

BLACKROCK MUNIVEST FUND INC
Form N-Q
January 26, 2011
UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT COMPANY

Investment Company Act file number 811-05611

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

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: Anne F. Ackerley, 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: 08/31/2011

Date of reporting period: 11/30/2010

Item 1 Schedule of Investments

Schedule of Investments November 30, 2010 (Unaudited)

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

| Municipal Bonds | Par (000) | Value |
|---|----------------------|-------------------|
| Alabama 2.6% | | |
| Camden IDB Alabama, RB, Weyerhaeuser Co. Project, Series A, 6.13%, 12/01/13 (a) | \$ 2,550 | \$ 2,931,786 |
| Prattville IDB Alabama, RB, International Paper Co. Project, Series A, AMT, 4.75%, 12/01/30 | 6,500 | 5,574,400 |
| Selma IDB Alabama, Refunding RB, International Paper Co. Project, Series B, 5.50%, 5/01/20 | 5,000 | 5,061,800 |
| Selma IDB, RB, Gulf Opportunity Zone, International Paper, 5.80%, 5/01/34 | 1,850 | 1,876,695 |
| | | <u>15,444,681</u> |
| Arizona 3.2% | | |
| Maricopa County IDA Arizona, RB, Arizona Charter Schools Project, Series A, 6.75%, 7/01/29 | 4,100 | 2,791,772 |
| Maricopa County Pollution Control Corp., Refunding RB, Southern California Edison Co., Series A, 5.00%, 6/01/35 | 3,400 | 3,324,826 |
| Phoenix Civic Improvement Corp., RB, Junior Lien, Series A, 5.00%, 7/01/40 | 2,000 | 1,939,820 |
| Pima County IDA, RB, Arizona Charter Schools Project, Series E, 7.25%, 7/01/31 | 2,005 | 2,013,261 |
| Pima County IDA, Refunding RB: Arizona Charter Schools Project, Series I, 6.10%, 7/01/13 (a)(b) | 110 | 123,443 |
| Arizona Charter Schools Project, Series I, 6.30%, 7/01/13 (a)(b) | 230 | 259,274 |
| Arizona Charter Schools Project, Series O, 5.00%, 7/01/26 | 1,470 | 1,215,558 |
| Arizona Charter Schools, Series I, 6.10%, 7/01/24 (b) | 380 | 355,984 |
| Arizona Charter Schools, Series I, 6.30%, 7/01/31 (b) | 755 | 688,281 |
| Charter Schools II, Series A, 6.75%, 7/01/21 | 920 | 921,049 |
| Salt Verde Financial Corp., RB, Senior, 5.00%, 12/01/37 | 5,000 | 4,420,450 |
| | | |
| Municipal Bonds | | |
| | Par (000) | Value |
| Arizona (concluded) | | |
| State of Arizona, COP, Department of Administration, Series A (AGM), | \$ 650 | \$ 661,914 |

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5.25%, 10/01/28

18,715,632

California 10.4%

| | | |
|--|--------|------------|
| California HFA, RB, Home Mortgage, Series K, AMT, 5.50%, 2/01/42 | 3,730 | 3,792,440 |
| California Health Facilities Financing Authority, Refunding RB, Series A: Catholic Healthcare West, 6.00%, 7/01/34 | 1,055 | 1,102,401 |
| St. Joseph Health System, 5.75%, 7/01/39 | 5,000 | 5,149,850 |
| California State Public Works Board, RB: Department of Corrections, Series C, 5.50%, 6/01/22 | 5,000 | 5,122,450 |
| Department of Corrections, Series C, 5.50%, 6/01/23 | 6,000 | 6,113,640 |
| Department of Mental Health, Coalinga, Series A, 5.13%, 6/01/29 | 10,435 | 9,926,085 |
| California Statewide Communities Development Authority, RB, Health Facility, Memorial Health Services, Series A, 6.00%, 10/01/23 | 5,240 | 5,468,831 |
| Golden State Tobacco Securitization Corp. California, RB, Asset-Backed, Series A-3, 7.88%, 6/01/13 (a) | 10,725 | 12,513,608 |
| Los Angeles Department of Airports, RB, Series A, 5.25%, 5/15/39 | 1,200 | 1,211,388 |
| State of California, GO, Various Purpose, 6.50%, 4/01/33 | 9,700 | 10,702,010 |
| | | 61,102,703 |

Colorado 1.1%

| | | |
|--|-------|-----------|
| Colorado Health Facilities Authority, RB, Catholic Health Initiatives, Series D, 6.25%, 10/01/33 | 2,500 | 2,717,575 |
| Colorado Health Facilities Authority, Refunding RB, Evangelical Lutheran, Series A, 5.25%, 6/01/34 | 3,000 | 2,852,430 |

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 |
| ARS | Auction Rate Securities |
| CAB | Capital Appreciation Bonds |
| COP | Certificates of Participation |
| EDA | Economic Development Authority |

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| | |
|-------|---|
| FHA | Federal Housing Administration |
| 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 |
| S/F | Single-Family |

BLACKROCK MUNIVEST FUND, INC.

