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BLACKROCK MUNIVEST FUND INC  
Form N-CSRS  
May 10, 2007

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM N-CSRS

CERTIFIED SHAREHOLDER REPORT OF REGISTERED MANAGEMENT INVESTMENT COMPANIES

Investment Company Act file number 811-05611

Name of Fund: BlackRock MuniVest Fund, Inc.

Fund Address: P.O. Box 9011  
Princeton, NJ 08543-9011

Name and address of agent for service: Robert C. Doll, Jr., Chief Executive  
Officer, BlackRock MuniVest Fund, Inc., 800 Scudders Mill Road,  
Plainsboro, NJ, 08536. Mailing address: P.O. Box 9011, Princeton, NJ,  
08543-9011

Registrant's telephone number, including area code: (609) 282-2800

Date of fiscal year end: 08/31/07

Date of reporting period: 09/01/06 - 02/28/07

Item 1 - Report to Stockholders

ALTERNATIVES    BLACKROCK SOLUTIONS    EQUITIES  
FIXED INCOME    LIQUIDITY    REAL ESTATE

BlackRock MuniVest Fund, Inc.

BLACKROCK

SEMI-ANNUAL REPORT  
FEBRUARY 28, 2007 | (UNAUDITED)

NOT FDIC INSURED  
MAY LOSE VALUE  
NO BANK GUARANTEE

BlackRock MuniVest Fund, Inc.

Portfolio Information as of February 28, 2007

Quality Ratings by S&P/Moody's	Percent of Total Investments
AAA/Aaa	32.7%
AA/Aa	17.8
A/A	27.3
BBB/Baa	17.1
BB/Ba	1.6
B/B	1.0
NR (Not Rated)	1.5

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Other\* ..... 1.0

\* Includes portfolio holdings in short-term investments and variable rate demand notes.

Announcement of Annual Stockholders Meeting

The Fund has determined that its annual stockholders meeting originally scheduled to be held in April 2007 will be postponed and will be held in September 2007. Proposals of stockholders intended to be presented at the meeting must be received by the Fund by May 15, 2007 for inclusion in the Fund's proxy statement and form of proxy for that meeting. The persons named as proxies in the proxy materials for the Fund's 2007 annual meeting of stockholders may exercise discretionary authority with respect to any stockholder proposal presented at such meeting if written notice of such proposal has not been received by the Fund by July 1, 2007. Written proposals and notices should be sent to the Secretary of the Fund, 800 Scudders Mill Road, Plainsboro, New Jersey 08536.

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A Letter to Shareholders

Dear Shareholder

The new year began on a positive note for most financial markets, continuing the momentum from the fourth quarter of 2006. At the end of February, however, global equity markets registered their first significant decline since last summer. The market jitters were triggered by a significant setback in the Chinese market and were exacerbated by several concerns, notably a weakening economy, some disappointing corporate earnings announcements, geopolitical concerns related to Iran's nuclear program and increasing delinquencies in the subprime mortgage market. Despite the recent spate of volatility, underlying stock market fundamentals appear quite sound, supported by a generally good global economic backdrop, tame inflation, relatively low interest rates and attractive valuations.

Not unlike the equity market, the bond market also has seen volatility recently as observers have attempted to interpret mixed economic signals. A bond market rally late last year reversed early in 2007 as the economic data strengthened. Prices improved (and yields fell) again in February as equities struggled. Notably, the Treasury curve remained inverted for much of 2006 and into 2007. The 30-year Treasury yield stood at 4.68% on February 28, 2007, while the one-month Treasury offered the highest yield on the curve at 5.24%.

For its part, the Federal Reserve Board (the Fed) has left the target short-term interest rate on hold at 5.25% since first pausing on August 8, 2006. Although the central bankers continue to express concern about potential inflationary pressures, they also have made reference to signs of economic weakness in their public statements. Most observers expect the Fed to keep interest rates on hold for now, but acknowledge that the combination of a mild economic slowdown and moderating inflation could prompt an interest rate cut later in 2007.

Notwithstanding the volatility along the way, most major market indexes managed to post positive returns for the annual and semi-annual reporting periods ended February 28, 2007:

Total Returns as of February 28, 2007 6-month 12-month

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U.S. equities (Standard & Poor's 500 Index)	+ 8.93%	+11.97%
Small cap U.S. equities (Russell 2000 Index)	+10.76	+ 9.87
International equities (MSCI Europe, Australasia, Far East Index)	+12.17	+21.07
Fixed income (Lehman Brothers Aggregate Bond Index)	+ 3.66	+ 5.54
Tax-exempt fixed income (Lehman Brothers Municipal Bond Index)	+ 2.89	+ 4.96
High yield bonds (Credit Suisse High Yield Index)	+ 8.62	+12.36

If the recent market movements are any guide, 2007 could be a year of enhanced market volatility. As you navigate the uncertainties of the financial markets, we encourage you to review your investment goals with your financial professional and to make portfolio changes, as needed. We thank you for trusting BlackRock with your investment assets, and we look forward to continuing to serve you in the months and years ahead.

Sincerely,

/s/ Robert C. Doll, Jr.

Robert C. Doll, Jr.  
Fund President and Director

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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### A Discussion With Your Fund's Portfolio Manager

The Fund continued to offer shareholders an above-average level of income, as we remained committed to protecting the portfolio's underlying value and enhancing yield in a historically low interest rate environment.

Describe the recent market environment relative to municipal bonds.

Long-term bond yields moved slightly lower during the six-month period, as their prices correspondingly increased. The municipal bond market's strong technical position allowed long-term tax-exempt bond yields to decline more than taxable yields.

Bond prices began to improve early in the period as economic growth softened and the Federal Reserve Board (the Fed) opted to refrain from raising its target interest rate after 17 consecutive increases since mid-2004. Bond prices found additional support from moderating oil prices, and by the end of November, 30-year U.S. Treasury bond yields had declined 32 basis points (.32%) to 4.56%.

In December 2006 and January 2007, however, economic releases were generally stronger than expected. The more positive economic environment, coupled with year-end profit-taking, helped push bond yields higher (and prices lower). By the end of January, long-term U.S. Treasury bond yields had risen to 4.93% before falling again in February as softer economic news, particularly relating to employment and housing, allowed bond prices to rally once again.

At the end of February 2007, 30-year U.S. Treasury bond yields stood at 4.68%, a

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decline of 20 basis points over the past six months. Ten-year U.S. Treasury note yields declined 18 basis points during the period to 4.56%. Longer-maturity tax-exempt issues outperformed comparable U.S. Treasury issues as investor demand outstripped a resurgent new-issue calendar. As reported by Municipal Market Data, yields on AAA-rated municipal issues maturing in 30 years declined 28 basis points to 3.97%, while yields on 10-year, AAA-rated issues declined eight basis points to 3.67%.

Investor demand for municipal product remained strong throughout the six-month period. According to the Investment Company Institute, long-term municipal bond funds had net new cash flows of over \$15 billion in 2006, a 200% increase compared to flows in 2005. This positive trend continued into 2007, with net cash flows in January exceeding \$2.8 billion. Weekly fund flows, as reported by AMG Data, also have supported tax-exempt bond prices. Weekly average cash flows into long-term tax-exempt funds averaged more than \$420 million over the past six months and more than \$487 million in February. These flows represent a considerable improvement from weekly levels of \$230 million - \$250 million in the middle of 2006.

New issuance in the municipal market has surged in recent months as municipalities have rushed to take advantage of low market yields and solid investor demand. During the six-month period, more than \$206 billion in new long-term tax-exempt bonds was issued, an increase of 19.5% versus the same period a year ago. During the last three months, more than \$115 billion in new long-term municipal bonds was underwritten, an increase of over 50% compared to the same period a year earlier. The recent increase in issuance has made the municipal market's outperformance even more impressive. In the past three months, we saw more than 10 underwritings that were greater than \$750 million in size. Investor demand has been so strong that these issues were well oversubscribed and saw their initial offering yields reduced by as much as 10 basis points.

Looking ahead, the tax-exempt bond market's technical position is likely to remain supportive, leading to continued outperformance relative to taxable issues. We believe recent stock market volatility and a benign inflationary environment should foster continued retail demand for municipal product in the coming months.

How did the Fund perform during the period?

For the six-month period ended February 28, 2007, the Common Stock of BlackRock MuniVest Fund, Inc. had net annualized yields of 5.27% and 5.32%, based on a period-end per share net asset value of \$10.02 and a per share market price of \$9.94, respectively, and \$.262 per share income dividends. Over the same period, the total investment return on the Fund's Common Stock was +3.61%, based on a change in per share net asset value from \$9.93 to \$10.02, and assuming reinvestment of all distributions.

