

BLACKROCK MUNIVEST FUND INC  
Form N-Q  
January 25, 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 811-05611

Name of Fund: BlackRock MuniVest Fund, Inc. (MVF)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

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

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

Date of fiscal year end: 08/31/2012

Date of reporting period: 11/30/2011

Item 1 – Schedule of Investments

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Catholic Healthcare West, Series A, 6.00%, 7/01/34	1,055	1,136,741
State Joseph Health System, Series A, 5.75%, 7/01/39	5,000	5,214,850
Sutter Health, Series B, 6.00%, 8/15/42	5,600	6,048,448
California Housing Finance Agency, RB, Home Mortgage, Series K, AMT, 5.50%, 2/01/42	2,900	2,886,689
California State Public Works Board, RB, Department of Mental Health, Coalinga, Series A: 5.50%, 6/01/23	6,000	6,148,200
5.13%, 6/01/29	10,435	10,465,262
California Statewide Communities Development Authority, RB, Health Facility, Memorial Health Services, Series A, 6.00%, 10/01/23	4,240	4,413,670
Golden State Tobacco Securitization Corp. California, RB, Asset-Backed, Series A-3, 7.88%, 6/01/13 (a)	10,725	11,890,700
Los Angeles Department of Airports, RB, Series A, 5.25%, 5/15/39	1,200	1,275,204
State of California, GO, Various Purpose: 6.50%, 4/01/33	1,500	1,490,685
5.00%, 9/01/41	9,700	11,301,664
		62,272,113

**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:

AGC	Assured Guaranty Corp.
AGM	Assured Guaranty Municipal Corp.
AMBAC	American Municipal Bond Assurance Corp.
AMT	Alternative Minimum Tax (subject to)
ARB	Airport Revenue Bonds
CAB	Capital Appreciation Bonds
COP	Certificates of Participation
EDA	Economic Development Authority
FHA	Federal Housing Administration
Ginnie Mae	Government National Mortgage Association
GO	General Obligation Bonds
HDA	Housing Development Authority
HFA	Housing Finance Agency
HRB	Housing Revenue Bonds
IDA	Industrial Development Authority
IDB	Industrial Development Board
MRB	Mortgage Revenue Bonds
NPFGC	National Public Finance Guarantee Corp.
RB	Revenue Bonds
VRDN	Variable Rate Demand Notes

## Schedule of Investments (continued)

BlackRock MuniVest Fund, Inc. (MVF)  
(Percentages shown are based on Net Assets)

	Par (000)	Value
<b>Municipal Bonds</b>		
<b>Colorado 1.1%</b>		
Colorado Health Facilities Authority, RB, Catholic Health Initiatives, Series D, 6.25%, 10/01/33	\$ 2,500	\$ 2,756,375
Colorado Health Facilities Authority, Refunding RB, Evangelical Lutheran, Series A, 5.25%, 6/01/34	3,000	2,900,100
Colorado Housing & Finance Authority, Refunding RB, S/F Program, Senior Series A-2, AMT: 6.60%, 5/01/28	275	280,946
7.50%, 4/01/31	130	132,618
Regional Transportation District, COP, Series A, 5.38%, 6/01/31	385	408,023
		6,478,062
<b>Connecticut 0.4%</b>		
Mohegan Tribe of Indians of Connecticut, RB, Public Improvement, Priority Distribution, 6.25%, 1/01/31	2,810	2,235,580
<b>Delaware 0.2%</b>		
County of Sussex Delaware, RB, NRG Energy, Inc., Indian River Project, 6.00%, 10/01/40	1,500	1,507,740
<b>District of Columbia 0.2%</b>		
Metropolitan Washington Airports Authority, RB, First Senior Lien, Series A: 5.00%, 10/01/39	415	427,998
5.25%, 10/01/44	650	672,737
		1,100,735
<b>Florida 5.0%</b>		
County of Miami-Dade Florida, GO, Building Better Communities Program: Series B, 6.38%, 7/01/28	4,630	5,196,064
Series B-1, 5.63%, 7/01/38	5,000	5,334,950
County of Miami-Dade Florida, Refunding RB, Miami International Airport: AMT (AGC), 5.00%, 10/01/40	10,000	9,558,500
Series A-1, 5.38%, 10/01/41	10,290	10,532,638
		30,622,152
<b>Georgia 2.2%</b>		
City of Atlanta Georgia, Refunding RB, General, Series B, AMT, 5.00%, 1/01/29	1,070	1,080,850
DeKalb County Hospital Authority Georgia, RB, Dekalb Medical Center, Inc. Project, 6.13%, 9/01/40	3,570	3,619,052
DeKalb Private Hospital Authority, Refunding RB, Children s Healthcare, 5.25%, 11/15/39	3,335	3,431,015