NOVEMBER 30, 2010

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Schedule of Investments (continued)

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

| Municipal Bonds | Par (000) | Value |
|--|--------------|------------|
| Colorado (concluded) | | |
| Colorado Housing & Finance Authority, Refunding RB, S/F Program, Senior Series A-2, AMT: | | |
| 6.60%, 5/01/28 | \$ 355 | \$ 363,162 |
| 7.50%, 4/01/31 | 130 | 136,448 |
| Regional Transportation District, COP, Series A, 5.38%, 6/01/31 (c) | 385 | 385,708 |
| | | 6,455,323 |
| Connecticut 0.4% | | |
| Mohegan Tribe of Indians of Connecticut, RB, Public Improvement, Priority Distribution, 6.25%, 1/01/31 | 2,810 | 2,266,321 |
| District of Columbia 0.2% | | |
| Metropolitan Washington Airports Authority, RB, First Senior Lien, Series A: | | |
| 5.00%, 10/01/39 | 415 | 417,328 |
| 5.25%, 10/01/44 | 650 | 663,306 |
| | | 1,080,634 |
| Florida 6.5% | | |
| County of Miami-Dade Florida, GO, Building Better Communities Program: | | |
| Series B, 6.38%, 7/01/28 | 4,630 | 5,196,712 |
| Series B-1, 5.63%, 7/01/38 | 5,000 | 5,223,900 |
| County of Miami-Dade Florida, Refunding RB, Miami International Airport: | | |
| AMT (AGC), 5.00%, 10/01/40 | 10,000 | 9,297,900 |
| Series A-1, 5.38%, 10/01/41 | 10,290 | 10,357,194 |
| Hillsborough County IDA, RB, H. Lee Moffitt Cancer Center Project, Series A, 5.25%, 7/01/37 | 5,500 | 5,155,810 |
| Miami-Dade County IDA, RB, Waste Management Inc. Project, Series 1, Mandatory Put Bonds, AMT, 7.00%, 12/01/18 (d) | 3,200 | 3,200,000 |
| | | 38,431,516 |
| Georgia 2.9% | | |

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| | | |
|--|-------|------------|
| DeKalb County Hospital Authority Georgia, RB, DeKalb Medical Center Inc. Project, 6.13%, 9/01/40 | 3,570 | 3,589,100 |
| DeKalb Private Hospital Authority, Refunding RB, Children s Healthcare, 5.25%, 11/15/39 | 3,335 | 3,387,326 |
| Monroe County Development Authority Georgia, Refunding RB, Oglethorpe Power Corp.-Scherer, Series A, 6.80%, 1/01/11 | 4,785 | 4,805,336 |
| Municipal Electric Authority of Georgia, RB, Series W: 6.60%, 1/01/18 | 4,565 | 5,310,373 |
| 6.60%, 1/01/18 (e) | 250 | 282,533 |
| | | 17,374,668 |

Hawaii 0.9%

| | | |
|--|-------|-----------|
| State of Hawaii, Refunding RB, Series A, 5.25%, 7/01/35 | 5,000 | 5,021,900 |
|--|-------|-----------|

| Municipal Bonds | Par (000) | Value |
|-----------------|--------------|-------|
|-----------------|--------------|-------|

Idaho 0.00%

| | | |
|---|-------|-----------|
| Idaho Housing & Finance Association, Refunding RB, S/F Mortgage, Senior Series E-2, AMT, 6.90%, 1/01/27 | \$ 90 | \$ 90,153 |
|---|-------|-----------|