For the same six-month period, the Fund's comparable Lipper category of General Municipal Debt Funds (Leveraged) posted an average return of +3.77%. (Funds in this Lipper category invest primarily in municipal debt issues rated in the top four credit-rating categories. These funds can be leveraged via use of debt, preferred equity and/or reverse repurchase agreements.) While its total return has been fairly similar to the Lipper category average, the Fund has

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BLACKROCK MUNIVEST FUND, INC.

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continued to distribute an above-average dividend yield to shareholders.

The Fund's recent performance has largely reflected our neutral interest rate

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exposure, meaning we have not taken any strong bias toward either the short or long end of the curve. For the most part, we have maintained the Fund's above-average exposure to the intermediate maturity range, which was realized as bond holdings were prerefunded. Although this exposure has detracted somewhat from total return performance given the relative flatness of the yield curve, we have chosen to maintain the portfolio's positions in prerefunded bonds and issues with shorter calls, as they were purchased at yields well above those presently available in the market. In addition, the sale of these bonds would result in both a decline in the Fund's distribution yield and material capital gains, which can mean a tax consequence for shareholders.

For a description of the Fund's total investment return based on a change in the per share market value of the Fund's Common Stock (as measured by the trading price of the Fund's shares on the American Stock Exchange), and assuming reinvestment of distributions, please refer to the Financial Highlights section of this report. As a closed-end fund, the Fund's shares may trade in the secondary market at a premium or discount to the Fund's net asset value. As a result, total investment returns based on changes in the market value of the Fund's Common Stock can vary significantly from total investment returns based on changes in the Fund's net asset value.

What changes were made to the portfolio during the period?

Overall portfolio activity has been fairly limited despite the recent increase in municipal bond issuance. This is because few of the new issues brought to market have met our desired investment characteristics in terms of maturity and coupon structure. For the most part, we have continued to focus on adding A-rated hospital revenue bonds to the portfolio whenever they have been attractively priced. The Fund's credit-quality profile remained essentially unchanged throughout the six months, with more than 70% of portfolio holdings rated A or higher.

For the six-month period ended February 28, 2007, the Fund's Auction Market Preferred Stock had average yields as follows: Series A, 3.49%; Series B, 3.63%; Series C, 3.59%; Series D, 3.50%; Series E, 3.42%; and Series F, 3.50%. The Fed kept its target short-term interest rate unchanged at 5.25% throughout the period. Consequently, the interest rate the Fund pays its Preferred Stock shareholders has remained relatively stable. Despite its flatness on a historical basis, the municipal yield curve has remained positively sloped (particularly relative to the U.S. Treasury curve), and this has continued to generate an income benefit to the holders of Common Stock from the leveraging of Preferred Stock. However, should the spread between short-term and long-term interest rates narrow, the benefits of leverage will decline and, as a result, reduce the yield on the Fund's Common Stock. For a more complete explanation of the benefits and risks of leveraging, see page 6 of this report to shareholders.

How would you characterize the Fund's position at the close of the period?

Generally speaking, we expect tax-exempt bond yields to be little changed through mid-year. We believe the current financial environment is well balanced with modest economic activity and minimal inflationary pressures. Such an environment should allow the Fed to remain on the sidelines, awaiting further economic developments to guide its interest rate decisions.

Against this backdrop, we expect to maintain our current neutral market posture. Should economic activity soften, triggered perhaps by additional equity or housing market declines, we would look to adopt a more constructive posture for the Fund. Meanwhile, given the current low investment rates available in the market, we would expect portfolio trading activity to remain fairly limited. As such, we intend to remain fully invested in an effort to maintain the Fund's already attractive dividend yield.

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Fred K. Stuebe  
Vice President and Portfolio Manager

March 9, 2007

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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### The Benefits and Risks of Leveraging

BlackRock MuniVest Fund, Inc. utilizes leveraging to seek to enhance the yield and net asset value of its Common Stock. However, these objectives cannot be achieved in all interest rate environments. To leverage, the Fund issues Preferred Stock, which pays dividends at prevailing short-term interest rates, and invests the proceeds in long-term municipal bonds. The interest earned on these investments, net of dividends to Preferred Stock, is paid to Common Stock shareholders in the form of dividends, and the value of these portfolio holdings is reflected in the per share net asset value of the Fund's Common Stock. However, in order to benefit Common Stock shareholders, the yield curve must be positively sloped; that is, short-term interest rates must be lower than long-term interest rates. At the same time, a period of generally declining interest rates will benefit Common Stock shareholders. If either of these conditions change, then the risks of leveraging will begin to outweigh the benefits.

To illustrate these concepts, assume a fund's Common Stock capitalization of \$100 million and the issuance of Preferred Stock for an additional \$50 million, creating a total value of \$150 million available for investment in long-term municipal bonds. If prevailing short-term interest rates are approximately 3% and long-term interest rates are approximately 6%, the yield curve has a strongly positive slope. The fund pays dividends on the \$50 million of Preferred Stock based on the lower short-term interest rates. At the same time, the fund's total portfolio of \$150 million earns the income based on long-term interest rates. Of course, increases in short-term interest rates would reduce (and even eliminate) the dividends on the Common Stock.

In this case, the dividends paid to Preferred Stock shareholders are significantly lower than the income earned on the fund's long-term investments, and therefore the Common Stock shareholders are the beneficiaries of the incremental yield. However, if short-term interest rates rise, narrowing the differential between short-term and long-term interest rates, the incremental yield pickup on the Common Stock will be reduced or eliminated completely. At the same time, the market value of the fund's Common Stock (that is, its price as listed on the American Stock Exchange) may, as a result, decline. Furthermore, if long-term interest rates rise, the Common Stock's net asset value will reflect the full decline in the price of the portfolio's investments, since the value of the fund's Preferred Stock does not fluctuate. In addition to the decline in net asset value, the market value of the fund's Common Stock may also decline.

As of February 28, 2007, the Fund's leverage amount, due to Auction Market Preferred Stock, was 35.10%, before the deduction of Preferred Stock.

As a part of its investment strategy, the Fund may invest in certain securities whose potential income return is inversely related to changes in a floating interest rate ("inverse floaters"). In general, income on inverse floaters will decrease when short-term interest rates increase and increase when short-term interest rates decrease. Investments in inverse floaters may be characterized as derivative securities and may subject the Fund to the risks of reduced or eliminated interest payments and losses of invested principal. In addition, inverse floaters have the effect of providing investment leverage and, as a

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result, the market value of such securities will generally be more volatile than that of fixed rate, tax-exempt securities. To the extent the Fund invests in inverse floaters, the market value of the Fund's portfolio and the net asset value of the Fund's shares may also be more volatile than if the Fund did not invest in these securities.

Swap Agreements

The Fund may invest in swap agreements, which are over-the-counter contracts in which one party agrees to make periodic payments based on the change in market value of a specified bond, basket of bonds or index in return for periodic payments based on a fixed or variable interest rate or the change in market value of a different bond, basket of bonds or index. Swap agreements may be used to obtain or reduce exposure to a bond or market without owning or taking physical custody of securities. Swap agreements involve the risk that the party with whom the Fund has entered into the swap will default on its obligation to pay the Fund and the risk that the Fund will not be able to meet its obligations to pay the other party to the agreement.

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Schedule of Investments as of February 28, 2007 (Unaudited) (in Thousands)

Face Amount	Municipal Bonds	Value
=====		
Alabama -- 6.4%		
\$15,020	Birmingham, Alabama, Special Care Facilities Financing Authority, Revenue Refunding Bonds (Ascension Health Credit), Series C-2, 5% due 11/15/2036	\$ 15,762
2,550	Camden, Alabama, IDB, Exempt Facilities Revenue Bonds (Weyerhaeuser Company), Series A, 6.125% due 12/01/2024	2,801
	Huntsville, Alabama, Health Care Authority Revenue Bonds:	
3,500	Series A, 5.75% due 6/01/2031	3,740
5,000	Series B, 5.75% due 6/01/2032	5,405
6,500	Prattville, Alabama, IDB, Environmental Improvement Revenue Bonds (International Paper Company Projects), AMT, Series A, 4.75% due 12/01/2030	6,552
5,000	Selma, Alabama, IDB, Environmental Improvement Revenue Refunding Bonds (International Paper Company Project), Series B, 5.50% due 5/01/2020	5,324
=====		
Arizona -- 1.9%		
4,100	Maricopa County, Arizona, IDA, Education Revenue Bonds (Arizona Charter Schools Project 1), Series A, 6.75% due 7/01/2029	4,193
	Pima County, Arizona, IDA, Education Revenue Bonds (Arizona Charter Schools Project):	
2,100	Series E, 7.25% due 7/01/2031	2,345
500	Series I, 6.10% due 7/01/2024	536
1,000	Series I, 6.30% due 7/01/2031	1,079
	Pima County, Arizona, IDA, Education Revenue Refunding Bonds:	
1,545	(Arizona Charter Schools Project), Series O, 5% due 7/01/2026	1,556