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Municipal Electric Authority of Georgia,

RB, Series W:

6.60%, 1/01/18 (c)	250	272,547
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	Par (000)	Value
<b>Municipal Bonds</b>		
<b>Georgia (concluded)</b>		
Municipal Electric Authority of Georgia,		
RB, Series W (concluded):		
6.60%, 1/01/18	\$ 4,540	\$ 5,139,688
		13,543,152
<b>Hawaii 0.9%</b>		
Hawaii State Harbor, RB, Series A,		
5.25%, 7/01/35	5,000	5,265,250
<b>Illinois 12.9%</b>		
Chicago Board of Education Illinois, GO,		
Series A, 5.50%, 12/01/39		
	6,670	7,032,048
Chicago Transit Authority, RB, Sales Tax		
Receipts Revenue, Third Lien, 5.25%,		
12/01/36		
	2,110	2,193,218
City of Chicago Illinois, ARB, General,		
Third Lien, Series B-2, AMT (NPFGC),		
6.00%, 1/01/27		
	17,080	17,850,650
City of Chicago Illinois, RB, Sales Tax		
Revenue, Series A, 5.00%, 1/01/41		
	2,290	2,351,990
Illinois Finance Authority, RB:		
Advocate Health Care		
Network, Series D, 6.50%,		
11/01/38		
	9,700	10,714,717
Community, 6.50%, 7/01/22		
	1,060	959,003
Community Rehabilitation,		
6.50%, 7/01/12 (a)		
	1,080	1,130,285
Illinois Finance Authority, Refunding RB:		
Northwestern Memorial Hospital,		
Series A, 6.00%, 8/15/39		
	9,000	9,858,150
OSF Healthcare System, Series A,		
6.00%, 5/15/39		
	5,140	5,315,325
Railsplitter Tobacco Settlement		
Authority, RB, 6.00%, 6/01/28		
	2,645	2,783,836
Regional Transportation Authority, RB:		
Series A (AMBAC), 7.20%,		
11/01/20		
	3,040	3,649,186
Series C (NPFGC), 7.75%,		
6/01/20		
	4,000	4,941,800
Village of Hodgkins Illinois, RB, MBM		
Project, AMT, 6.00%, 11/01/23		
	10,000	10,004,800
		78,785,008
<b>Indiana 4.4%</b>		
Indiana Health & Educational Facilities		
Financing Authority, RB, Clarian		
Health Obligation, Series A, 5.25%,		
2/15/40		
	8,980	9,012,867
Indiana Transportation Finance		
Authority, RB, Series A, 6.80%,		
12/01/16		
	6,260	6,978,210
Indianapolis Local Public Improvement		
Bond Bank, Refunding RB, Series D,		
6.75%, 2/01/14		
	10,210	10,752,763
		26,743,840



## Schedule of Investments (continued)

BlackRock MuniVest Fund, Inc. (MVF)  
(Percentages shown are based on Net Assets)

	Par (000)	Value
<b>Municipal Bonds</b>		
<b>Iowa 0.1%</b>		
Iowa Tobacco Settlement Authority, RB, Asset-Backed, Series C, 5.63%, 6/01/46	\$ 1,000	\$ 715,920
<b>Kansas 0.3%</b>		
Sedgwick & Shawnee Counties Kansas, RB, Mortgage-Backed Securities Program, Series A-4, AMT (Ginnie Mae), 5.95%, 12/01/33	1,555	1,618,475
<b>Kentucky 1.2%</b>		
County of Owen Kentucky, RB, Kentucky American Water Co., Series B, 5.63%, 9/01/39	1,000	1,009,590
Kentucky Economic Development Finance Authority, RB, Owensboro Medical Health System, Series A, 6.50%, 3/01/45	4,000	4,213,280
Kentucky Economic Development Finance Authority, Refunding RB, Owensboro Medical Health System, Series A, 6.38%, 6/01/40	2,000	2,092,720
		7,315,590
<b>Louisiana 0.4%</b>		
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp., Series A-1, 6.50%, 11/01/35	2,615	2,722,999
<b>Maine 1.0%</b>		
Maine Health & Higher Educational Facilities Authority, RB, Series A, 5.00%, 7/01/39	5,000	5,059,600
Portland New Public Housing Authority Maine, Refunding RB, Senior Living, Series A, 6.00%, 2/01/34	1,190	1,176,946
		6,236,546
<b>Maryland 1.9%</b>		
Maryland Community Development Administration, RB, AMT, 5.10%, 9/01/37	1,835	1,847,460
Maryland Community Development Administration, Refunding RB, Residential, Series D, 4.90%, 9/01/42	3,250	3,149,380
Maryland Health & Higher Educational Facilities Authority, Refunding RB: Charlestown Community, 6.25%, 1/01/41	2,000	2,082,800
University of Maryland Medical System, 5.00%, 7/01/34	2,100	2,135,700
	2,100	2,148,237

