

BLACKROCK MUNIVEST FUND, INC.

Form N-Q

January 22, 2018

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 52nd Street, New York, NY 10055

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

Date of fiscal year end: 08/31/2018

Date of reporting period: 11/30/2017

Item 1 Schedule of Investments

Schedule of Investments (unaudited)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i>	<i>Value</i>
	<i>(000)</i>	
Municipal Bonds 115.6%		
Alabama 2.8%		
City of Selma Alabama IDB, RB, Gulf Opportunity Zone, International Paper Co. Project, Series A:		
5.80%, 05/01/34	\$ 1,850	\$ 2,025,898
5.38%, 12/01/35	1,000	1,116,640
Lower Alabama Gas District, RB, Series A, 5.00%, 09/01/46	4,555	5,597,184
State of Alabama Docks Department, Refunding RB, 6.00%, 10/01/20 ^(a)	7,610	8,531,038
		17,270,760
Alaska 0.6%		
City of Anchorage Alaska Electric Revenue, Refunding RB, Series A, 5.00%, 12/01/41	3,000	3,424,620
Arizona 4.0%		
Arizona IDA, Refunding RB, Basis Schools, Inc. Projects, Series A, 5.38%, 07/01/50 ^(b)	2,500	2,645,000
City of Phoenix Arizona Civic Improvement Corp., Refunding RB, Junior Lien, Series A, 5.00%, 07/01/40	2,000	2,170,320
City of Phoenix Arizona IDA, RB, Candeco School, Inc. Project:		
6.63%, 07/01/33	2,245	2,543,989
6.88%, 07/01/44	3,440	3,867,557
City of Phoenix Arizona IDA, Refunding RB ^(b) :		
Basis Schools, Inc. Projects,		
5.00%, 07/01/35	600	627,282
Basis Schools, Inc. Projects,		
5.00%, 07/01/45	760	785,126
Basis Schools, Inc. Projects, Series A,		
5.00%, 07/01/35	1,125	1,176,154
Legacy Traditional School Projects,		
5.00%, 07/01/45	700	700,007
County of Maricopa Arizona Pollution Control Corp., Refunding RB, Southern California Edison Co., Series A, 5.00%, 06/01/35	3,300	3,515,391
Salt Verde Arizona Financial Corp., RB, Senior, 5.00%, 12/01/37	5,725	6,970,989
		25,001,815
California 6.3%		
California Health Facilities Financing Authority, RB:		
	5,000	5,345,300

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St. Joseph Health System, Series A, 5.75%, 07/01/39		
Sutter Health, Series B, 6.00%, 08/15/42	5,600	6,280,960
	<i>Par</i>	
<i>Security</i>	<i>(000)</i>	<i>Value</i>
California (continued)		
California Health Facilities Financing Authority, Refunding RB, Dignity Health, Series A, 6.00%, 07/01/19 ^(a)	\$ 1,055	\$ 1,128,438
City of Los Angeles California Department of Airports, Refunding ARB, Los Angeles International Airport, Series A, 5.25%, 05/15/39	1,200	1,262,580
Los Angeles Community College District, GO, Refunding Election of 2008, Series A, 6.00%, 08/01/19 ^(a)	9,585	10,295,153
Oakland Unified School District/Alameda County, GO, Series A, 5.00%, 08/01/40	1,000	1,143,250
Poway Unified School District, GO, Refunding, CAB, School Facilities Improvement District No. 2007-1, Election of 2008, Series B, 0.00%, 08/01/46 ^(c)	10,000	3,124,800
State of California, GO, Various Purposes, 6.50%, 04/01/33	9,675	10,324,289
		38,904,770
Colorado 0.8%		
Centerra Metropolitan District No. 1, Tax Allocation Bonds, 5.00%, 12/01/47 ^(b)	1,025	1,052,849
Colorado Health Facilities Authority, RB, Catholic Health Initiatives, Series D, 6.25%, 10/01/33	2,500	2,590,400
Copperleaf Metropolitan District No. 2, GO, Refunding, 5.75%, 12/01/45	1,000	1,052,680
		4,695,929
Connecticut 0.4%		
Connecticut State Health & Educational Facility Authority, RB, Sacred Heart University, Series I -1, 5.00%, 07/01/42	2,000	2,282,440
Delaware 0.4%		
County of Sussex Delaware, RB, NRG Energy, Inc., Indian River Power LLC Project, 6.00%, 10/01/40	2,500	2,648,775
District of Columbia 0.2%		
Metropolitan Washington Airports Authority, Refunding RB, Dulles Toll Road, 1st Senior Lien, Series A: 5.00%, 10/01/39	415	435,435

Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i>	<i>Value</i>
	<i>(000)</i>	
District of Columbia (continued)		
Metropolitan Washington Airports Authority, Refunding RB, Dulles Toll Road, 1st Senior Lien, Series A (continued):		
5.25%, 10/01/44	\$ 650	\$ 683,936
		1,119,371
Florida 7.2%		
Celebration Pointe Community Development District, Special Assessment Bonds, County of Alachua Florida ^(b) :		
5.00%, 05/01/32	905	944,304
5.00%, 05/01/48	2,270	2,336,874
County of Miami-Dade Florida, GO, Building Better Communities Program ^(a) :		
Series B, 6.38%, 07/01/18	4,630	4,765,196
Series B-1, 5.63%, 07/01/18	5,000	5,124,600
County of Miami-Dade Florida, Refunding RB, Transit System Sales Surtax, 5.00%, 07/01/42	3,750	4,168,275
County of Miami-Dade Florida Aviation, Refunding ARB, Miami International Airport, Series A-1, 5.38%, 10/01/41	10,290	11,227,110
County of Miami-Dade Florida Educational Facilities Authority, Refunding RB, University of Miami, Series A, 5.00%, 04/01/45	4,625	5,190,268
County of Miami-Dade Florida Expressway Authority, Refunding RB, Series A (AGM), 5.00%, 07/01/35	8,900	9,569,102
Lakewood Ranch Stewardship District, Special Assessment Bonds, Lakewood National & Polo Run Projects:		
4.63%, 05/01/27	255	264,573
5.25%, 05/01/37	470	500,113
5.38%, 05/01/47	770	817,540
		44,907,955
Georgia 0.8%		
City of Atlanta Georgia Department of Aviation, Refunding GARB, Series B, AMT, 5.00%, 01/01/29	1,070	1,156,606
	<i>Par</i>	
<i>Security</i>	<i>(000)</i>	<i>Value</i>
Georgia (continued)		
DeKalb Georgia Private Hospital Authority, Refunding RB, Children's Healthcare, 5.25%, 11/15/39	\$ 3,335	\$ 3,573,019

		4,729,625
Hawaii 0.9%		
State of Hawaii Harbor System, RB, Series A, 5.50%, 07/01/35	5,000	5,435,700
Illinois 12.7%		
Chicago Board of Education, GO, Series H, 5.00%, 12/01/36	865	884,809
Chicago Board of Education, GO, Refunding, Dedicated Revenues: Series D, 5.00%, 12/01/25	1,560	1,627,829
Series F, 5.00%, 12/01/23	1,180	1,241,030
Series G, 5.00%, 12/01/34	865	886,193
City of Chicago Illinois O Hare International Airport, GARB, Senior Lien, Series D, AMT, 5.00%, 01/01/42	1,450	1,633,440
City of Chicago Illinois Transit Authority, RB, Sales Tax Receipts, 5.25%, 12/01/36	2,110	2,270,866
City of Chicago Illinois Wastewater Transmission, Refunding RB, 2nd Lien, Series C, 5.00%, 01/01/39	1,000	1,080,890
City of Chicago Illinois Waterworks, Refunding RB, 2nd Lien (AGM), 5.25%, 11/01/33	1,135	1,164,589
County of Cook Illinois Community College District No. 508, GO, University & College Improvements, 5.25%, 12/01/31	5,000	5,363,050
Illinois Finance Authority, RB: Advocate Health Care Network, Series D, 6.50%, 11/01/18 ^(a)	9,700	10,151,147
Memorial Health System, Series A, 5.25%, 07/01/44	1,785	1,931,888
Illinois Finance Authority, Refunding RB: Northwestern Memorial Hospital, Series A, 6.00%, 08/15/39	9,000	9,692,280
OSF Healthcare System, 6.00%, 05/15/20 ^(a)	3,205	3,524,186
OSF Healthcare System, 6.00%, 05/15/39	1,455	1,555,162
Presence Health Network, Series C, 5.00%, 02/15/41	3,600	3,958,884
Illinois State Toll Highway Authority, RB, Series A, 5.00%, 01/01/42 ^(d)	7,990	9,167,646

Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i>	<i>Value</i>
	<i>(000)</i>	
Illinois (continued)		
Metropolitan Pier & Exposition Authority, RB, McCormick Place Expansion Project Bonds:		
Series A, 0.00%, 12/15/56	\$ 8,755	\$ 1,264,922
Series A, 5.00%, 06/15/57 ^(d)	2,390	2,563,299
Series B, 0.00%, 12/15/54	13,125	2,116,931
Railsplitter Tobacco Settlement Authority, RB, 6.00%, 06/01/28	2,645	2,973,430
Regional Transportation Authority, RB:		
Series A (AMBAC), 7.20%, 11/01/20	1,235	1,359,043
Series C (NPFGC), 7.75%, 06/01/20	2,230	2,425,816
Village of Hodgkins Illinois, RB, Metropolitan Biosolids Management LLC Project, AMT, 6.00%, 11/01/23	10,000	10,014,300
		78,851,630
Indiana 1.4%		
City of Valparaiso Indiana, RB, Exempt Facilities, Pratt Paper LLC Project, AMT, 6.75%, 01/01/34	2,250	2,669,985
State of Indiana Finance Authority, RB, Private Activity Bond, Ohio River Bridges, Series A, AMT, 5.00%, 07/01/40	2,640	2,851,411
State of Indiana Finance Authority, Refunding RB, Deaconess Health System, Series A, 5.00%, 03/01/39	3,000	3,359,370
		8,880,766
Iowa 0.9%		
Iowa Finance Authority, Refunding RB, Midwestern Disaster Area, Iowa Fertilizer Co. Project, 5.25%, 12/01/25	4,500	4,782,285
Iowa Tobacco Settlement Authority, Refunding RB, Asset-Backed, CAB, Series B, 5.60%, 06/01/34	1,000	1,006,210
		5,788,495
Kansas 1.0%		
City of Lenexa Kansas, Refunding RB, Lakeview Village, Inc., Series A, 5.00%, 05/15/43	1,965	2,032,242
Wyandotte County-Kansas City Unified Government Utility System, RB, Series A, 5.00%, 09/01/40	3,700	4,235,168
		6,267,410
Kentucky 2.7%		
County of Owen Kentucky, RB, Kentucky American Water Co. Project, Series B, 5.63%, 09/01/39	1,000	1,057,640
<i>Security</i>	<i>Par</i>	<i>Value</i>

