- (f) Non-income producing security.
- (g)

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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.

- (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, are as follows:

Affiliate	Shares Held at April 30, 2010	Net Activity	Shares Held at July 31, 2010	Income
FFI Institutional Tax-Exempt Fund	149,925	631,760	781,685	\$ 661

- (i) 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:

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 annual report.

The following table summarizes the inputs used as of July 31, 2010 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		\$ 277,085,896		\$ 277,085,896
Short-Term Securities	\$ 781,685			781,685
Total	\$ 781,685	\$ 277,085,896		\$ 277,867,581

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/ Anne F. Ackerley
Anne F. Ackerley
Chief Executive Officer of
BlackRock MuniAssets Fund, Inc.

Date: September 27, 2010

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/ Anne F. Ackerley
Anne F. Ackerley
Chief Executive Officer (principal executive officer) of
BlackRock MuniAssets Fund, Inc.

Date: September 27, 2010

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

Date: September 27, 2010