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University of Maryland Medical System, 5.13%, 7/01/39

11,363,577

	Par (000)	Value
<b>Municipal Bonds</b>		
<b>Massachusetts 5.8%</b>		
Massachusetts Bay Transportation Authority, Refunding RB, General Transportation System, Series A, 7.00%, 3/01/19	\$ 3,010	\$ 3,636,321
Massachusetts HFA, HRB, Series A, AMT, 5.20%, 12/01/37	2,935	2,951,730
Massachusetts HFA, RB, S/F, Series 130, AMT, 5.00%, 12/01/32	2,500	2,500,000
Massachusetts HFA, Refunding RB, Series C, AMT, 5.35%, 12/01/42	6,550	6,607,836
Massachusetts Water Resources Authority, RB, Series A, 6.50%, 7/15/19	16,000	19,470,080
		35,165,967
<b>Michigan 4.3%</b>		
City of Detroit Michigan, RB, Second Lien, Series B (AGM):		
6.25%, 7/01/36	2,500	2,807,450
7.00%, 7/01/36	1,250	1,474,413
Lansing Board of Water & Light, RB, Series A, 5.50%, 7/01/41	1,660	1,816,438
Michigan State Hospital Finance Authority, Refunding RB: Henry Ford Health System, Series A, 5.25%, 11/15/46	7,950	7,736,463
McLaren Health Care, 5.75%, 5/15/38	7,285	7,566,929
Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, 8.25%, 9/01/39	4,100	4,865,552
		26,267,245
<b>Minnesota 0.5%</b>		
Tobacco Securitization Authority Minnesota, Refunding RB, Tobacco Settlement, Series B, 5.25%, 3/01/31	3,000	3,030,570
<b>Mississippi 5.2%</b>		
County of Lowndes Mississippi, Refunding RB, Weyerhaeuser Co. Project:		
Series A, 6.80%, 4/01/22	9,160	9,730,485
VRDN, Series B, 6.70%, 4/01/22	4,500	4,780,170
Mississippi Business Finance Corp., Refunding RB, System Energy Resource Inc. Project:		
5.88%, 4/01/22	15,000	15,072,000
5.90%, 5/01/22	2,250	2,256,300
		31,838,955
<b>Nebraska 0.7%</b>		
Omaha Public Power District, RB, Series B, 5.00%, 2/01/36 (d)	4,000	4,263,160
<b>Nevada 0.9%</b>		
County of Clark Nevada, RB, Series B, 5.75%, 7/01/42	5,000	5,332,250