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1,565	(Arizona Charter Schools Project II), Series A, 6.75% due 7/01/2021	1,690
=====		
California -- 18.0%		
18,850	California Health Facilities Financing Authority Revenue Bonds (Kaiser Permanente), Series A, 5.25% due 4/01/2039	20,154
	California State, GO:	
11,650	5.50% due 4/01/2014 (a)	13,028
560	5.50% due 4/01/2030	615
	California State Public Works Board, Lease Revenue Bonds:	
5,000	(Department of Corrections), Series C, 5.50% due 6/01/2022	5,515
6,000	(Department of Corrections), Series C, 5.50% due 6/01/2023	6,614
11,075	(Department of Mental Health -- Coalinga State Hospital), Series A, 5.125% due 6/01/2029	11,738
11,250	California State, Various Purpose, GO, 5.50% due 11/01/2033	12,291
5,240	California Statewide Communities Development Authority, Health Facility Revenue Bonds (Memorial Health Services), Series A, 6% due 10/01/2023	5,831
1,250	Chula Vista, California, IDR (San Diego Gas and Electric Company), AMT, Series B, 5% due 12/01/2027	1,327
	Golden State Tobacco Securitization Corporation of California, Tobacco Settlement Revenue Bonds:	
10,725	Series A-3, 7.875% due 6/01/2042	13,048
3,750	Series A-4, 7.80% due 6/01/2042	4,547
1,425	Series A-5, 7.875% due 6/01/2042	1,734
13,900	Series B, 5.375% due 6/01/2010 (a)	14,651
=====		
Colorado -- 1.1%		
	Colorado HFA, Revenue Refunding Bonds:	
2,500	(Adventist Health System/Sunbelt Obligor Group), Series D, 5.125% due 11/15/2029	2,650
625	(S/F Program), AMT, Senior Series A-2, 6.60% due 5/01/2028	642
225	(S/F Program), AMT, Senior Series A-2, 7.50% due 4/01/2031	228
3,000	Colorado Health Facilities Authority Revenue Bonds (Lutheran Medical Center), Series A, 5.25% due 6/01/2034	3,147
=====		
Connecticut -- 0.5%		
2,810	Mohegan Tribe Indians Gaming Authority, Connecticut, Public Improvement Revenue Refunding Bonds (Priority Distribution), 6.25% due 1/01/2031	2,996
=====		
Florida -- 5.1%		
	Highlands County, Florida, Health Facilities Authority, Hospital Revenue Bonds (Adventist Health System):	
6,000	Series C, 5.25% due 11/15/2036	6,409
6,000	Series D, 5.375% due 11/15/2013 (a)	6,577
6,590	Highlands County, Florida, Health Facilities Authority, Hospital Revenue Refunding Bonds (Adventist Health System), Series G, 5.125% due 11/15/2032	6,959
10,320	Orange County, Florida, Health Facilities Authority, Hospital Revenue Bonds (Adventist Health System), 5.625% due 11/15/2012 (a)	11,395
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Georgia -- 3.4%		Gainesville, Georgia, Redevelopment Authority, Educational Facilities Revenue Refunding Bonds (Riverside Military Academy), 5.125% due 3/01/2037	1,139
		Georgia Municipal Electric Authority, Power Revenue Refunding Bonds:	
	4,600	Series W, 6.60% due 1/01/2018	5,352
	250	Series W, 6.60% due 1/01/2018 (e)	289
	250	Series Y, 10% due 1/01/2010 (e)	292
		Milledgeville-Baldwin County, Georgia, Development Authority Revenue Bonds (Georgia College and State University Foundation):	
	4,390	5.50% due 9/01/2024	4,754
	3,500	5.625% due 9/01/2030	3,813
	4,785	Monroe County, Georgia, Development Authority, PCR, Refunding (Oglethorpe Power Corporation -- Scherer), Series A, 6.80% due 1/01/2011	5,275

### Portfolio Abbreviations

To simplify the listings of BlackRock MuniVest Fund, Inc.'s portfolio holdings in the Schedule of Investments, we have abbreviated the names of many of the securities according to the list at right.

AMT	Alternative Minimum Tax (subject to)
DRIVERS	Derivative Inverse Tax-Exempt Receipts
EDA	Economic Development Authority
GO	General Obligation Bonds
HDA	Housing Development Authority
HFA	Housing Finance Agency
IDA	Industrial Development Authority
IDB	Industrial Development Board
IDR	Industrial Development Revenue Bonds
M/F	Multi-Family
PCR	Pollution Control Revenue Bonds
RIB	Residual Interest Bonds
S/F	Single-Family
VRDN	Variable Rate Demand Notes

BLACKROCK MUNIVEST FUND, INC. FEBRUARY 28, 2007 7

### Schedule of Investments (Continued) (in Thousands)

	Face Amount	Municipal Bonds	Value
Idaho -- 0.1%	\$ 390	Idaho Housing Agency, S/F Mortgage Revenue Refunding Bonds, AMT, Series E-2, 6.90% due 1/01/2027	\$ 400
Illinois -- 12.7%	5,000	Chicago, Illinois, O'Hare International Airport, General Airport Revenue Refunding Bonds, Third Lien, AMT, Series A, 5.75% due 1/01/2019 (c)	5,372
	11,200	Chicago, Illinois, O'Hare International Airport Revenue	

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	Bonds, AMT, Third Lien, Series B-2, 6% due 1/01/2029 (n)	12,600
75	Chicago, Illinois, S/F Mortgage Revenue Bonds, AMT, Series C, 7% due 3/01/2032 (d) (k)	77
10,000	Hodgkins, Illinois, Environmental Improvement Revenue Bonds (Metro Biosolids Management LLC Project), AMT, 6% due 11/01/2023	10,385
2,140	Illinois Development Finance Authority Revenue Bonds (Community Rehabilitation Providers Facilities), Series A, 6.50% due 7/01/2022	2,337
1,365	Illinois Development Finance Authority, Revenue Refunding Bonds (Community Rehabilitation Providers Facilities), Series A, 6% due 7/01/2015	1,386
455	Illinois HDA, Revenue Refunding Bonds (M/F Program), Series 5, 6.75% due 9/01/2023	460
2,695	Illinois State Finance Authority, Revenue Bonds (Community Rehabilitation Providers Facilities), 4.625% due 7/01/2027	2,712
13	Kane and De Kalb Counties, Illinois, Community Unit School District Number 302, GO, DRIVERS, Series 283, 7.494% due 2/01/2018 (f) (m)	15
	McLean and Woodford Counties, Illinois, Community Unit, School District Number 005, GO, Refunding (i):	
5,000	6.25% due 12/01/2014	5,542
4,000	6.375% due 12/01/2016	4,459
18,550	Metropolitan Pier and Exposition Authority, Illinois, Dedicated State Tax Revenue Refunding Bonds (McCormick Place Expansion Project), Series B, 5.75% due 6/15/2023 (c)	20,337
	Regional Transportation Authority, Illinois, Revenue Bonds:	
3,500	Series A, 7.20% due 11/01/2020 (h)	4,361
4,000	Series C, 7.75% due 6/01/2020 (f)	5,521
	Will County, Illinois, School District Number 122 (New Lenox Elementary), GO, Series A (i):	
1,870	6.50% due 11/01/2010 (a)	2,048
505	6.50% due 11/01/2013	551
=====		
Indiana -- 11.6%		
16,350	Indiana Health and Educational Facilities Financing Authority, Hospital Revenue Bonds (Clarian Health Obligation), Series A, 5.25% due 2/15/2040	17,345
6,500	Indiana Health and Educational Facilities Financing Authority, Hospital Revenue Refunding Bonds (Clarian Health Obligation), Series B, 5% due 2/15/2033	6,728
15,150	Indiana Health and Educational Facility Financing Authority, Revenue Refunding Bonds (Ascension Health Credit), Series B-5, 5% due 11/15/2036	15,898
4,290	Indiana State HFA, S/F Mortgage Revenue Refunding Bonds, Series A, 6.80% due 1/01/2017 (j)	4,394
8,195	Indiana Transportation Finance Authority, Highway Revenue Bonds, Series A, 6.80% due 12/01/2016	9,686
15,335	Indianapolis, Indiana, Local Public Improvement Bond Bank, Revenue Refunding Bonds, Series D, 6.75% due 2/01/2014	17,369
=====		
Kansas -- 0.6%		
3,805	Sedgwick and Shawnee Counties, Kansas, S/F Mortgage Revenue Bonds (Mortgage-Backed Securities Program), AMT, Series A-4, 5.95% due 12/01/2033 (d)	3,871