(000)

Kentucky (continued)

Kentucky Economic Development Finance Authority, Refunding RB, Hospital Facilities, St. Elizabeth Medical Center, Inc., Series A, 5.50%, 05/01/19 ^(a)	\$ 8,000	\$ 8,434,960
Lexington-Fayette Urban County Airport Board, Refunding GARB, Series A, 5.00%, 07/01/19 ^(a)	7,000	7,369,740
		16,862,340

Louisiana 4.0%

City of New Orleans Aviation Board, ARB, General Airport North Terminal Project, Series B, AMT, 5.00%, 01/01/48	4,000	4,536,160
Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp. Project, Series A-1, 6.50%, 11/01/35	2,615	2,948,177
Parish of St. Charles Louisiana, RB, Valero Energy Corp., 4.00%, 12/01/40 ^(e)	2,210	2,357,761
Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, Series A: 5.25%, 05/15/31	3,420	3,703,997
5.25%, 05/15/32	4,375	4,779,994
5.25%, 05/15/33	4,750	5,146,482
5.25%, 05/15/35	1,500	1,628,355
		25,100,926

Maine 1.0%

Maine Health & Higher Educational Facilities Authority, RB, Series A: 5.00%, 07/01/19 ^(a)	1,560	1,641,151
5.00%, 07/01/39	3,440	3,578,460
Portland Housing Development Corp., Refunding RB, Senior Living, Retirement Facilities, Series A, 6.00%, 02/01/34	1,190	1,191,690
		6,411,301

Maryland 3.2%

City of Baltimore Maryland, Refunding RB, East Baltimore Research Park, Series A, 4.50%, 09/01/33	545	569,013
County of Howard Maryland Housing Commission, RB, M/F Housing, Woodfield Oxford Square Apartments, 5.00%, 12/01/42	4,935	5,577,586

Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i> <i>(000)</i>	<i>Value</i>
Maryland (continued)		
Maryland Health & Higher Educational Facilities Authority, Refunding RB: Charlestown Community Project, 6.25%, 01/01/21 ^(a)	\$ 2,000	\$ 2,271,480
Meritus Medical Center Issue, 5.00%, 07/01/40	6,350	6,895,211
University of Maryland Medical System, 5.00%, 07/01/19 ^(a)	1,990	2,093,520
University of Maryland Medical System, 5.13%, 07/01/19 ^(a)	2,100	2,213,295
		19,620,105
Massachusetts 2.3%		
Massachusetts Bay Transportation Authority, Refunding RB, General Transportation System, Series A, 7.00%, 03/01/19	740	767,624
Massachusetts Development Finance Agency, RB, Emerson College Issue, Series A: 5.00%, 01/01/47	845	951,901
5.25%, 01/01/42	1,895	2,179,496
Massachusetts Development Finance Agency, Refunding RB, Emerson College, Series A, 5.00%, 01/01/40	2,180	2,497,430
Massachusetts HFA, Refunding RB, Series C, AMT, 5.35%, 12/01/42	3,625	3,843,479
Massachusetts Water Resources Authority, RB, Series A, 6.50%, 07/15/19 ^(f)	3,965	4,126,772
		14,366,702
Michigan 2.3%		
City of Detroit Michigan Water Supply System Revenue, RB, 2nd Lien, Series B (AGM), 6.25%, 07/01/19 ^(a)	2,495	2,675,089
Michigan State Hospital Finance Authority, Refunding RB, McLaren Health Care, Series A, 5.75%, 05/15/18 ^(a)	7,285	7,430,991
Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, Series V, 8.25%, 09/01/18 ^(a)	4,100	4,308,567
		14,414,647
Minnesota 0.7%		
City of Cologne Minnesota Charter School, LRB, Cologne Academy Project, Series A, 5.00%, 07/01/45	1,500	1,520,070
	<i>Par</i>	
<i>Security</i>	<i>(000)</i>	<i>Value</i>

Minnesota (continued)

County of St. Paul Minnesota Housing & Redevelopment Authority, Refunding RB, Fairview Health Services, Series A, 4.00%, 11/15/43	\$ 1,940	\$ 2,025,845
Housing & Redevelopment Authority of The City of Saint Paul Minnesota, RB, Great River School Project, Series A, 5.50%, 07/01/52 ^(b)	695	706,342
		4,252,257

Mississippi 4.5%

County of Lowndes Mississippi, Refunding RB, Solid Waste Disposal & Pollution Control, Weyerhaeuser Co. Project: Series A, 6.80%, 04/01/22	9,160	10,613,875
Series B, 6.70%, 04/01/22	4,500	5,196,060
Mississippi Business Finance Corp., Refunding RB, System Energy Resource, Inc. Project, 5.88%, 04/01/22	9,305	9,331,892
Mississippi Development Bank, Refunding RB, Municipal Energy Agency Of Mississippi, Series A (AGM), 4.00%, 03/01/41	3,000	3,102,120
		28,243,947