## Schedule of Investments (continued)

**BlackRock MuniVest Fund, Inc. (MVF)**  
 (Percentages shown are based on Net Assets)

	Par (000)	Value
<b>Municipal Bonds</b>		
<b>New Hampshire 0.4%</b>		
New Hampshire Health & Education Facilities Authority, Refunding RB, Elliot Hospital, Series B, 5.60%, 10/01/22	\$ 2,300	\$ 2,399,291
<b>New Jersey 6.6%</b>		
Delaware River Port Authority, RB, Series D, 5.00%, 1/01/40	195	199,945
New Jersey EDA, RB, Cigarette Tax: 5.50%, 6/15/24	9,080	9,071,556
5.75%, 6/15/34	3,695	3,555,070
New Jersey EDA, Refunding RB, School Facilities Construction, Series AA, 5.25%, 12/15/33	10,000	10,474,900
New Jersey State Housing & Mortgage Finance Agency, RB, Series AA, 6.38%, 10/01/28	1,420	1,573,531
New Jersey State Transportation Trust Fund Authority, RB, Transportation System, Series B, 5.50%, 6/15/31 (d)	8,000	8,666,560
Tobacco Settlement Financing Corp. New Jersey, RB, 7.00%, 6/01/13 (a)	5,980	6,566,578
		40,108,140
<b>New York 4.6%</b>		
Metropolitan Transportation Authority, RB, Series 2008C: 6.25%, 11/15/23	3,245	3,836,207
6.50%, 11/15/28	14,925	17,467,772
New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51	3,500	3,715,145
Port Authority of New York & New Jersey, RB, JFK International Air Terminal, 6.00%, 12/01/36	3,165	3,301,981
		28,321,105
<b>North Carolina 0.5%</b>		
Gaston County Industrial Facilities & Pollution Control Financing Authority North Carolina, RB, Exempt Facilities, National Gypsum Co. Project, AMT, 5.75%, 8/01/35	4,105	3,182,032
<b>Ohio 1.1%</b>		
Buckeye Tobacco Settlement Financing Authority, RB, Senior, Series A-2, 6.50%, 6/01/47	1,125	863,122
County of Butler Ohio, RB, UC Health, 5.50%, 11/01/40	3,500	3,396,365
County of Lucas Ohio, Refunding RB, Promedica Healthcare, Series A, 6.50%, 11/15/37	1,915	2,181,664
		6,441,151

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<b>Pennsylvania 0.9%</b>		
Chester County IDA, RB, Aqua Pennsylvania Inc. Project, Series A, AMT (NPFGC), 5.00%, 2/01/40	540	540,691
<b>Municipal Bonds</b>		
	<b>Par (000)</b>	<b>Value</b>
<b>Pennsylvania (concluded)</b>		
Pennsylvania Economic Development Financing Authority, Refunding RB, Aqua Pennsylvania Inc. Project, Series A, AMT, 5.00%, 12/01/34	\$ 2,780	\$ 2,836,545
Philadelphia Authority for Industrial Development, RB: Arbor House Inc. Project, Series E, 6.10%, 7/01/33	1,000	977,660
Rieder House Project, Series A, 6.10%, 7/01/33	1,355	1,324,730
		5,679,626
<b>Puerto Rico 2.6%</b>		
Puerto Rico Sales Tax Financing Corp., RB, First Sub-Series A, 6.38%, 8/01/39	13,000	14,396,460
Puerto Rico Sales Tax Financing Corp., Refunding RB, CAB, Series A (NPFGC), 5.68%, 8/01/41 (e)	10,000	1,547,100
		15,943,560
<b>South Carolina 1.0%</b>		
County of Georgetown South Carolina, Refunding RB, International Paper Co. Project, Series A, AMT, 5.55%, 12/01/29	1,000	992,130
County of Richland South Carolina, Refunding RB, International Paper Co. Project, AMT, 6.10%, 4/01/23	5,000	5,137,850
		6,129,980
<b>Texas 13.3%</b>		
Brazos River Authority, Refunding RB, Texas Utility Co., Series, AMT, 7.70%, 4/01/33	3,055	762,681
Brazos River Harbor Navigation District, Refunding RB, Dow Chemical Co. Project, Series A-7, AMT, 6.63%, 5/15/33	11,460	11,587,550
Central Texas Regional Mobility Authority, RB, Senior Lien: 5.75%, 1/01/31	1,000	1,005,350
6.00%, 1/01/41	4,300	4,323,650
City of Houston Texas, RB, Senior Lien, Series A, 5.50%, 7/01/34	8,335	8,868,690
Gulf Coast Waste Disposal Authority, Refunding RB, Series A, AMT, 6.10%, 8/01/24	4,000	4,099,360
Harris County Health Facilities Development Corp., Refunding RB, Memorial Hermann Healthcare System, Series B: 7.13%, 12/01/31	3,500	3,932,705
7.25%, 12/01/35	5,400	6,063,012
Houston Industrial Development Corp., RB, Senior, Air Cargo, AMT, 6.38%,	1,785	1,578,422

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1/01/23

La Vernia Higher Education Finance

Corp., RB, KIPP Inc., 6.25%, 8/15/39

925

975,736

BLACKROCK MUNIVEST FUND, INC.