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Kentucky -- 3.5%			
20,350	Louisville and Jefferson County, Kentucky, Metropolitan Government Health System, Revenue Refunding Bonds (Norton Healthcare, Inc.), 5.25% due 10/01/2036		21,642
=====			
Louisiana -- 5.1%			
10,575	Louisiana Local Government, Environmental Facilities, Community Development Authority Revenue Bonds (Capital Projects and Equipment Acquisition), Series A, 6.30% due 7/01/2030 (h)		12,841
	Louisiana Public Facilities Authority, Hospital Revenue Bonds (Franciscan Missionaries of Our Lady Health System, Inc.), Series A:		
6,220	5% due 8/15/2033		6,472
11,660	5.25% due 8/15/2036		12,388
=====			
Maine -- 0.3%			
	Portland, Maine, Housing Development Corporation, Senior Living Revenue Bonds (Avesta Housing Development Corporation Project), Series A:		
775	5.70% due 8/01/2021		815
1,190	6% due 2/01/2034		1,262
=====			
Massachusetts -- 7.5%			
2,035	Boston, Massachusetts, Water and Sewer Commission Revenue Bonds, 9.25% due 1/01/2011 (e)		2,383
3,010	Massachusetts Bay Transportation Authority, Revenue Refunding Bonds (General Transportation System), Series A, 7% due 3/01/2019		3,728
30,000	Massachusetts State Water Resource Authority Revenue Bonds, Series A, 6.50% due 7/15/2019 (e)		35,974
3,480	Massachusetts State Water Resource Authority, Revenue Refunding Bonds, Series A, 6% due 8/01/2010 (a) (f)		3,774
=====			
Michigan -- 6.4%			
2,500	Delta County, Michigan, Economic Development Corporation, Environmental Improvement Revenue Refunding Bonds (Mead Westvaco-Escanaba), Series A, 6.25% due 4/15/2012 (a)		2,794
	Macomb County, Michigan, Hospital Finance Authority, Hospital Revenue Bonds (Mount Clemens General Hospital), Series B:		
3,715	5.75% due 11/15/2025		3,902
4,250	5.875% due 11/15/2034		4,519
1,900	Michigan State Hospital Finance Authority, Hospital Revenue Refunding Bonds (Crittenton Hospital), Series A, 5.625% due 3/01/2027		2,045
	Michigan State Hospital Finance Authority, Revenue Bonds, Series A:		
3,650	(Mid-Michigan Obligor Group), 5% due 4/15/2036		3,796
6,500	(Trinity Health Credit Group), 5% due 12/01/2031		6,886

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Face Amount	Municipal Bonds	Value
=====		
Michigan (concluded)		
	Michigan State Hospital Finance Authority, Revenue Refunding Bonds:	
\$ 3,000	(Henry Ford Health System), Series A, 5.25% due 11/15/2032	\$ 3,227
10,600	(Henry Ford Health System), Series A, 5% due 11/15/2038	11,072
1,000	(Sinai Hospital), 6.70% due 1/01/2026	1,011
=====		
Minnesota -- 1.5%		
7,235	Minneapolis, Minnesota, Health Care System Revenue Bonds (Allina Health System), Series A, 5.75% due 11/15/2032	7,841
1,405	Saint Cloud, Minnesota, Health Care Revenue Refunding Bonds (Saint Cloud Hospital Obligation Group), Series A, 6.25% due 5/01/2017 (i)	1,516
=====		
Mississippi -- 6.1%		
	Lowndes County, Mississippi, Solid Waste Disposal and PCR, Refunding (Weyerhaeuser Company Project):	
9,160	Series A, 6.80% due 4/01/2022	11,236
4,500	Series B, 6.70% due 4/01/2022	5,473
20,705	Mississippi Business Finance Corporation, Mississippi, PCR, Refunding (System Energy Resources Inc. Project), 5.875% due 4/01/2022	20,930
=====		
Missouri -- 0.5%		
2,600	Missouri State Development Finance Board, Infrastructure Facilities Revenue Refunding Bonds (Branson), Series A, 5.50% due 12/01/2032	2,753
220	Missouri State Housing Development Commission, S/F Mortgage Revenue Bonds (Homeowner Loan), AMT, Series A, 7.50% due 3/01/2031 (d)	230
=====		
Montana -- 1.0%		
6,000	Forsyth, Montana, PCR, Refunding (Portland General Electric Company), Series A, 5.20% due 5/01/2033	6,148
=====		
Nebraska -- 0.0%		
285	Nebraska Investment Finance Authority, S/F Housing Revenue Bonds, AMT, Series C, 6.30% due 9/01/2028 (d) (k)	288
=====		
Nevada -- 0.2%		
	Nevada Housing Division Revenue Bonds, AMT:	
1,175	(Multi-Unit Housing), Issue B, 7.45% due 10/01/2017 (b)	1,177
15	(S/F Program), Series A, 6.55% due 10/01/2012 (j)	15
=====		
New Hampshire -- 0.5%		
2,675	New Hampshire Health and Education Facilities Authority, Revenue Refunding Bonds (Elliot Hospital), Series B, 5.60% due 10/01/2022	2,894
=====		
New Jersey -- 6.5%		

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	New Jersey EDA, Cigarette Tax Revenue Bonds:		
9,080	5.50% due 6/15/2024		9,592
2,885	5.75% due 6/15/2029		3,130
2,855	5.50% due 6/15/2031		3,035
6,695	5.75% due 6/15/2034		7,220
5,980	Tobacco Settlement Financing Corporation of New Jersey, Asset-Backed Revenue Bonds, 7% due 6/01/2013 (a)		7,069
10,000	Tobacco Settlement Financing Corporation of New Jersey, Revenue Refunding Bonds, Series 1A, 5% due 6/01/2029		9,946
=====			
New Mexico -- 0.5%			
3,300	Farmington, New Mexico, PCR, Refunding (Public Service Company of New Mexico -- San Juan Project), Series A, 5.80% due 4/01/2022		3,333
=====			
New York -- 1.9%			
400	Metropolitan Transportation Authority, New York, Dedicated Tax Fund, Revenue Refunding Bonds, VRDN, Series B, 3.63% due 11/01/2022 (i) (1)		400
1,125	New York City, New York, City Transitional Finance Authority Revenue Bonds, RIB, Series 283, 8.55% due 11/15/2015 (m)		1,326
6,480	New York City, New York, GO: Series F, 5.25% due 1/15/2033		6,893
360	Series I, 6.25% due 4/15/2007 (a) (n)		365
20	Series I, 6.25% due 4/15/2017 (n)		20
965	New York City, New York, GO, Refunding, Series A, 6.375% due 5/15/2014 (f)		1,050
400	New York State Local Government Assistance Corporation, Revenue Refunding Bonds, Sub-Lien, VRDN, Series 4V, 3.60% due 4/01/2022 (i) (1)		400
1,200	Triborough Bridge and Tunnel Authority, New York, General Purpose Revenue Refunding Bonds, VRDN, Series C, 3.60% due 1/01/2032 (h) (1)		1,200
=====			
North Carolina -- 0.7%			
4,105	Gaston County, North Carolina, Industrial Facilities and Pollution Control Financing Authority, Revenue Bonds (National Gypsum Company Project), AMT, 5.75% due 8/01/2035		4,424
=====			
Ohio -- 0.2%			
1,000	Richland County, Ohio, Hospital Facilities Revenue Refunding Bonds (MedCentral Health System), 5.25% due 11/15/2036		1,063
=====			
Pennsylvania -- 4.0%			
2,440	Pennsylvania State Higher Education Assistance Agency Revenue Bonds, Capital Acquisition, 6.125% due 12/15/2010 (a) (c)		2,653
6,250	Pennsylvania State Higher Educational Facilities Authority Revenue Bonds (University of Pennsylvania Medical Center Health System), Series A, 6% due 1/15/2031		6,765
1,000	Philadelphia, Pennsylvania, Authority for Industrial Development, Senior Living Revenue Bonds: (Arbor House Inc. Project), Series E, 6.10% due 7/01/2033		1,066
1,355	(Rieder House Project), Series A, 6.10% due 7/01/2033		1,444

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9,280	Sayre, Pennsylvania, Health Care Facilities Authority, Revenue Bonds (Guthrie Healthcare System), Series B, 7.125% due 12/01/2031	11,028
1,750	Sayre, Pennsylvania, Health Care Facilities Authority, Revenue Refunding Bonds (Guthrie Healthcare System), Series A, 6.25% due 12/01/2018	1,926
=====		
South Carolina -- 2.1%		
1,000	Georgetown County, South Carolina, Environmental Improvement Revenue Refunding Bonds (International Paper Company Project), AMT, Series A, 5.55% due 12/01/2029	1,056
3,500	Lexington County, South Carolina, Health Services District Inc., Hospital Revenue Refunding and Improvement Bonds, 5.50% due 11/01/2032	3,729