Montana 0.3%

Montana State Board of Housing, RB, S/F, Series B-2: 3.38%, 12/01/37	835	828,395
3.50%, 12/01/42	360	359,402
3.60%, 12/01/47	555	556,693
		1,744,490

Nebraska 1.1%

Central Plains Energy Project Nebraska, RB, Gas Project No. 3, 5.00%, 09/01/42	6,200	6,755,458
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Nevada 0.2%

City of Carson City Nevada, RB, Carson Tahoe Regional Healthcare Project, 5.00%, 09/01/42 ^(d)	1,090	1,215,841
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New Jersey 9.8%

Casino Reinvestment Development Authority, Refunding RB, 5.25%, 11/01/44	1,400	1,485,582
New Jersey EDA, RB: Continental Airlines, Inc. Project, Series A, AMT, 5.63%, 11/15/30	1,530	1,736,305

Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i>	<i>Value</i>
	<i>(000)</i>	
New Jersey (continued)		
New Jersey EDA, RB (continued):		
Goethals Bridge Replacement Project, AMT, Private Activity Bond, 5.38%, 01/01/43	\$ 10,000	\$ 11,127,700
Goethals Bridge Replacement Project, AMT, Private Activity Bond, 5.13%, 01/01/34	1,050	1,163,211
School Facilities Construction, Series UU, 5.00%, 06/15/40	3,390	3,605,129
New Jersey EDA, Refunding RB, School Facilities Construction: 5.25%, 06/15/19 ^(a)	2,650	2,794,425
Series AA, 5.25%, 06/15/19 ^(a)	700	738,150
Series AA, 5.25%, 12/15/33	6,650	6,906,557
New Jersey Transportation Trust Fund Authority, RB: CAB, Transportation System, Series A, 0.00%, 12/15/38 ^(c)	7,260	2,818,550
Transportation Program, Series AA, 5.25%, 06/15/33	8,750	9,477,213
Transportation Program, Series AA, 5.25%, 06/15/41	780	850,793
Transportation Program, Series AA, 5.00%, 06/15/44	4,450	4,772,180
Transportation System, Series B, 5.50%, 06/15/31	8,000	8,729,680
Tobacco Settlement Financing Corp., Refunding RB, Series 1A, 5.00%, 06/01/41	4,980	4,793,499
		60,998,974
New York 8.4%		
Build NYC Resource Corp., Refunding RB, Pratt Paper, Inc. Project, AMT, 5.00%, 01/01/35 ^(b)	2,145	2,457,784
City of New York New York Water & Sewer System, Refunding RB, 2nd General Resolution, Series FF-2, 5.50%, 06/15/40	4,150	4,391,779
Counties of New York Tobacco Trust IV, Refunding RB, Settlement Pass-Through Turbo, Series A, 6.25%, 06/01/41 ^(b)	3,500	3,616,165
Erie Tobacco Asset Securitization Corp., Refunding RB, Asset-Backed, Series A, 5.00%, 06/01/45	4,435	4,225,047
Metropolitan Transportation Authority, RB, Series C: 6.25%, 11/15/18 ^(a)	2,595	2,715,512
6.25%, 11/15/18 ^(a)	25	26,161
6.50%, 11/15/18 ^(a)	11,135	11,678,277
6.50%, 11/15/18 ^(a)	925	970,131
6.25%, 11/15/23	625	654,694
<i>Security</i>	<i>Par</i>	<i>Value</i>

(000)

New York (continued)

Metropolitan Transportation Authority, RB, Series C (continued):		
6.50%, 11/15/28	\$ 2,865	\$ 3,007,849
New York Counties Tobacco Trust IV, Refunding RB, Series A, 5.00%, 06/01/38	3,675	3,556,003
New York Liberty Development Corp., Refunding RB, 3 World Trade Center Project, Class 2(b):		
5.15%, 11/15/34	460	505,844
5.38%, 11/15/40	1,145	1,260,050
New York Transportation Development Corp., Refunding ARB, American Airlines, Inc., AMT:		
5.00%, 08/01/26	1,285	1,375,669
5.00%, 08/01/31	3,070	3,265,774
Port Authority of New York & New Jersey, ARB, Special Project, JFK International Air Terminal LLC Project, Series 8, 6.00%, 12/01/36	3,165	3,517,201
TSASC, Inc., Refunding RB, Series A, 5.00%, 06/01/41	1,785	1,988,972
Westchester Tobacco Asset Securitization, Refunding RB, Tobacco Settlement Bonds, Sub-Series C, 5.13%, 06/01/51	2,740	2,792,580
		52,005,492

Ohio 3.6%

County of Allen Ohio Hospital Facilities, Refunding RB, Catholic Healthcare Partners, Series A, 5.25%, 06/01/38	2,875	3,079,240
County of Butler Port Authority, RB, StoryPoint Fairfield Project, Series A-1(b):		
6.38%, 01/15/43	675	695,385
6.50%, 01/15/52	390	401,298
County of Franklin Ohio, RB, Health Care Facilities Improvement, OPRS Communities Obligation Group, Series A, 6.13%, 07/01/40	1,690	1,872,976
County of Lucas Ohio, Refunding RB, Promedica Healthcare, Series A, 6.50%, 11/15/37	1,915	2,270,099
County of Montgomery Ohio, RB, Catholic Health Initiatives, Series D-2, 5.45%, 10/01/38	7,430	8,217,431
County of Montgomery Ohio, Refunding RB, Catholic Health: 5.50%, 05/01/19(a)	1,910	2,012,472

Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

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<i>Security</i>	<i>Par</i> <i>(000)</i>	<i>Value</i>
Ohio (continued)		
County of Montgomery Ohio, Refunding RB, Catholic Health (continued):		
Series A, 5.50%, 05/01/34	\$ 3,560	\$ 3,715,892
		22,264,793
Oklahoma 0.6%		
Oklahoma Development Finance Authority, RB, Provident Oklahoma Education Resources, Inc., Cross Village Student Housing Project, Series A, 5.25%, 08/01/57		
	3,275	3,602,893
Pennsylvania 3.7%		
Allentown Neighborhood Improvement Zone Development Authority, RB, City Center Project, 5.00%, 05/01/42 ^(b)		
	1,725	1,843,732
County of Berks IDA, Refunding RB, Tower Health Projects, 5.00%, 11/01/47		
	1,940	2,169,754
County of Delaware Pennsylvania IDA, Refunding RB, Covanta Project, 5.00%, 07/01/43		
	5,000	5,034,600
County of Montgomery Pennsylvania IDA, Refunding RB, Whitemarsh Continuing Care Retirement Community, 5.25%, 01/01/40		
	4,170	4,251,232
Pennsylvania Economic Development Financing Authority, RB, Pennsylvania Bridge Finco LP, 5.00%, 12/31/38		
	2,565	2,878,033
Pennsylvania HFA, RB, S/F Housing Mortgage, Series 118-B, 4.05%, 10/01/40		
	3,850	3,973,238
Pennsylvania Turnpike Commission, RB:		
Series A-1, 5.00%, 12/01/41	440	500,236
Sub-Series B-1, 5.25%, 06/01/47	2,130	2,445,517
		23,096,342
Puerto Rico 1.1%		
Children s Trust Fund, Refunding RB, Tobacco Settlement Asset-Backed Bonds:		
5.50%, 05/15/39	3,555	3,446,110
5.63%, 05/15/43	3,400	3,276,104
		6,722,214
Rhode Island 1.7%		
Rhode Island Health & Educational Building Corp., Refunding RB, Hospital Financing, LifeSpan Obligation Group, 5.00%, 05/15/39		
	1,425	1,565,904
	<i>Par</i>	
<i>Security</i>	<i>(000)</i>	<i>Value</i>

Rhode Island (continued)

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Tobacco Settlement Financing Corp., Refunding RB, Series B:		
4.50%, 06/01/45	\$ 6,820	\$ 6,876,129
5.00%, 06/01/50	2,000	2,075,880
		10,517,913
South Carolina 1.2%		
State of South Carolina Public Service Authority, Refunding RB, Series E, 5.25%, 12/01/55	6,450	7,293,337
Texas 11.9%		
Central Texas Regional Mobility Authority, RB, Senior Lien, Series A:		
5.00%, 01/01/40	1,215	1,361,055
5.00%, 01/01/45	3,500	3,900,785
Central Texas Regional Mobility Authority, Refunding RB, Senior Lien:		
5.75%, 01/01/21 ^(a)	1,000	1,122,420
6.00%, 01/01/21 ^(a)	4,300	4,858,527
Series A, 5.00%, 01/01/43	6,925	7,562,100
City of Houston Texas Airport System, Refunding ARB, United Airlines, Inc. Terminal E Project, AMT, 5.00%, 07/01/29		
	2,665	2,925,797
County of Harris Texas Cultural Education Facilities Finance Corp., RB, 1st Mortgage, Brazos Presbyterian Homes, Inc. Project, Series B,		
7.00%, 01/01/23 ^(a)	850	1,058,301
County of Harris Texas Health Facilities Development Corp., Refunding RB, Memorial Hermann Healthcare System, Series B ^(a) :		
7.13%, 12/01/18	3,500	3,697,365
7.25%, 12/01/18	5,400	5,711,148
County of Tarrant Texas Cultural Education Facilities Finance Corp., RB, Scott & White Healthcare ^(a) :		
6.00%, 08/15/20	370	411,862
6.00%, 08/15/20	4,630	5,160,366
County of Tarrant Texas Cultural Education Facilities Finance Corp., Refunding RB, Trinity Terrace Project, 5.00%, 10/01/44		
	875	938,105
La Vernia Higher Education Finance Corp., RB, KIPP, Inc., Series A, 6.25%, 08/15/19 ^(a)		
	925	994,440
Love Field Airport Modernization Corp., RB, Southwest Airlines Co. Project, 5.25%, 11/01/40		
	1,100	1,204,753

Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i> <i>(000)</i>	<i>Value</i>
Texas (continued)		
New Hope Cultural Education Facilities Corp., RB, Collegiate Housing Tarleton State University Project, 5.00%, 04/01/35	\$ 500	\$ 537,360
New Hope Cultural Education Facilities Corp., Refunding RB, 1st Mortgage, Morningside Ministries Project, 6.25%, 01/01/33	1,600	1,794,224
North Texas Education Finance Corp., ERB, Uplift Education, Series A, 5.13%, 12/01/42	1,000	1,063,580
North Texas Tollway Authority, Refunding RB:		
1st Tier System, Series A, 6.25%, 01/01/19 ^(a)	2,845	2,984,462
1st Tier System, Series A, 6.25%, 01/01/39	655	684,874
1st Tier-Series A, 5.00%, 01/01/43	5,145	5,975,609
Series A, 5.00%, 01/01/38	5,000	5,595,900
Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien:		
LBJ Infrastructure Group LLC, 7.00%, 06/30/40	8,000	8,995,680
NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39	4,710	5,181,424
		73,720,137
Vermont 0.9%		
University of Vermont & State Agricultural College, Refunding RB, 5.00%, 10/01/43	4,995	5,770,424
Virginia 4.3%		
Ballston Quarter Community Development Authority, Tax Allocation Bonds, Series A:		
5.38%, 03/01/36	430	444,998
5.50%, 03/01/46	1,475	1,523,749
City of Portsmouth Virginia, GO, Refunding Series D, 5.00%, 07/15/20 ^(a)	3,030	3,289,398
County of Fairfax Virginia IDA, Refunding RB, Health Care-Inova Health, 5.50%, 05/15/19 ^(a)	735	775,513
Tobacco Settlement Financing Corp., Refunding RB, Senior Series B-1, 5.00%, 06/01/47	3,665	3,531,411
Virginia Small Business Financing Authority, RB, AMT:		
Senior Lien, Elizabeth River Crossings OpCo LLC Project, 6.00%, 01/01/37	2,150	2,438,508
	<i>Par</i>	
<i>Security</i>	<i>(000)</i>	<i>Value</i>
Virginia (continued)		
Virginia Small Business Financing Authority, RB, AMT (continued):		
Senior Lien, Elizabeth River Crossings OpCo LLC Project, 5.50%, 01/01/42	\$ 5,140	\$ 5,706,274

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Transform 66 P3 Project, 5.00%, 12/31/49	7,895	8,851,006
		26,560,857
Washington 3.0%		
Port of Seattle Washington, ARB, Intermediate Lien, Series C, AMT, 5.00%, 05/01/37	4,905	5,682,050
Port of Seattle Washington, RB, Intermediate Lien, Series C, AMT, 5.00%, 05/01/42	1,295	1,492,138
Washington Health Care Facilities Authority, RB, Catholic Health Initiatives, Series A, 5.75%, 01/01/45	4,010	4,447,732
Washington Health Care Facilities Authority, Refunding RB, Catholic Health Initiatives, Series D, 6.38%, 10/01/36	7,000	7,274,820
		18,896,740
West Virginia 0.4%		
West Virginia Hospital Finance Authority, Refunding RB, Improvement, Charleston Area Medical Center, Inc., Series A, 5.63%, 09/01/32	2,500	2,627,950
Wisconsin 1.0%		
Wisconsin Health & Educational Facilities Authority, Refunding RB, Froedtert & Community Health, Inc., Obligated Group: Series C, 5.25%, 04/01/19 ^(a)	6,100	6,392,251
Wyoming 1.3%		
County of Sweetwater Wyoming, Refunding RB, Idaho Power Co. Project, Remarketing, 5.25%, 07/15/26	4,500	4,765,455
State of Wyoming Municipal Power Agency, Inc., Refunding RB, Series A (BAM), 5.00%, 01/01/42	1,120	1,269,184

SCHEDULE OF INVESTMENTS

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Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i>	<i>Value</i>
	<i>(000)</i>	
Wyoming (continued)		
Wyoming Community Development Authority, Refunding RB, Series 2 & 3, 4.05%, 12/01/38 ^(d)	\$ 2,215	\$ 2,255,446
		8,290,085
Total Municipal Bonds 115.6% (Cost \$675,414,950)		717,958,477
Municipal Bonds Transferred to Tender Option Bond Trusts 43.5%		
Arizona 0.6%		
City of Phoenix Arizona Civic Improvement Corp., Refunding RB, Water System, Junior Lien, Series A, 5.00%, 07/01/19	3,500	3,684,905
California 6.2%		
Sacramento Area Flood Control Agency, Refunding, Consolidated Capital Assessment District No. 2, Series A, 5.00%, 10/01/47 ^(g)	14,998	17,339,825
University of California, RB, General, Series O:		
5.25%, 05/15/19	3,235	3,408,623
5.25%, 05/15/19	5,675	5,979,577
5.25%, 05/15/19	11,090	11,685,200
		38,413,225
District of Columbia 1.2%		
District of Columbia Water & Sewer Authority, Refunding RB, Senior Lien, Series A, 5.50%, 10/01/18	7,495	7,747,845
Florida^(g) 2.6%		
County of Miami-Dade Florida Water & Sewer System, (AGC), 5.00%, 10/01/39	14,747	15,862,327
Illinois 3.7%		
State of Illinois Finance Authority, RB, University of Chicago, Series B, 6.25%, 07/01/18	10,000	10,279,000
	<i>Par</i>	
<i>Security</i>	<i>(000)</i>	<i>Value</i>

Illinois (continued)

State of Illinois Toll Highway Authority, RB, Senior, Series B, 5.00%, 01/01/40 ^(g)	\$ 10,976	\$ 12,432,533
		22,711,533

Kentucky 1.6%

County of Louisville & Jefferson Kentucky Metropolitan Government Parking Authority, RB, River City, Inc., 1st Mortgage, Series A, 5.38%, 12/01/19	9,195	9,854,220
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Maryland^(g) 1.7%