NOVEMBER 30, 2011

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## Schedule of Investments (continued)

BlackRock MuniVest Fund, Inc. (MVF)  
(Percentages shown are based on Net Assets)

	Par (000)	Value
<b>Municipal Bonds</b>		
<b>Texas (concluded)</b>		
Love Field Airport Modernization Corp., RB, Southwest Airlines Co. Project, 5.25%, 11/01/40	\$ 3,600	\$ 3,465,216
Matagorda County Navigation District No. 1 Texas, Refunding RB, CenterPoint Energy Project, 5.60%, 3/01/27 (f)	9,355	9,648,934
North Texas Tollway Authority, Refunding RB, First Tier, Series A, 6.25%, 1/01/39	3,500	3,786,335
Tarrant County Cultural Education Facilities Finance Corp., RB, Scott & White Healthcare, 6.00%, 8/15/45	5,000	5,360,000
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien: LBJ Infrastructure Group LLC, LBJ Freeway Managed Lanes Project, 7.00%, 6/30/40	10,000	10,815,800
NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39	4,710	5,032,729
		81,306,170
<b>US Virgin Islands 1.2%</b>		
United States Virgin Islands, Refunding RB, Hovensa Coker Project, AMT, 6.50%, 7/01/21	8,000	7,629,680
<b>Vermont 0.2%</b>		
Vermont Educational & Health Buildings Financing Agency, RB, Developmental & Mental Health, Series A, 6.38%, 6/15/22	1,000	964,560
<b>Virginia 2.8%</b>		
Chesterfield County IDA, Refunding RB, Virginia Electric & Power Co., Series A, 5.88%, 6/01/17	1,425	1,450,835
City of Norfolk Virginia, Refunding RB, Series B (AMBAC), 5.50%, 2/01/31	3,550	3,550,319
City of Portsmouth Virginia, GO, Refunding, Series D, 5.00%, 7/15/34	3,105	3,324,803
Fairfax County EDA, Refunding RB, Goodwin House Inc.: 5.13%, 10/01/37	2,000	1,907,640
5.13%, 10/01/42	6,015	5,655,965
Virginia HDA, Refunding RB, Sub-Series A3, AMT, 5.05%, 7/01/26	1,325	1,353,700
		17,243,262
<b>Washington 4.6%</b>		
Energy Northwest, Refunding RB, Series B, 7.13%, 7/01/16	14,320	17,932,363

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Seattle Housing Authority Washington, HRB, Replacement Housing Projects, 6.13%, 12/01/32	2,175	2,079,866
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	Par (000)	Value
<b>Municipal Bonds</b>		
<b>Washington (concluded)</b>		
Washington Health Care Facilities Authority, Refunding RB, Catholic Health Initiatives, Series D, 6.38%, 10/01/36	\$ 7,000	\$ 7,808,080
		27,820,309
<b>West Virginia 0.4%</b>		
West Virginia Hospital Finance Authority, Refunding RB, Charleston, Series A, 5.63%, 9/01/32	2,500	2,546,100
<b>Wisconsin 1.5%</b>		
City of Milwaukee Wisconsin, RB, Senior, Air Cargo, AMT, 6.50%, 1/01/25	1,485	1,310,022
Wisconsin Health & Educational Facilities Authority, MRB, Hudson Memorial Hospital (FHA), 5.70%, 1/15/29	4,500	4,586,130
Wisconsin Health & Educational Facilities Authority, RB, SynergyHealth Inc., 6.00%, 11/15/32	3,040	3,098,581
		8,994,733
<b>Wyoming 0.8%</b>		
County of Sweetwater Wyoming, Refunding RB, Idaho Power Co. Project, 5.25%, 7/15/26	4,500	4,882,815
<b>Total Municipal Bonds 108.1%</b>		659,717,985