Illinois 11.7%

| | | |
|---|--------|------------|
| Chicago Park District, GO, Harbor Facilities, Series C, 5.25%, 1/01/40 | 4,675 | 4,692,952 |
| City of Chicago Illinois, ARB, General, Third Lien, Series B-2, AMT (NPFGC), 6.00%, 1/01/27 | 17,080 | 17,660,549 |
| Illinois Finance Authority, RB: Advocate Health Care Network, Series D, 6.50%, 11/01/38 | 9,700 | 10,581,827 |
| Community Rehabilitation Providers Facilities, Series A, 6.50%, 7/01/22 | 2,140 | 2,062,404 |
| Illinois Finance Authority, Refunding RB, Series A: Northwestern Memorial Hospital, 6.00%, 8/15/39 | 9,000 | 9,667,800 |
| OSF Healthcare System, 6.00%, 5/15/39 | 5,200 | 5,199,844 |
| Regional Transportation Authority, RB: Series A (AMBAC), 7.20%, 11/01/20 | 3,290 | 4,055,089 |
| Series C (NPFGC), 7.75%, 6/01/20 | 4,000 | 5,106,720 |
| Village of Hodgkins Illinois, RB, MBM Project, AMT, 6.00%, 11/01/23 | 10,000 | 10,004,300 |
| | | 69,031,485 |

Indiana 5.2%

| | | |
|---|-------|-----------|
| Indiana Health & Educational Facilities Financing Authority, RB, Clarian | 8,980 | 8,642,082 |
|---|-------|-----------|

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| | | |
|---|--------|------------|
| Health Obligation, Series A, 5.25%, 2/15/40 | | |
| Indiana Transportation Finance Authority, RB, Series A, 6.80%, 12/01/16 | 7,280 | 8,226,400 |
| Indianapolis Local Public Improvement Bond Bank, Refunding RB, Series D, 6.75%, 2/01/14 | 12,875 | 13,835,604 |
| | | <hr/> |
| | | 30,704,086 |

Kansas 0.3%

| | | |
|--|-------|-----------|
| Sedgwick & Shawnee Counties Kansas, RB, Mortgage-Backed Securities Program, Series A-4, AMT (Ginnie Mae), 5.95%, 12/01/33 | 1,885 | 1,966,244 |
|--|-------|-----------|

Kentucky 0.5%

| | | |
|---|-------|-----------|
| County of Owen Kentucky, RB, Kentucky American Water Co., Series B, 5.63%, 9/01/39 | 1,000 | 1,009,190 |
| Kentucky Economic Development Finance Authority, Refunding RB, Owensboro Medical Health System, Series A, 6.38%, 6/01/40 | 2,000 | 2,037,780 |
| | | <hr/> |
| | | 3,046,970 |

Louisiana 0.5%

| | | |
|---|-------|-----------|
| Louisiana Local Government Environmental Facilities & Community Development Authority, RB, Westlake Chemical Corp., Series A-1, 6.50%, 11/01/35 (c) | 2,615 | 2,662,436 |
|---|-------|-----------|

Schedule of Investments (continued)

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

| Municipal Bonds | Par (000) | Value |
|--|--------------|------------------|
| Maine 1.2% | | |
| Maine Health & Higher Educational Facilities Authority, RB, Series A, 5.00%, 7/01/39 | \$ 5,000 | \$ 5,006,700 |
| Portland New Public Housing Authority Maine, Refunding RB, Senior Living, Series A: 5.70%, 8/01/21 | 775 | 778,023 |
| 6.00%, 2/01/34 | 1,190 | 1,141,091 |
| | | <u>6,925,814</u> |
| Maryland 1.5% | | |
| Maryland Community Development Administration, RB, AMT, 5.10%, 9/01/37 | 1,835 | 1,821,604 |
| Maryland Community Development Administration, Refunding RB, Residential, Series D, AMT, 4.90%, 9/01/42 | 3,250 | 3,115,060 |
| Maryland Health & Higher Educational Facilities Authority, Refunding RB, University of Maryland Medical System: 5.00%, 7/01/34 | 2,100 | 2,082,675 |
| 5.13%, 7/01/39 | 2,100 | 2,110,773 |
| | | <u>9,130,112</u> |
| Massachusetts 6.6% | | |
| Boston Water & Sewer Commission, RB, 9.25%, 1/01/11 (e) | 985 | 992,092 |
| Massachusetts Bay Transportation Authority, Refunding RB, General Transportation System, Series A, 7.00%, 3/01/19 | 3,010 | 3,712,925 |
| Massachusetts HFA, HRB, Series A, AMT, 5.20%, 12/01/37 | 3,000 | 2,890,500 |
| Massachusetts HFA, RB, S/F, Series 130, AMT, 5.00%, 12/01/32 | 2,500 | 2,412,700 |
| Massachusetts HFA, Refunding HRB, Series D, AMT, 4.85%, 6/01/40 | 3,000 | 2,787,480 |
| Massachusetts HFA, Refunding RB, Series C, AMT, 5.35%, 12/01/42 | 6,550 | 6,288,721 |
| Massachusetts Water Resources Authority, RB, Series A, 6.50%, 7/15/19 (e) | 16,000 | 19,597,760 |