City of Baltimore Maryland, RB, Wastewater Project, Sub-Series A, 5.00%, 07/01/46	4,898	5,638,494
State of Maryland Transportation Authority, RB, Transportation Facilities Project (AGM), 5.00%, 07/01/41	4,710	4,809,687
		10,448,181

Nevada 2.7%

County of Clark Nevada Water Reclamation District, GO, Limited Tax, Series B, 5.75%, 07/01/19	15,789	16,799,804
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New York 5.8%

City of New York New York Municipal Water Finance Authority, Refunding RB, Water & Sewer System, 2nd General Resolution, Series DD: 5.00%, 06/15/18	3,556	3,624,764
5.00%, 06/15/37 ^(g)	20,643	21,043,493
New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51 ^(h)	10,000	11,316,795
		35,985,052

North Carolina 0.8%

North Carolina Capital Facilities Finance Agency, Refunding RB, Wake Forest University, 5.00%, 01/01/19	5,000	5,179,250
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Ohio 2.1%

Ohio Higher Educational Facility Commission, RB, Cleveland Clinic Health, Series A, 5.25%, 01/01/18	4,400	4,406,182
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Schedule of Investments (unaudited) (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Security</i>	<i>Par</i> <i>(000)</i>	<i>Value</i>
Ohio (continued)		
State of Ohio, RB, Cleveland Clinic Health Obligated Group, Series B, 5.50%, 01/01/34 ^(g)	\$ 8,500	\$ 8,849,478
		13,255,660
Oregon^(g) 1.1%		
State of Oregon Housing & Community Services Department, HRB, M/F Housing, Series A, AMT, 4.95%, 07/01/30	6,477	6,683,537
Pennsylvania^(g) 0.7%		
County of Westmoreland Pennsylvania Municipal Authority, Refunding RB, (BAM), 5.00%, 08/15/38	3,925	4,502,526
Texas 7.2%		
City of Houston Texas, Refunding RB, Airport System, Senior Lien, Series A, 5.50%, 07/01/34 ^(g)	8,333	8,536,271
City of Houston Texas Higher Education Finance Corp., RB, Rice University Project, Series A, 5.00%, 05/15/20	10,000	10,769,382
County of Harris Texas Health Facilities Development Corp., Refunding RB, School Health Care System, Series B, 5.75%, 07/01/27	20,970	25,370,449
		44,676,102
Virginia 3.6%		
County of Fairfax Virginia EDA, RB, Metrorail Parking System, 5.00%, 04/01/47 ^(h)	6,960	8,087,694
Virginia Commonwealth Transportation Board, RB, Capital Projects, 5.00%, 05/15/21	7,999	8,816,700
	<i>Par</i>	
	<i>(000)/</i>	
<i>Security</i>	<i>Shares</i>	<i>Value</i>
Virginia (continued)		
Virginia Small Business Financing Authority, Refunding RB, Sentara Healthcare, 5.00%, 11/01/40 ^(g)	\$ 5,002	\$ 5,344,567
		22,248,961
Washington^(g) 1.9%		
Washington Health Care Facilities Authority, Refunding RB, Seattle Children's Hospital, Series B,	10,000	11,879,000

5.00%, 10/01/38

Total Municipal Bonds Transferred to Tender OptionBond Trusts	43.5%	
(Cost \$255,600,161)		269,932,128
Total Long-Term Investments	159.1% (Cost \$931,015,111)	987,890,605
Short-Term Securities		
BlackRock Liquidity Funds, MuniCash, Institutional Class, 1.33% ^{(i)(j)}		23,211,075
		23,218,039
Total Short-Term Securities	3.7%	23,218,039
Total Investments	162.8%	
(Cost \$954,233,150)		1,011,108,644
Liabilities in Excess of Other		
Assets (1.0)%		(5,860,851)
Liability for TOB Trust Certificates, Including Interest Expense and Fees Payable	(22.6)%	(140,235,810)
VMTP Shares, at Liquidation Value, Net of Deferred Offering Costs	(39.2)%	(243,800,000)
Net Assets Applicable to Common Shares	100.0%	\$ 621,211,983

- (a) U.S. Government securities, held in escrow, are used to pay interest on this security, as well as to retire the bond in full at the date indicated, typically at a premium to par.
- (b) Security exempt from registration pursuant to Rule 144A under the Securities Act of 1933, as amended. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (c) Zero-coupon bond.
- (d) When-issued security.
- (e) Variable rate security. Security may be issued at a fixed coupon rate, which converts to a variable rate at a specified date. Rate shown is the rate in effect as of period end.
- (f) Security is collateralized by municipal bonds or U.S. Treasury obligations.
- (g) Represent bonds transferred to a TOB Trust in exchange of cash and residual certificates received by the Trust. These bonds serve as collateral in a secured borrowing.
- (h) All or a portion of security is subject to a recourse agreement. The aggregate maximum potential amount the Trust could ultimately be required to pay under the agreement(s), which expire between November 15, 2019 to October 1, 2024, is 8,954,336.
- (i) Annualized 7-day yield as of period end.
- (j) During the period ended November 30, 2017, investments in issuers considered to be an affiliate of the Trust for purposes of Section 2(a)(3) of the Investment Company Act of 1940, as amended, were as follows:

Schedule of Investments (continued)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)

<i>Affiliate</i>	<i>Shares Held at 08/31/17</i>	<i>Net Activity</i>	<i>Shares Held at 11/30/17</i>	<i>Value at 11/30/17</i>	<i>Income</i>	<i>Realized Gain (Loss)</i>	<i>Change in Net Unrealized Appreciation (Depreciation)</i>
BlackRock Liquidity Funds, MuniCash, Institutional Class		23,211,075	23,211,075	\$ 23,218,039	\$ 29,666	\$ (77)	\$

(a) Includes net capital gain distributions, if applicable.