**Municipal Bonds Transferred to Tender**

**Option Bond (TOB) Trusts (g)**

<b>Arizona 0.6%</b>		
Phoenix Civic Improvement Corp., RB, Junior Lien, Series A, 5.00%, 7/01/34	3,500	3,719,905
<b>California 5.3%</b>		
Los Angeles Community College District California, GO, Election of 2008, Series A, 6.00%, 8/01/33	9,586	10,860,881
University of California, RB, Series O, 5.25%, 5/15/39	20,000	21,266,600
		32,127,481
<b>Connecticut 2.1%</b>		
Connecticut State Health & Educational Facility Authority, RB, Yale University, Series Z-3, 5.05%, 7/01/42	12,000	12,854,160
<b>District of Columbia 1.4%</b>		
District of Columbia Water & Sewer Authority, RB, Series A, 5.50%, 10/01/39	7,495	8,133,270
<b>Florida 4.0%</b>		
County of Miami-Dade Florida, RB, Water & Sewer System (AGM), 5.00%, 10/01/39	14,747	15,300,426



## Schedule of Investments (continued)

BlackRock MuniVest Fund, Inc. (MVF)  
(Percentages shown are based on Net Assets)

Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts (g) Florida (concluded)	Par (000)	Value
Miami-Dade County Expressway Authority, RB, Series A (AGC), 5.00%, 7/01/35	\$ 8,900	\$ 9,181,685
		24,482,111
<b>Illinois 3.3%</b>		
City of Chicago Illinois, Refunding RB, Second Lien (AGM), 5.25%, 11/01/33	1,330	1,378,664
Illinois Finance Authority, RB, University of Chicago, Series B, 6.25%, 7/01/38	10,000	11,421,600
Illinois State Toll Highway Authority, RB, Series B, 5.50%, 1/01/33	6,999	7,371,326
		20,171,590
<b>Kentucky 5.4%</b>		
Kentucky Economic Development Finance Authority, Refunding RB, St. Elizabeth, Series A, 5.50%, 5/01/39	8,003	8,373,956
Kentucky Housing Corp., Refunding RB, Series L, AMT, 5.25%, 1/01/38	7,010	7,078,137
Lexington-Fayette Urban County Airport Board, Refunding RB, Series A, 5.00%, 7/01/27	7,001	7,540,836
Louisville & Jefferson County Metropolitan Government Parking Authority, RB, Series A, 5.38%, 12/01/39	9,195	9,851,891
		32,844,820
<b>Maryland 0.8%</b>		
Maryland State Transportation Authority, RB, Transportation Facility Project (AGM), 5.00%, 7/01/41	4,710	4,957,887
<b>Nevada 2.9%</b>		
Clark County Water Reclamation District, GO, Series B, 5.75%, 7/01/34	15,789	17,593,082
<b>New York 6.6%</b>		
New York City Municipal Water Finance Authority, RB: Series DD, 5.00%, 6/15/37	24,199	25,309,709
Series FF-2, 5.50%, 6/15/40	4,154	4,556,093
New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51	10,000	10,614,700
		40,480,502
<b>North Carolina 3.0%</b>		
North Carolina Capital Facilities Finance Agency, Refunding RB: Duke University Project, Series A, 5.00%, 10/01/41	12,678	13,179,307
Wake Forest University, 5.00%, 1/01/38	5,000	5,252,150



18,431,457

Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts (g)	Par (000)	Value
<b>Ohio 3.6%</b>		
County of Allen Ohio, Refunding RB, Catholic Healthcare, Series A, 5.25%, 6/01/38	\$ 2,870	\$ 2,919,192
County of Montgomery Ohio, Refunding RB, Catholic Healthcare, Series A, 5.50%, 5/01/34	5,470	5,769,263
Ohio Higher Educational Facility Commission, Refunding RB, Hospital, Cleveland Clinic Health, Series A, 5.25%, 1/01/33	4,400	4,540,712
State of Ohio, RB, Cleveland Clinic Health, Series B, 5.50%, 1/01/34	8,500	8,921,090
		22,150,257
<b>Oregon 2.1%</b>		
Oregon State Housing & Community Services Department, HRB, Series A, AMT, 4.95%, 7/01/30	13,000	12,999,477
<b>South Carolina 0.5%</b>		
South Carolina State Housing Finance & Development Authority, Refunding RB, Series B-1, 5.55%, 7/01/39	3,129	3,237,963
<b>Texas 8.1%</b>		
Harris County Health Facilities Development Corp., Refunding RB, School Health Care System, Series B, 5.75%, 7/01/27	20,970	26,403,956
Houston Higher Education Finance Corp., RB, Rice University Project, Series A, 5.00%, 5/15/40	10,000	10,815,772
Texas Department of Housing & Community Affairs, MRB, Series B, AMT (Ginnie Mae), 5.25%, 9/01/32	6,276	6,361,968
Texas State University Systems, Refunding RB (AGM), 5.00%, 3/15/30	5,667	5,874,265
		49,455,961
<b>Virginia 2.7%</b>		
Fairfax County IDA Virginia, Refunding RB, Health Care, Inova Health System, Series A, 5.50%, 5/15/35	2,099	2,243,978
Virginia Small Business Financing Authority, Refunding RB, Sentara Healthcare, 5.00%, 11/01/40	5,002	5,171,520
Virginia State Commonwealth Transportation Board, RB, CAP Projects, 5.00%, 5/15/32	8,001	8,698,414
		16,113,912
<b>Washington 4.3%</b>		
Central Puget Sound Regional Transit Authority, RB, Series A: 5.00%, 11/01/34	5,000	5,230,225
5.00%, 11/01/36	6,000	6,276,270