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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Schedule of Investments (Continued)

(in Thousands)

Face Amount	Municipal Bonds	Value
=====		
South Carolina (concluded)		
\$ 2,450	Medical University Hospital Authority, South Carolina, Hospital Facilities Revenue Refunding Bonds, 6.50% due 8/15/2012 (a)	\$ 2,790
5,000	Richland County, South Carolina, Environmental Improvement Revenue Refunding Bonds (International Paper), AMT, 6.10% due 4/01/2023	5,448
=====		
Tennessee -- 1.5%		
2,000	McMinn County, Tennessee, IDB, Solid Waste Revenue Bonds (Recycling Facility -- Calhoun Newsprint), AMT, 7.40% due 12/01/2022	2,028
6,500	Shelby County, Tennessee, Health, Educational and Housing Facility Board, Hospital Revenue Refunding Bonds (Methodist Healthcare), 6.50% due 9/01/2012 (a)	7,410
=====		
Texas -- 14.0%		
7,290	Austin, Texas, Convention Center Revenue Bonds (Convention Enterprises, Inc.), First Tier, Series A, 6.70% due 1/01/2011 (a)	8,060
3,055	Brazos River Authority, Texas, PCR, Refunding (Texas Utility Company), AMT, Series A, 7.70% due 4/01/2033	3,508
11,460	Brazos River, Texas, Harbor Navigation District, Brazoria County Environmental Revenue Refunding Bonds (Dow Chemical Company Project), AMT, Series A-7, 6.625% due 5/15/2033	12,858
3,000	Gregg County, Texas, Health Facilities Development Corporation, Hospital Revenue Bonds (Good Shepherd Medical Center Project), 6.875% due 10/01/2010 (a) (g)	3,343
10,250	Guadalupe-Blanco River Authority, Texas, Sewage and	

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		Solid Waste Disposal Facility Revenue Bonds (E. I. du Pont de Nemours and Company Project), AMT, 6.40% due 4/01/2026	10,467
6,000		Gulf Coast Waste Disposal Authority, Texas, Revenue Refunding Bonds (International Paper Company), AMT, Series A, 6.10% due 8/01/2024	6,478
5,500		Harris County-Houston Sports Authority, Texas, Revenue Refunding Bonds, Senior Lien, Series G, 5.75% due 11/15/2020 (c)	5,927
1,790		Houston, Texas, Industrial Development Corporation Revenue Bonds (Air Cargo), AMT, 6.375% due 1/01/2023	1,923
		Mansfield, Texas, Independent School District, GO, Refunding:	
1,875		6.625% due 2/15/2010 (a)	2,030
155		6.625% due 2/15/2015	167
9,355		Matagorda County, Texas, Navigation District Number 1, Revenue Refunding Bonds (Centerpoint Energy Project), 5.60% due 3/01/2027	9,977
5,225		Midway, Texas, Independent School District, GO, Refunding, 6.125% due 8/15/2014	5,616
2,700		Port Corpus Christi, Texas, Revenue Refunding Bonds (Celanese Project), Series A, 6.45% due 11/01/2030	2,919
5,000		Red River Authority, Texas, PCR, Refunding (Celanese Project), AMT, Series B, 6.70% due 11/01/2030	5,479
7,280		Sabine River Authority, Texas, PCR, Refunding (TXU Electric Company Project/TXU Energy Company LLC), Series C, 5.20% due 5/01/2028	7,463
=====			
Vermont -- 0.2%			
1,000		Vermont Educational and Health Buildings Financing Agency, Developmental and Mental Health Revenue Bonds (Howard Center for Human Services), Series A, 6.375% due 6/15/2022	1,069
=====			
Virginia -- 0.2%			
1,425		Chesterfield County, Virginia, IDA, PCR (Virginia Electric and Power Company), Series A, 5.875% due 6/01/2017	1,532
=====			
Washington -- 3.4%			
3		Energy Northwest, Washington, Electric Revenue Refunding Bonds, DRIVERS, Series 255, 7.992% due 7/01/2018 (h) (m)	3
2,370		Seattle, Washington, Housing Authority Revenue Bonds (Replacement Housing Project), 6.125% due 12/01/2032	2,441
408		Washington State, GO, Trust Receipts, Class R, Series 6, 8.018% due 1/01/2014 (i) (m)	460
14,320		Washington State Public Power Supply System, Revenue Refunding Bonds (Nuclear Project Number 1), Series B, 7.125% due 7/01/2016	17,983
=====			
Wisconsin -- 1.7%			
1,765		Milwaukee, Wisconsin, Revenue Bonds (Air Cargo), AMT, 6.50% due 1/01/2025	1,907
5,000		Wisconsin State Health and Educational Facilities Authority, Mortgage Revenue Bonds (Hudson Memorial Hospital), 5.70% due 1/15/2029 (j)	5,366
3,040		Wisconsin State Health and Educational Facilities Authority Revenue Bonds (Synergyhealth Inc.), 6% due 11/15/2032	3,320

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=====
U.S. Virgin Islands -- 1.5%
      8,000   Virgin Islands Government Refinery Facilities, Revenue
              Refunding Bonds (Hovensa Coker Project), AMT,
              6.50% due 7/01/2021                                     9,048
=====
  
```

```

-----
Total Municipal Bonds
(Cost -- $756,497) -- 132.4%                                     816,032
=====
  
```

Municipal Bonds Held in Trust (q)