38,682,178

Michigan 4.9%City of Detroit Michigan, RB, Second
Lien, Series B (AGM):

6.25%, 7/01/36 2,500 2,688,750

7.00%, 7/01/36 1,250 1,415,263

Michigan State Hospital Finance
Authority, Refunding RB:Henry Ford Health System, Series A,
5.25%, 11/15/46

7,950 7,072,479

Hospital, Sinai Hospital, 6.70%,
1/01/26

1,000 970,430

McLaren Health Care, 5.75%,
5/15/38

7,285 7,480,092

Trinity Health Credit, Series A,
6.00%, 12/01/20

4,200 4,242,672

Municipal Bonds**Par
(000)****Value****Michigan (concluded)**Royal Oak Hospital Finance Authority
Michigan, Refunding RB, William
Beaumont Hospital, 8.25%, 9/01/39

\$ 4,100 \$ 4,797,697

28,667,383

Mississippi 5.4%County of Lowndes Mississippi,
Refunding RB, Weyerhaeuser Co.

Project:

Series A, 6.80%, 4/01/22 9,160 10,016,002

Series B, 6.70%, 4/01/22 4,500 4,883,265

Mississippi Business Finance Corp.,
Refunding RB, System Energy

Resource Inc. Project:

5.88%, 4/01/22 15,000 14,927,550

5.90%, 5/01/22 2,250 2,239,177

32,065,994

Nevada 0.9%County of Clark Nevada, RB, Series B,
5.75%, 7/01/42

5,000 5,204,200

New Hampshire 0.4%New Hampshire Health & Education
Facilities Authority, Refunding RB,Elliot Hospital, Series B, 5.60%,
10/01/22

2,400 2,453,304

New Jersey 5.8%Delaware River Port Authority, RB,
Series D, 5.00%, 1/01/40

195 196,693

New Jersey EDA, RB, Cigarette Tax:
5.50%, 6/15/24

9,080 8,793,526

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| | | |
|--|--------|------------|
| 5.75%, 6/15/29 | 2,885 | 2,752,174 |
| 5.75%, 6/15/34 | 3,695 | 3,464,395 |
| New Jersey EDA, Refunding RB, School Facilities Construction, Series AA, 5.25%, 12/15/33 | 10,000 | 10,469,000 |
| New Jersey State Housing & Mortgage Finance Agency, RB, Series AA, 6.38%, 10/01/28 | 1,450 | 1,552,979 |
| Tobacco Settlement Financing Corp. New Jersey, RB, 7.00%, 6/01/13 (a) | 5,980 | 6,897,990 |
| | | <hr/> |
| | | 34,126,757 |

New York 3.5%

| | | |
|---|--------|------------|
| Metropolitan Transportation Authority, RB, Series 2008C: | | |
| 6.25%, 11/15/23 | 3,245 | 3,692,648 |
| 6.50%, 11/15/28 | 14,925 | 16,860,324 |
| | | <hr/> |
| | | 20,552,972 |

North Carolina 1.4%

| | | |
|---|-------|-----------|
| City of Charlotte North Carolina, Refunding RB, Series A, 5.50%, 7/01/34 | 800 | 833,224 |
| 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 | 3,213,435 |

Schedule of Investments (continued)

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

| Municipal Bonds | Par (000) | Value |
|--|--------------|-------------------|
| North Carolina (concluded) | | |
| North Carolina Medical Care Commission, RB, Novant Health Obligation, Series A, 4.75%, 11/01/43 | \$ 5,000 | \$ 4,444,700 |
| | | <u>8,491,359</u> |
| Ohio 2.0% | | |
| County of Butler Ohio, RB, UC Health, 5.50%, 11/01/40 | 4,000 | 3,712,840 |
| Ohio Higher Educational Facility Commission, Refunding RB, Kenyon College Project, 5.25%, 7/01/44 | 8,000 | 8,120,000 |
| | | <u>11,832,840</u> |
| Pennsylvania 2.4% | | |
| Chester County IDA, RB, Aqua Pennsylvania Inc. Project, Series A, AMT (NPFGC), 5.00%, 2/01/40 | 530 | 510,290 |
| Lycoming County Authority, Refunding RB, Susquehanna Health System Project, Series A, 5.75%, 7/01/39 | 3,950 | 3,995,109 |
| Pennsylvania Economic Development Financing Authority, Refunding RB, Aqua Pennsylvania Inc. Project, Series A, AMT, 5.00%, 12/01/34 | 2,780 | 2,707,970 |
| Pennsylvania Higher Educational Facilities Authority, Refunding RB, Saint Joseph's University, Series A, 5.00%, 11/01/40 | 4,500 | 4,431,150 |
| Philadelphia Authority for Industrial Development, RB: Arbor House Inc. Project, Series E, 6.10%, 7/01/33 | 1,000 | 954,040 |
| Rieder House Project, Series A, 6.10%, 7/01/33 | 1,355 | 1,292,724 |
| | | <u>13,891,283</u> |
| Puerto Rico 2.8% | | |
| Puerto Rico Sales Tax Financing Corp., RB, First Sub-Series A, 6.38%, 8/01/39 | 13,000 | 14,082,250 |
| Puerto Rico Sales Tax Financing Corp., Refunding RB, CAB, Series A (NPFGC), | 15,000 | 2,163,000 |