## Schedule of Investments (continued)

**BlackRock MuniVest Fund, Inc. (MVF)**  
 (Percentages shown are based on Net Assets)

Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts (g) Washington (concluded)	Par (000)	Value
Central Puget Sound Regional Transit Authority, RB, Series A (concluded): (AGM), 5.00%, 11/01/32	\$ 14,007	\$ 14,746,207
		26,252,702
<b>Wisconsin 1.0%</b>		
Wisconsin Health & Educational Facilities Authority, Refunding RB, Froedtert & Community Health Inc., 5.25%, 4/01/39	6,099	6,175,936
<b>Total Municipal Bonds Transferred to Tender Option Bond (TOB) Trusts 57.7%</b>		352,182,473
<b>Total Long-Term Investments (Cost \$962,055,508) 165.8%</b>		1,011,900,458
<b>Short-Term Securities</b>	<b>Shares</b>	
FPI Institutional Tax-Exempt Fund, 0.01% (h)(i)	25,745,388	25,745,388
<b>Total Short-Term Securities (Cost \$25,745,388) 4.2%</b>		25,745,388
<b>Total Investments (Cost \$987,800,896*) - 170.0%</b>		1,037,645,846
<b>Other Assets Less Liabilities 0.0%</b>		276,320
<b>Liability for TOB Trust Certificates, Including Interest Expense and Fees Payable (30.1)%</b>		(183,606,636)
<b>AMPS, at Redemption Value (39.9)%</b>		(243,852,769)
<b>Net Assets Applicable to Common Shares 100.0%</b>		\$ 610,462,761

\* The cost and unrealized appreciation (depreciation) of investments as of November 30, 2011, as computed for federal income tax purposes, were as follows:

Aggregate cost	\$ 806,565,893
Gross unrealized appreciation	\$ 58,130,737
Gross unrealized depreciation	(10,572,996)
Net unrealized appreciation	\$ 47,557,741

- (a) US 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. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (c) Security is collateralized by Municipal or US Treasury Obligations.
- (d) When-issued security. Unsettled when-issued transactions were as follows:

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Counterparty	Value	Unrealized Appreciation
Merrill Lynch Pierce Fenner & Smith, Inc.	\$ 4,263,160	\$ 13,520
Morgan Stanley & Co. LLC	\$ 8,666,560	\$ 191,920

- (e) Represents a zero-coupon bond. Rate shown reflects the current yield as of report date.
- (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 August 31, 2011	Net Activity	Shares Held at November 30, 2011	Income
FFI Institutional Tax-Exempt Fund	44,571,921	(18,826,533)	25,745,388	\$ 758

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

## Schedule of Investments (concluded)

BlackRock MuniVest Fund, Inc. (MVF)

Fair Value Measurements - Various inputs are used in determining the fair value of investments. 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)

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 is based on the pricing transparency of the investment 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 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 November 30, 2011 in determining the fair valuation of the Fund's investments:

Valuation Inputs	Level 1	Level 2	Level 3	Total
<b>Assets:</b>				
Investments:				
Long-Term Investments <sup>1</sup>		\$ 1,011,900,458		\$ 1,011,900,458
Short-Term Securities	\$ 25,745,388			25,745,388
<b>Total</b>	\$ 25,745,388	\$ 1,011,900,458		\$ 1,037,645,846

<sup>1</sup> 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 MuniVest Fund, Inc.

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

Date: January 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 MuniVest Fund, Inc.

Date: January 23, 2012

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

Date: January 23, 2012