```

=====
Illinois -- 7.4%
      14,000   Chicago, Illinois, O'Hare International Airport, General
              Airport Revenue Refunding Bonds, Third Lien, AMT,
              Series A, 5.75% due 1/01/2020 (c)                       15,042
      17,080   Chicago, Illinois, O'Hare International Airport Revenue
              Bonds, Third Lien, AMT, Series B-2, 6%
              due 1/01/2027 (c)                                       19,226
              Kane and De Kalb Counties, Illinois, Community Unity
              School District Number 302, GO (f):
      2,975     5.75% due 2/01/2018                                     3,318
      2,710     5.75% due 2/01/2019                                     3,022
      4,780     5.75% due 2/01/2021                                     5,331
=====
  
```

10 BLACKROCK MUNIVEST FUND, INC. FEBRUARY 28, 2007

Schedule of Investments (Concluded) (in Thousands)

Face Amount	Municipal Bonds Held in Trust (q)	Value
Massachusetts -- 3.5%		
\$20,000	Massachusetts State School Building Authority, Dedicated Sales Tax Revenue Bonds, Series A, 5% due 8/15/2030 (i)	\$ 21,365
New York -- 7.1%		
13,500	New York City, New York, City Transitional Finance Authority Revenue Bonds, Future Tax Secured, Series B, 6.25% due 11/15/2018	14,705
26,750	New York State Dormitory Authority, State University Educational Facilities Revenue Refunding Bonds, Series 1989, 6% due 5/15/2010 (a) (c)	28,944
Oregon -- 1.1%		
6,610	Portland, Oregon, Sewer System Revenue Bonds, Series A, 5.75% due 8/01/2010 (a) (f)	7,061
Texas -- 6.3%		
20,970	Harris County, Texas, Health Facilities Development Corporation, Revenue Refunding Bonds (School Health	



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	Care System), Series B, 5.75% due 7/01/2027 (e)	25,577
12,500	San Antonio, Texas, Electric and Gas Revenue Bonds, Series A, 5.75% due 2/01/2010 (a)	13,230
=====		
Washington -- 8.6%		
11,660	Energy Northwest, Washington, Electric Revenue Refunding Bonds (Columbia Generating Station), Series A, 5.75% due 7/01/2018 (c)	12,761
7,015	Energy Northwest, Washington, Electric Revenue Refunding Bonds (Columbia Generating Station), Series B, 6% due 7/01/2018 (h)	7,761
14,700	Energy Northwest, Washington, Electric Revenue Refunding Bonds (Project Number 1), Series B, 6% due 7/01/2017 (c)	16,227
15,385	Washington State, Various Purpose, GO, Series B, 6% due 1/01/2010 (a) (i)	16,356
=====		
	Total Municipal Bonds Held in Trust (Cost -- \$199,417) -- 34.0%	209,926
=====		
Shares		
	Held Short-Term Securities	
=====		
8,119	Merrill Lynch Institutional Tax-Exempt Fund, 3.46% (o) (p)	8,119
-----		
	Total Short-Term Securities (Cost -- \$8,119) -- 1.3%	8,119
=====		
	Total Investments (Cost -- \$964,033*) -- 167.7%	1,034,077
	Other Assets Less Liabilities -- 2.4%	14,957
	Liability for Trust Certificates, Including Interest Expense Payable -- (15.9%)	(98,206)
	Preferred Stock, at Redemption Value -- (54.2%)	(334,290)
	Net Assets Applicable to Common Stock -- 100.0%	\$ 616,538
=====		

\* The cost and unrealized appreciation (depreciation) of investments as of February 28, 2007, as computed for federal income tax purposes, were as follows:

Aggregate cost .....	\$ 868,309
	=====
Gross unrealized appreciation .....	\$ 68,453
Gross unrealized depreciation .....	(343)
	-----
Net unrealized appreciation .....	\$ 68,110
	=====

- (a) Prerefunded.
- (b) FNMA Collateralized.
- (c) MBIA Insured.
- (d) FNMA/GNMA Collateralized.

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- (e) Escrowed to maturity.
- (f) FGIC Insured.
- (g) Radian Insured.
- (h) AMBAC Insured.
- (i) FSA Insured.
- (j) FHA Insured.
- (k) FHLMC Collateralized.
- (l) Security may have a maturity of more than one year at time of issuance, but has variable rate and demand features that qualify it as a short-term security. The rate disclosed is that currently in effect. This rate changes periodically based upon prevailing market rates.
- (m) The rate disclosed is that currently in effect. This rate changes periodically and inversely based upon prevailing market rates.
- (n) XL Capital Insured.
- (o) Investments in companies considered to be an affiliate of the Fund, for purposes of Section 2(a)(3) of the Investment Company Act of 1940, were as follows:

Affiliate	Net Activity	Dividend Income
Merrill Lynch Institutional Tax-Exempt Fund	7,697	\$167

- (p) Represents the current yield as of February 28, 2007.
- (q) Securities represent underlying bonds transferred to a separate securitization trust established in a tender option bond transaction in which the Fund may have acquired the residual interest certificates. These securities serve as collateral in a financing transaction. See Note 1(c) to Financial Statements for details of Municipal Bonds Held in Trust.
- o Forward interest rate swaps outstanding as of February 28, 2007 were as follows:

	Notional Amounts	Unrealized Appreciation (Depreciation)
Pay a fixed rate of 3.59% and receive a floating rate based on a 1-week Bond Market Association rate		
Broker, JPMorgan Chase Expires March 2017	\$17,250	\$ 34
Pay a fixed rate of 3.677% and receive a floating rate based on a 1-week Bond Market Association rate		
Broker, JPMorgan Chase Expires April 2017	\$25,000	(114)
Pay a fixed rate of 3.881% and receive a floating rate based on a 1-week Bond Market Association rate		
Broker, JPMorgan Chase Expires March 2027	\$25,000	(184)
Total		\$ (264)

See Notes to Financial Statements.

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BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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Statement of Net Assets

As of February 28, 2007 (Unaudited)

Assets

Investments in unaffiliated securities, at value (identified cost -- \$955,914,185) .....  
Investments in affiliated securities, at value (identified cost -- \$8,119,167) .....  
Cash .....  
Unrealized appreciation on forward interest rate swaps .....  
Receivables:  
    Securities sold .....  
    Interest .....  
  
Prepaid expenses .....  
  
Total assets .....

Liabilities

Trust certificates .....  
Unrealized depreciation on forward interest rate swaps .....  
Payables:  
    Securities purchased .....  
    Dividends to Common Stock shareholders .....  
    Interest expense .....  
    Investment adviser .....  
    Other affiliates .....  
  
Accrued expenses .....  
  
Total liabilities .....

Preferred Stock

Preferred Stock, at redemption value, par value \$.025 per share; 10,000,000 shares authorized (2,000 Series A Shares, 2,000 Series B Shares, 2,000 Series C Shares, 2,000 Series D Shares and 3,000 Series E Shares) and \$.10 per share (2,360 Series F Shares) of AMPS\* authorized, issued and outstanding at \$25,000 per share liquidation preference) .....

Net Assets Applicable to Common Stock

Net assets applicable to Common Stock .....

Analysis of Net Assets Applicable to Common Stock

Common Stock, par value \$.10 per share; 150,000,000 shares authorized (61,530,086 shares issued and outstanding) .....  
Paid-in capital in excess of par .....  
Undistributed investment income -- net .....  
Accumulated realized capital losses -- net .....

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Unrealized appreciation -- net .....  
 Total accumulated earnings -- net .....  
 Total -- Equivalent to \$10.02 net asset value per share of Common Stock  
 (market price -- \$9.94) .....

\* Auction Market Preferred Stock.  
 See Notes to Financial Statements.

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Statement of Operations

For the Six Months Ended February 28, 2007 (Unaudited)

Investment Income

Interest .....  
 Dividends from affiliates .....  
 Total income .....

Expenses

Investment advisory fees .....  
 Interest expense and fees .....  
 Commission fees .....  
 Accounting services .....  
 Transfer agent fees .....  
 Professional fees .....  
 Printing and shareholder reports .....  
 Custodian fees .....  
 Pricing fees .....  
 Directors' fees and expenses .....  
 Listing fees .....  
 Other .....  
 Total expenses before reimbursement .....  
 Reimbursement of expenses .....  
 Total expenses after reimbursement .....  
 Investment income -- net .....

Realized & Unrealized Gain (Loss) -- Net

Realized gain (loss) on:  
 Investments -- net .....  
 Forward interest rate swaps -- net .....  
 Change in unrealized appreciation/depreciation on:  
 Investments -- net .....

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Forward interest rate swaps -- net .....  
Total realized and unrealized gain -- net .....

=====  
Dividends to Preferred Stock Shareholders  
-----

Investment income -- net .....  
Net Increase in Net Assets Resulting from Operations .....

See Notes to Financial Statements.

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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Statements of Changes in Net Assets

Increase (Decrease) in Net Assets:  
=====

Operations  
-----

Investment income -- net  
Realized gain -- net  
Change in unrealized appreciation/depreciation -- net  
Dividends to Preferred Stock shareholders  
  
Net increase in net assets resulting from operations

=====  
Dividends to Common Stock Shareholders  
-----

Investment income -- net  
  
Net decrease in net assets resulting from dividends to Common Stock shareholders

=====  
Capital Stock Transactions  
-----

Value of shares issued to Common Stock shareholders in reinvestment of dividends  
  
Net increase in net assets resulting from capital stock transactions

=====  
Net Assets Applicable to Common Stock  
-----

Total increase (decrease) in net assets applicable to Common Stock  
Beginning of period  
  
End of period\*

\* Undistributed investment income -- net

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See Notes to Financial Statements.

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BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

## Financial Highlights

(As Restated for 2006, 2005, 2004, 2003 and 2002. See Note 6)

The following per share data and ratios have been derived from information provided in the financial statements.	For the Six Months Ended February 28, 2007 (Unaudited)	----- 2006	----- 2005	----- For the Year Ended February 28, 2004
<b>Per Share Operating Performance</b>				
Net asset value, beginning of period	\$ 9.93	\$ 10.23	\$ 9.91	\$ 9.91
Investment income -- net	.34+	.70+	.74+	.74+
Realized and unrealized gain (loss) -- net	.10	(.23)	.35	.35
Less dividends to Preferred Stock shareholders from investment income -- net	(.09)	(.17)	(.10)	(.10)
Total from investment operations	.35	.30	.99	.99
Less dividends to Common Stock shareholders from investment income -- net	(.26)	(.60)	(.67)	(.67)
Offering costs resulting from the issuance of Preferred Stock	--	--	--	--
Net asset value, end of period	\$ 10.02	\$ 9.93	\$ 10.23	\$ 10.23
Market price per share, end of period	\$ 9.94	\$ 9.66	\$ 10.15	\$ 10.15
<b>Total Investment Return++</b>				
Based on net asset value per share	3.61% <sup>@</sup>	3.27%	10.64%	10.64%
Based on market price per share	5.65% <sup>@</sup>	1.26%	16.97%	16.97%
<b>Ratios Based on Average Net Assets Applicable to Common Stock</b>				
Expenses, net of reimbursement and excluding interest expense and fees*	1.02% <sup>***</sup>	1.04%	1.02%	1.02%