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5.70%, 8/01/41 (f)

16,245,250

South Carolina 1.0%

| | | |
|---|-------|-----------|
| County of Georgetown South Carolina, Refunding RB, International Paper Co. Project, Series A, AMT, 5.55%, 12/01/29 | 1,000 | 957,030 |
| County of Richland South Carolina, Refunding RB, International Paper Co. Project, AMT, 6.10%, 4/01/23 | 5,000 | 5,062,550 |
| | | 6,019,580 |

Texas 12.7%

| | | |
|--|--------|------------|
| Brazos River Authority, Refunding RB, Texas Utility Co., Series, AMT, 7.70%, 4/01/33 | 3,055 | 1,130,350 |
| Brazos River Harbor Navigation District, Refunding RB, Dow Chemical Co. Project, Series A7, AMT, 6.63%, 5/15/33 | 11,460 | 11,665,478 |

| Municipal Bonds | Par (000) | Value |
|-----------------|--------------|-------|
|-----------------|--------------|-------|

Texas (concluded)

| | | |
|--|----------|--------------|
| City of Houston Texas, RB, Senior Lien, Series A, 5.50%, 7/01/34 | \$ 8,335 | \$ 8,739,748 |
| Gulf Coast Waste Disposal Authority, Refunding RB, Series A, AMT, 6.10%, 8/01/24 | 4,000 | 4,026,000 |
| Harris County Health Facilities Development Corp., Refunding RB, Memorial Hermann Healthcare System, Series B: 7.13%, 12/01/31 | 3,500 | 3,921,925 |
| 7.25%, 12/01/35 | 5,400 | 6,034,770 |
| Houston Industrial Development Corp., RB, Senior, Air Cargo, AMT, 6.38%, 1/01/23 | 1,790 | 1,700,321 |
| La Vernia Higher Education Finance Corp., RB, KIPP Inc., 6.25%, 8/15/39 | 925 | 922,438 |
| Love Field Airport Modernization Corp., RB, Southwest Airlines Co. Project, 5.25%, 11/01/40 | 3,600 | 3,334,536 |
| Matagorda County Navigation District No. 1 Texas, Refunding RB, CenterPoint Energy Project, 5.60%, 3/01/27 (d) | 9,355 | 9,063,217 |
| North Texas Tollway Authority, Refunding RB, First Tier, Series A, 6.25%, 1/01/39 | 3,500 | 3,636,885 |
| Tarrant County Cultural Education Facilities Finance Corp., RB, Scott & White Healthcare, 6.00%, 8/15/45 | 5,000 | 5,197,050 |
| Texas Private Activity Bond Surface Transportation Corp., RB, Senior Lien: | | |

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| | | |
|---|--------|------------|
| LBJ Infrastructure Group LLC, LBJ Freeway Managed Lanes Project, 7.00%, 6/30/40 | 10,000 | 10,325,100 |
| NTE Mobility Partners LLC, North Tarrant Express Managed Lanes Project, 6.88%, 12/31/39 | 4,710 | 4,835,898 |
| | | 74,533,716 |
| U.S. Virgin Islands 1.4% | | |
| United States Virgin Islands, Refunding RB, Senior Secured, Hovensa Coker Project, AMT, 6.50%, 7/01/21 | 8,000 | 8,065,120 |
| Vermont 0.2% | | |
| Vermont Educational & Health Buildings Financing Agency, RB, Developmental & Mental Health, Series A, 6.38%, 6/15/22 | 1,000 | 960,180 |
| Virginia 3.1% | | |
| Chesterfield County IDA, Refunding RB, Virginia Electric & Power Co., Series A, 5.88%, 6/01/17 | 1,425 | 1,456,891 |
| City of Norfolk Virginia, Refunding RB, Series B (AMBAC), 5.50%, 2/01/31 | 4,225 | 4,065,337 |
| City of Portsmouth Virginia, GO, Refunding, Series D, 5.00%, 7/15/34 (c) | 3,105 | 3,190,822 |
| County of Spotsylvania Virginia, RB (AGM), 5.00%, 6/01/37 | 75 | 76,796 |