Derivative Financial Instruments Outstanding as of Period End**Futures Contracts**

<i>Description</i>	<i>Number of Contracts</i>	<i>Expiration Date</i>	<i>Notional Amount (000)</i>	<i>Value / Unrealized Appreciation (Depreciation)</i>
Short Contracts				
5-Year U.S. Treasury Note	65	03/29/18	\$ 7,562	\$ 28,720
10-Year U.S. Treasury Note	51	03/20/18	6,326	45,580
Long U.S. Treasury Bond	85	03/20/18	12,896	135,229
Total				\$ 209,529

Portfolio Abbreviations

AGC	Assured Guarantee Corp.
AGM	Assured Guaranty Municipal Corp.
AMBAC	American Municipal Bond Assurance Corp.
AMT	Alternative Minimum Tax (subject to)
ARB	Airport Revenue Bonds
BAM	Build America Mutual Assurance Co.
CAB	Capital Appreciation Bonds
EDA	Economic Development Authority
ERB	Education Revenue Bonds
GARB	General Airport Revenue Bonds
GO	General Obligation Bonds

HFA	Housing Finance Agency
HRB	Housing Revenue Bonds
IDA	Industrial Development Authority
IDB	Industrial Development Board
LRB	Lease Revenue Bonds
NPFGC	National Public Finance Guarantee Corp.
RB	Revenue Bonds

Schedule of Investments (concluded)

BlackRock MuniVest Fund, Inc. (MVF)

November 30, 2017

(Percentages shown are based on Net Assets)**Fair Value Hierarchy as of Period End**

Various inputs are used in determining the fair value of investments and derivative financial instruments. These inputs to valuation techniques are categorized into a fair value hierarchy consisting of three broad levels for financial reporting purposes as follows:

Level 1 unadjusted price quotations in active markets/exchanges for identical assets or liabilities that the Trust has the ability to access

Level 2 other observable inputs (including, but not limited to, quoted prices for similar assets or liabilities in markets that are active, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the assets or liabilities (such as interest rates, yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates) or other market corroborated inputs)

Level 3 unobservable inputs based on the best information available in the circumstances, to the extent observable inputs are not available (including the Trust's own assumptions used in determining the fair value of investments and derivative financial instruments)

The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Accordingly, the degree of judgment exercised in determining fair value is greatest for instruments categorized in Level 3. The inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the fair value hierarchy classification is determined based on the lowest level input that is significant to the fair value measurement in its entirety. Investments classified within Level 3 have significant unobservable inputs used by the BlackRock Global Valuation Methodologies Committee (the Global Valuation Committee) in determining the price for Fair Valued Investments. Level 3 investments include equity or debt issued by privately held companies or funds. There may not be a secondary market, and/or there are a limited number of investors. Level 3 investments may also be adjusted to reflect illiquidity and/or non-transferability, with the amount of such discount estimated by the Global Valuation Committee in the absence of market information.

Changes in valuation techniques may result in transfers into or out of an assigned level within the hierarchy. In accordance with the Trust's policy, transfers between different levels of the fair value hierarchy are deemed to have occurred as of the beginning of the reporting period. The categorization of a value determined for investments and derivative financial instruments is based on the pricing transparency of the investments and derivative financial instruments and is not necessarily an indication of the risks associated with investing in those securities. For information about the Trust's policy regarding valuation of investments and derivative financial instruments, refer to the Trust's most recent financial statements as contained in its annual report.

The following tables summarize the Trust's investments and derivative financial instruments categorized in the disclosure hierarchy:

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	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Total</i>
Assets:				
Investments:				
Long-Term Investments ^(a)	\$	\$ 987,890,605	\$	\$ 987,890,605
Short-Term Securities	23,218,039			23,218,039
Total	\$ 23,218,039	\$ 987,890,605	\$	\$ 1,011,108,644
Derivative Financial Instruments ^(b)				
Assets:				
Interest rate contracts	\$ 209,529	\$	\$	\$ 209,529

^a See above Schedule of Investments for values in each state or political sub-division.

^b Derivative financial instruments are futures contracts, which are valued at the unrealized appreciation (depreciation) on the instrument.

The Trust may hold assets and/or liabilities in which the fair value approximates the carrying for financial reporting purposes. As of period end, such assets and/or liabilities are categorized within the disclosure hierarchy as follows:

	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Total</i>
Liabilities:				
TOB Trust Certificates	\$	\$ (139,989,200)	\$	\$ (139,989,200)
VMTP Shares at Liquidation Value		(243,800,000)		(243,800,000)
Total	\$	\$ (383,789,200)	\$	\$ (383,789,200)

During the period ended November 30, 2017, there were no transfers between levels.

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 22, 2018

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 22, 2018

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

Date: January 22, 2018