Expenses, net of reimbursement*	1.71% <sup>***</sup>	1.60%	1.45%	1.45%
Total expenses*	1.71% <sup>***</sup>	1.60%	1.45%	1.45%
Total investment income -- net*	6.95% <sup>***</sup>	7.11%	7.38%	7.38%
Amount of dividends to Preferred Stock shareholders	1.91% <sup>***</sup>	1.72%	1.02%	1.02%

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Investment income -- net, to Common Stock shareholders	5.04%***	5.39%	6.36%	
=====				
Ratios Based on Average Net Assets Applicable to Preferred Stock				
Dividends to Preferred Stock shareholders	3.51%***	3.13%	1.90%	
=====				
Supplemental Data				
Net assets applicable to Common Stock, end of period (in thousands)	\$616,538	\$609,612	\$627,562	\$60
Preferred Stock outstanding at liquidation preference, end of period (in thousands)	\$334,000	\$334,000	\$334,000	\$33
Portfolio turnover	18%	56%	49%	
=====				
Leverage				
Asset coverage per \$1,000	\$ 2,846	\$ 2,825	\$ 2,879	\$
=====				
Dividends Per Share on Preferred Stock Outstanding				
Series A -- Investment income -- net	\$ 432	\$ 750	\$ 477	\$
Series B -- Investment income -- net	\$ 450	\$ 822	\$ 458	\$
Series C -- Investment income -- net	\$ 445	\$ 803	\$ 485	\$
Series D -- Investment income -- net	\$ 434	\$ 773	\$ 478	\$
Series E -- Investment income -- net	\$ 423	\$ 770	\$ 464	\$
Series F** -- Investment income -- net	\$ 434	\$ 781	\$ 485	\$

\* Do not reflect the effect of dividends to Preferred Stock shareholders.

\*\* Series F was issued on August 31, 2004.

\*\*\* Annualized.

+ Based on average shares outstanding.

See Notes to Financial Statements.

++ Total investment returns based on market value, which can be significantly greater or lesser than the net asset value, may result in substantially different returns. Total investment returns exclude the effects of sales charges.

+++ Amount is less than \$(.01) per share.

@ Aggregate total investment return.

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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Notes to Financial Statements (Unaudited)

1. Significant Accounting Policies:

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BlackRock MuniVest Fund, Inc. (the "Fund") is registered under the Investment Company Act of 1940, as amended, as a non-diversified, closed-end management investment company. The Fund's financial statements are prepared in conformity with U.S. generally accepted accounting principles, which may require the use of management accruals and estimates. Actual results may differ from these estimates. These unaudited financial statements reflect all adjustments, which are, in the opinion of management, necessary to present a fair statement of the results for the interim period. All such adjustments are of a normal, recurring nature. The Fund determines and makes available for publication the net asset value of its Common Stock on a daily basis. The Fund's Common Stock shares are listed on the American Stock Exchange under the symbol MVF. The following is a summary of significant accounting policies followed by the Fund.

(a) Valuation of investments -- Municipal bonds are traded primarily in the over-the-counter ("OTC") markets and are valued at the last available bid price in the OTC market or on the basis of values as obtained by a pricing service. Pricing services use valuation matrixes that incorporate both dealer-supplied valuations and valuation models. The procedures of the pricing service and its valuations are reviewed by the officers of the Fund under the general direction of the Board of Directors. Such valuations and procedures are reviewed periodically by the Board of Directors of the Fund. Financial futures contracts and options thereon, which are traded on exchanges, are valued at their closing prices as of the close of such exchanges. Options written or purchased are valued at the last sale price in the case of exchange-traded options. Options traded in the OTC market are valued at the last asked price (options written) or the last bid price (options purchased). Swap agreements are valued by quoted fair values received daily by the Fund's pricing service. Short-term investments with a remaining maturity of 60 days or less are valued at amortized cost, which approximates market value, under which method the investment is valued at cost and any premium or discount is amortized on a straight line basis to maturity. Investments in open-end investment companies are valued at their net asset value each business day. Securities and other assets for which market quotations are not readily available are valued at fair value as determined in good faith by or under the direction of the Board of Directors of the Fund.

(b) Derivative financial instruments -- The Fund may engage in various portfolio investment strategies both to increase the return of the Fund and to hedge, or protect, its exposure to interest rate movements and movements in the securities markets. Losses may arise due to changes in the value of the contract or if the counterparty does not perform under the contract.

- o Financial futures contracts -- The Fund may purchase or sell financial futures contracts and options on such financial futures contracts. Financial futures contracts are contracts for delayed delivery of securities at a specific future date and at a specific price or yield. Upon entering into a contract, the Fund deposits and maintains as collateral such initial margin as required by the exchange on which the transaction is effected. Pursuant to the contract, the Fund agrees to receive from or pay to the broker an amount of cash equal to the daily fluctuation in value of the contract. Such receipts or payments are known as variation margin and are recorded by the Fund as unrealized gains or losses. When the contract is closed, the Fund records a realized gain or loss equal to the difference between the value of the contract at the time it was opened and the value at the time it was closed.
- o Options -- The Fund may purchase and write call and put options. When the Fund writes an option, an amount equal to the premium received by the Fund is reflected as an asset and an equivalent liability. The amount of the liability is subsequently marked-to-market to reflect the current market value of the option written. When a security is purchased or sold through an exercise of an option, the related premium paid (or received) is added to (or deducted from) the basis of the security acquired or deducted from



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(or added to) the proceeds of the security sold. When an option expires (or the Fund enters into a closing transaction), the Fund realizes a gain or loss on the option to the extent of the premiums received or paid (or gain or loss to the extent the cost of the closing transaction exceeds the premium paid or received).

Written and purchased options are non-income producing investments.

- o Forward interest rate swaps -- The Fund may enter into forward interest rate swaps. In a forward interest rate swap, the Fund and the counterparty agree to make periodic net payments on a specified notional contract amount, commencing on a specified future effective date, unless terminated earlier. When the agreement is closed, the Fund records a realized gain or loss in an amount equal to the value of the agreement.
- o Swaps -- The Fund may enter into swap agreements, which are OTC contracts in which the Fund and a

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BLACKROCK MUNIVEST FUND, INC.

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### Notes to Financial Statements (continued)

counterparty agree to make periodic net payments on a specified notional amount. The net payments can be made for a set period of time or may be triggered by a predetermined credit event. The net periodic payments may be based on a fixed or variable interest rate; the change in market value of a specified security, basket of securities, or index; or the return generated by a security. These periodic payments received or made by the Fund are recorded in the accompanying Statement of Operations as realized gains or losses, respectively. Gains or losses are also realized upon termination of the swap agreements. Swaps are marked-to-market daily and changes in value are recorded as unrealized appreciation (depreciation). Risks include changes in the returns of the underlying instruments, failure of the counterparties to perform under the contracts' terms and the possible lack of liquidity with respect to the swap agreements.

(c) Municipal bonds held in trust -- The Fund invests in leveraged residual certificates ("TOB Residuals") issued by tender option bond trusts ("TOBs"). A TOB is established by a third party sponsor forming a special purpose entity, into which a Fund, or an agent on behalf of the Fund, transfers municipal securities. A TOB typically issues two classes of beneficial interests: short-term floating rate certificates, which are sold to third party investors, and residual certificates, which are generally issued to the Fund which made the transfer or to affiliates of the Fund. The transfer of the municipal securities to a TOB does not qualify for sale treatment under Statement of Financial Accounting Standards No. 140 "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities," therefore the municipal securities deposited into a TOB are presented in the Fund's schedule of investments and the proceeds from the transaction are reported as a liability for trust certificates of the Fund. Similarly, proceeds from residual certificates issued to affiliates, if any, from the transaction are included in the liability for trust certificates. Interest income from the underlying security is recorded by the Fund on an accrual basis. Interest expense incurred on the secured borrowing and other expenses related to remarketing, administration and trustee services to a TOB are reported as expenses of the Fund. The floating rate certificates have interest rates that generally reset weekly and their holders have the option to tender certificates to the TOB for redemption at par at each reset date. The residual interests held by the Fund include the right of the Fund (1) to cause the holders of a proportional share of the floating rate certificates to tender their certificates at par, and (2)

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to transfer a corresponding share of the municipal securities from the TOB to the Fund. At February 28, 2007, the aggregate value of the underlying municipal securities transferred to TOBs was \$209,925,502, the related liability for trust certificates was \$97,658,020 and the range of interest rates on the liability for trust certificates was 3.68% to 3.75%.

Financial transactions executed through TOBs generally will underperform the market for fixed rate municipal bonds in a rising interest rate environment, but tend to outperform the market for fixed rate bonds when interest rates decline or remain relatively stable. Should short-term interest rates rise, the Fund's investments in TOB Residuals likely will adversely affect the Fund's investment income -- net and distributions to shareholders. Fluctuations in the market value of municipal securities deposited into the TOB may adversely affect the Fund's net asset value per share.