Schedule of Investments (continued)

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

| Municipal Bonds | Par (000) | Value |
|--|--------------|-------------------|
| Virginia (concluded) | | |
| Fairfax County EDA, Refunding RB, Goodwin House Inc.: | | |
| 5.13%, 10/01/37 | \$ 2,000 | \$ 1,817,260 |
| 5.13%, 10/01/42 | 7,015 | 6,265,237 |
| Virginia HDA, Refunding RB, Sub-Series A3, AMT, 5.05%, 7/01/26 | 1,325 | 1,344,584 |
| | | <u>18,216,927</u> |
| Washington 4.7% | | |
| Energy Northwest, Refunding RB, Series B, 7.13%, 7/01/16 | 14,320 | 18,102,485 |
| Seattle Housing Authority Washington, HRB, Replacement Housing Projects, 6.13%, 12/01/32 | 2,230 | 2,078,672 |
| Washington Health Care Facilities Authority, Refunding RB, Catholic Health Initiatives, Series D, 6.38%, 10/01/36 | 7,000 | 7,565,320 |
| | | <u>27,746,477</u> |
| West Virginia 0.4% | | |
| West Virginia Hospital Finance Authority, Refunding RB, Charleston, Series A, 5.63%, 9/01/32 | 2,500 | 2,547,325 |
| Wisconsin 1.8% | | |
| City of Milwaukee Wisconsin, RB, Senior, Air Cargo, AMT, 6.50%, 1/01/25 | 1,605 | 1,537,879 |
| Wisconsin Health & Educational Facilities Authority, MRB, Hudson Memorial Hospital (FHA), 5.70%, 1/15/29 | 4,500 | 4,555,620 |
| Wisconsin Health & Educational Facilities Authority, RB, SynergyHealth Inc., 6.00%, 11/15/32 | 3,040 | 3,101,134 |
| Wisconsin Housing & EDA, Refunding RB, Series A, AMT, 5.63%, 3/01/31 | 1,350 | 1,350,176 |
| | | <u>10,544,809</u> |
| Wyoming 0.8% | | |
| County of Sweetwater Wyoming, Refunding RB, Idaho Power Co. | 4,500 | 4,721,130 |

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Project, 5.25%, 7/15/26

Total Municipal Bonds 111.3% 655,019,462

**Municipal Bonds Transferred to Tender
Option Bond Trusts (g)**

Arizona 0.6%

| | | |
|---|-------|-----------|
| Phoenix Civic Improvement Corp., RB, Junior Lien, Series A, 5.00%, 7/01/34 | 3,500 | 3,636,010 |
|---|-------|-----------|

California 5.3%

| | | |
|---|--------|------------|
| Los Angeles Community College District California, GO, Election of 2008, Series A, 6.00%, 8/01/33 | 9,586 | 10,478,192 |
| University of California, RB, Series O, 5.25%, 5/15/39 | 20,000 | 20,689,400 |

31,167,592

**Municipal Bonds Transferred to Tender
Option Bond Trusts (g)**

**Par
(000)**

Value

Connecticut 2.1%

| | | |
|--|-----------|---------------|
| Connecticut State Health & Educational Facility Authority, RB, Yale University, Series Z-3, 5.05%, 7/01/42 | \$ 12,000 | \$ 12,518,040 |
|--|-----------|---------------|

District of Columbia 1.3%

| | | |
|---|-------|-----------|
| District of Columbia Water & Sewer Authority, RB, Series A, 5.50%, 10/01/39 | 7,495 | 7,878,645 |
|---|-------|-----------|

Florida 4.0%

| | | |
|---|--------|------------|
| County of Miami-Dade Florida, RB, Water & Sewer System (AGM), 5.00%, 10/01/39 | 14,747 | 14,825,549 |
| Miami-Dade County Expressway Authority, RB, Series A (AGC), 5.00%, 7/01/35 | 8,900 | 8,751,192 |

23,576,741

Illinois 3.4%

| | | |
|--|--------|------------|
| City of Chicago Illinois, Refunding RB, Second Lien (AGM), 5.25%, 11/01/33 | 1,330 | 1,377,427 |
| Illinois Finance Authority, RB, University of Chicago, Series B, 6.25%, 7/01/38 | 10,000 | 11,305,700 |
| Illinois State Toll Highway Authority, RB, Series B, 5.50%, 1/01/33 | 6,999 | 7,345,566 |

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20,028,693

Kentucky 6.8%

| | | |
|--|-------|------------|
| Kentucky Economic Development Finance Authority, Refunding RB, St. Elizabeth, Series A, 5.50%, 5/01/39 | 8,003 | 8,225,050 |
| Kentucky Housing Corp., Refunding RB, Series L, AMT, 5.25%, 1/01/38 | 7,220 | 7,324,690 |
| Lexington-Fayette Urban County Airport Board, Refunding RB, Series A, 5.00%, 7/01/27 | 7,001 | 7,334,795 |
| Louisville & Jefferson County Metropolitan Government Parking Authority, RB, Series A, 5.38%, 12/01/39 | 9,195 | 9,435,817 |
| Louisville & Jefferson County Metropolitan Sewer District, RB, Series A (AGC), 4.25%, 5/15/38 | 8,003 | 7,450,462 |
| | | 39,770,814 |

Maryland 0.8%

| | | |
|--|-------|-----------|
| Maryland State Transportation Authority, RB, Transportation Facility Project (AGM), 5.00%, 7/01/41 | 4,710 | 4,859,778 |
|--|-------|-----------|

Nevada 2.9%

| | | |
|---|--------|------------|
| Clark County Water Reclamation District, GO, Series B, 5.75%, 7/01/34 | 15,789 | 17,100,120 |
|---|--------|------------|

New York 5.0%

| | | |
|--|--------|------------|
| New York City Municipal Water Finance Authority, RB: | | |
| Series DD, 5.00%, 6/15/37 | 24,199 | 24,716,325 |
| Series FF-2, 5.50%, 6/15/40 | 4,154 | 4,451,802 |
| | | 29,168,127 |

BLACKROCK MUNIVEST FUND, INC.

NOVEMBER 30, 2010

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Schedule of Investments (continued)

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

| Municipal Bonds Transferred to Tender Option Bond Trusts (g) | Par (000) | Value |
|---|--------------|-------------------|
| North Carolina 3.1% | | |
| North Carolina Capital Facilities Finance Agency, Refunding RB: Duke University Project, Series A, 5.00%, 10/01/41 | \$ 12,678 | \$ 12,941,050 |
| Wake Forest University, 5.00%, 1/01/38 | 5,000 | 5,103,100 |
| | | <u>18,044,150</u> |
| Ohio 3.7% | | |
| County of Allen Ohio, Refunding RB, Catholic Healthcare, Series A, 5.25%, 6/01/38 | 2,870 | 2,893,505 |
| County of Montgomery Ohio, Refunding RB, Catholic Healthcare, Series A, 5.50%, 5/01/34 | 5,470 | 5,728,567 |
| Ohio Higher Educational Facility Commission, Refunding RB, Hospital, Cleveland Clinic Health, Series A, 5.25%, 1/01/33 | 4,400 | 4,512,244 |
| State of Ohio, RB, Cleveland Clinic Health, Series B, 5.50%, 1/01/34 | 8,500 | 8,888,705 |
| | | <u>22,023,021</u> |
| Oregon 2.2% | | |
| Oregon State Housing & Community Services Department, HRB, Series A, AMT, 4.95%, 7/01/30 | 13,000 | 12,791,311 |
| South Carolina 0.6% | | |
| South Carolina State Housing Finance & Development Authority, Refunding RB, Series B-1, 5.55%, 7/01/39 | 3,259 | 3,342,977 |
| Texas 8.2% | | |
| Harris County Health Facilities Development Corp., Refunding RB, School Health Care System, Series B, 5.75%, 7/01/27 (e) | 20,970 | 25,091,234 |
| Houston Higher Education Finance Corp., RB, Rice University Project, Series A, 5.00%, 5/15/40 | 10,000 | 10,303,783 |
| Texas Department of Housing & Community Affairs, MRB, Series B, AMT (Ginnie Mae), 5.25%, 9/01/32 | 6,999 | 7,027,559 |

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| | | |
|---|-------|-------------------|
| Texas State University Systems, Refunding RB (AGM), 5.00%, 3/15/30 | 5,667 | 5,787,741 |
| | | <u>48,210,317</u> |

Virginia 1.2%

| | | |
|---|-------|------------------|
| Fairfax County IDA Virginia, Refunding RB, Health Care, Inova Health System, Series A, 5.50%, 5/15/35 | 2,099 | 2,208,614 |
| Virginia Small Business Financing Authority, Refunding RB, Sentara Healthcare, 5.00%, 11/01/40 | 5,002 | 5,080,296 |
| | | <u>7,288,910</u> |

Washington 4.4%

| | | |
|---|--------|------------|
| Central Puget Sound Regional Transit Authority, RB, Series A: 5.00%, 11/01/36 | 5,500 | 5,614,207 |
| (AGM), 5.00%, 11/01/32 | 14,007 | 14,436,025 |

**Municipal Bonds Transferred to Tender
Option Bond Trusts (g)**

| | Par (000) | Value |
|--|----------------------|-------------------|
| Washington (concluded) | | |
| Central Puget Sound Regional Transportation Authority, Washington, RB, Series A, 5.00%, 11/01/34 | \$ 5,500 | \$ 5,614,208 |
| | | <u>25,664,440</u> |

Wisconsin 1.0%

| | | |
|---|-------|-----------|
| Wisconsin Health & Educational Facilities Authority, Refunding RB, Froedtert & Community Health Inc., 5.25%, 4/01/39 | 6,099 | 6,163,858 |
|---|-------|-----------|

**Total Municipal Bonds Transferred to
Tender Option Bond Trusts 56.6%**

333,233,544

**Total Long-Term Investments
(Cost \$960,601,463) 167.9%**

988,253,006

Short-Term Securities

Shares

| | | |
|--|------------|------------|
| FBI Institutional Tax-Exempt Fund, 0.15% (h)(i) | 12,827,829 | 12,827,829 |
|--|------------|------------|

**Total Short-Term Securities
(Cost \$12,827,829) 2.2%**

12,827,829

1,001,080,835

| | |
|--|-----------------------|
| Total Investments | |
| (Cost \$973,429,292*) 170.1% | |
| Other Assets Less Liabilities 1.8% | 10,537,858 |
| Liability for Trust Certificates, Including Interest Expense and Fees Payable (30.5)% | (179,197,533) |
| Preferred Shares, at Redemption Value (41.4)% | (243,850,520) |
| Net Assets Applicable to Common Shares 100.0% | <u>\$ 588,570,640</u> |

* The cost and unrealized appreciation (depreciation) of investments as of November 30, 2010, as computed for federal income tax purposes, were as follows:

| | |
|-------------------------------|----------------------|
| Aggregate cost | \$ 796,961,997 |
| Gross unrealized appreciation | \$ 41,896,098 |
| Gross unrealized depreciation | (16,832,058) |
| Net unrealized appreciation | <u>\$ 25,064,040</u> |

- (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 under Rule 144A of the Securities Act of 1933. These securities may be resold in transactions exempt from registration to qualified institutional investors.
- (c) When-issued security. Unsettled when-issued transactions were as follows:

| Counterparty | Value | Unrealized Appreciation |
|---------------------------|--------------|-------------------------|
| Wells Fargo Bank | \$ 3,190,822 | \$ 98,739 |
| JPMorgan Securities, Inc. | \$ 2,662,436 | \$ 47,436 |
| Morgan Stanley & Co. | \$ 385,708 | \$ 6,587 |

- (d) Variable rate security. Rate shown is as of report date.
- (e) Security is collateralized by Municipal or US Treasury obligations.
- (f) Represents a zero-coupon bond. Rate shown reflects the current yield as of report date.
- (g) 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.

Schedule of Investments (concluded)

BlackRock MuniVest Fund, Inc. (MVF)

- (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, 2010 | Net Activity | Shares Held at November 30, 2010 | Income |
|-----------------------------------|--------------------------------|--------------|----------------------------------|----------|
| FFI Institutional Tax-Exempt Fund | 4,494,923 | 8,332,906 | 12,827,829 | \$ 5,706 |

- (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 November 30, 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 | | \$ 988,253,006 | | \$ 988,253,006 |
| Short-Term Securities | \$ 12,827,829 | | | 12,827,829 |
| Total | \$ 12,827,839 | \$ 988,253,006 | | \$ 1,001,080,835 |

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

BLACKROCK MUNIVEST FUND, INC.

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

Date: January 26, 2011

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

By: /s/ Anne F. Ackerley
Anne F. Ackerley
Chief Executive Officer (principal executive officer) of
BlackRock MuniVest Fund, Inc.

Date: January 26, 2011

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

Date: January 26, 2011