While the Fund's investment policies and restrictions expressly permit investments in inverse floating rate securities such as TOB Residuals, they generally do not allow the Fund to borrow money for purposes of making investments. The Fund's management believes that the Fund's restrictions on borrowings do not apply to the secured borrowings deemed to have occurred for accounting purposes.

(d) Income taxes -- It is the Fund's policy to comply with the requirements of the Internal Revenue Code applicable to regulated investment companies and to distribute substantially all of its taxable income to its shareholders. Therefore, no federal income tax provision is required.

(e) Security transactions and investment income -- Security transactions are recorded on the dates the transactions are entered into (the trade dates). Realized gains and losses on security transactions are determined on the identified cost basis. Dividend income is recorded on the ex-dividend dates. Interest income is recognized on the accrual basis. The Fund amortizes all premiums and discounts on debt securities.

(f) Dividends and distributions -- Dividends from net investment income are declared and paid monthly. Distributions of capital gains are recorded on the ex-dividend dates.

(g) Offering costs -- Direct expenses relating to the public offering of the Fund's Preferred Stock were charged to capital.

(h) Recent accounting pronouncements -- In July 2006, the Financial Accounting Standards Board ("FASB") issued Interpretation No. 48 ("FIN 48"), "Accounting for Uncertainty in Income Taxes -- an interpretation of FASB Statement No. 109." FIN 48 prescribes the minimum recognition threshold a tax position must meet in connection with

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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### Notes to Financial Statements (continued)

accounting for uncertainties in income tax positions taken or expected to be taken by an entity including mutual funds before being measured and recognized in the financial statements. Adoption of FIN 48 is required for the last net asset value calculation in the first required financial statement reporting period for fiscal years beginning after December 15, 2006. The impact on the Fund's financial statements, if any, is currently being assessed.

In September 2006, Statement of Financial Accounting Standards No. 157, "Fair Value Measurements" ("FAS 157"), was issued and is effective for fiscal years

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beginning after November 15, 2007. FAS 157 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. At this time, management is evaluating the implications of FAS 157 and its impact on the Fund's financial statements, if any, has not been determined.

In addition, in February 2007, FASB issued "Statement of Financial Accounting Standards No. 159, The Fair Value Option for Financial Assets and Financial Liabilities" ("FAS 159"), which is effective for fiscal years beginning after November 15, 2007. Early adoption is permitted as of the beginning of a fiscal year that begins on or before November 15, 2007, provided the entity also elects to apply the provisions of FAS 157. FAS 159 permits entities to choose to measure many financial instruments and certain other items at fair value that are not currently required to be measured at fair value. FAS 159 also establishes presentation and disclosure requirements designed to facilitate comparisons between entities that choose different measurement attributes for similar types of assets and liabilities. At this time, management is evaluating the implications of FAS 159 and its impact on the Fund's financial statements, if any, has not been determined.

### 2. Investment Advisory Agreement and Transactions with Affiliates:

On September 29, 2006, BlackRock, Inc. and Merrill Lynch & Co., Inc. ("Merrill Lynch") combined Merrill Lynch's investment management business, Merrill Lynch Investment Managers, L.P. ("MLIM"), and its affiliates, including Fund Asset Management, L.P. ("FAM"), with BlackRock, Inc. to create a new independent company. Merrill Lynch has a 49.8% economic interest and a 45% voting interest in the combined company and The PNC Financial Services Group, Inc. has approximately a 34% economic and voting interest. The new company operates under the BlackRock name and is governed by a board of directors with a majority of independent members.

The Investment Advisory Agreement between the Fund and BlackRock Advisors, LLC (the "Manager"), an indirect, wholly owned subsidiary of BlackRock Inc. became effective on September 29, 2006. Prior to September 29, 2006, FAM was the Fund's manager. The general partner of FAM is Princeton Services, Inc. ("PSI"), an indirect, wholly owned subsidiary of Merrill Lynch, which is the limited partner.

The Manager is responsible for the management of the Fund's portfolio and provides the necessary personnel, facilities, equipment and certain other services necessary to the operations of the Fund. For such services, the Fund pays a monthly fee at an annual rate of .50% of the Fund's average daily net assets, including net assets acquired from the sale of Preferred Stock. The Manager (and formerly FAM) has agreed to reimburse its management fee by the amount of management fees the Fund pays to the Manager and/or FAM indirectly through its investment in the Merrill Lynch Institutional Tax-Exempt Fund. For the period September 1, 2006 to September 29, 2006, FAM reimbursed the Fund in the amount of \$1,469. For the period September 30, 2006 to February 28, 2007, the Manager reimbursed the Fund in the amount of \$8,125.

In addition, the Manager has entered into a Sub-Advisory Agreement with BlackRock Investment Management, LLC, an affiliate of the Manager, under which the Manager pays the Sub-Adviser for services it provides a monthly fee at an annual rate equal to a percentage of the management fee paid by the Fund to the Manager.

For the six months ended February 28, 2007, the Fund reimbursed FAM and the Manager \$1,447 and \$7,233, respectively, for certain accounting services.

Prior to September 29, 2006, certain officers and/or directors of the Fund were officers and/or directors of FAM, PSI, Merrill Lynch, and/or MLIM.

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Commencing September 29, 2006, certain officers and/or directors of the Fund are officers and/or directors of BlackRock, Inc. or its affiliates.

### 3. Investments:

Purchases and sales of investments, excluding short-term securities, for the six months ended February 28, 2007 were \$191,083,667 and \$196,835,344, respectively.

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Notes to Financial Statements (continued)

### 4. Capital Stock Transactions:

#### Common Stock

At February 28, 2007, the Fund had one class of shares of Common Stock, par value \$.10 per share, of which 150,000,000 shares were authorized.

Shares issued and outstanding for the six months ended February 28, 2007 and for the year ended August 31, 2006 increased by 112,154 and 71,644, respectively, as a result of dividend reinvestment.

#### Preferred Stock

Auction Market Preferred Stock are redeemable shares of Preferred Stock of the Fund with a liquidation preference of \$25,000 per share plus accrued and unpaid dividends, that entitle their holders to receive cash dividends at an annual rate that may vary for the successive dividend periods for each series. The Fund is authorized to issue 10,000,000 shares of Preferred Stock. The yields in effect at February 28, 2007 were as follows: Series A, 3.62%; Series B, 3.65%; Series C, 3.62%; Series D, 3.59%; Series E, 3.54%; and Series F, 3.55%.

The Fund pays commissions to certain broker-dealers at the end of each auction at an annual rate ranging from .25% to .375% calculated on the proceeds of each auction. For the six months ended February 28, 2007, Merrill Lynch, Pierce, Fenner & Smith Incorporated, an affiliate of the Manager, received \$162,501 as commissions.

### 5. Capital Loss Carryforward:

On August 31, 2006, the Fund had a net capital loss carryforward of \$17,328,178, all of which expires in 2009. This amount will be available to offset like amounts of any future taxable gains.

### 6. Restatement Information:

During the six months ended February 28, 2007, the Fund determined that the criteria for sale accounting in Statement of Financial Accounting Standards No. 140 had not been met for certain transfers of municipal bonds and that these transfers should have been accounted for as secured borrowings rather than as sales. Accordingly, the Fund has restated the Financial Highlights for the years ended August 31, 2006, 2005, 2004, 2003 and 2002 to give effect to recording the transfers of the municipal bonds as secured borrowings including recording interest on the bonds as interest income and interest on the secured borrowings as interest expense.

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Financial Highlights

For the Years Ended August 31, 2006, 2005, 2004, 2003 and 2002

Institutional	2006		2005		2004		2003
	Previously Reported	Restated	Previously Reported	Restated	Previously Reported	Restated	Previously Reported
Expenses, net of reimbursement..	1.04%	1.60%	1.02%	1.45%	.94%	1.23%	.95%
Expenses.....	1.04%	1.60%	1.02%	1.45%	.95%	1.23%	.96%
Portfolio turnover.....	63.00%	56%	59.14%	49%	45.33%	40%	44.30%

\* Do not reflect the effect of dividends to Preferred Stock shareholders.

BLACKROCK MUNIVEST FUND, INC.

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Notes to Financial Statements (concluded)

While the Statements of Net Assets as of August 31, 2006, 2005, 2004, 2003 and 2002, not presented herein, have not been reissued to give effect to the restatement, the principal effects of the restatement would be to increase investments and liability for trust certificates by corresponding amounts at each year, with no effect on previously reported net assets. The Statements of Operations for the years ended August 31, 2006, 2005, 2004, 2003 and 2002, not presented herein, have not been reissued to give effect to the restatement. However, the principal effects of the restatement would be to increase interest income and interest expense and fees by corresponding amounts each year, and, where applicable, to revise realized gain on investments -- net, and the change in unrealized appreciation/depreciation on investments -- net, by corresponding and offsetting amounts. The Statements of Changes in Net Assets for the years ended August 31, 2006, 2005, 2004, 2003 and 2002, not presented herein, have not been reissued to give effect to the restatement, but the principal effects of a restatement, where applicable, would be to revise previously reported realized gain (loss) -- net, and change in unrealized appreciation/depreciation -- net, by corresponding and offsetting amounts.

7. Subsequent Event:

The Fund paid a tax-exempt income dividend to holders of Common Stock in the amount of \$.043000 per share on April 2, 2007 to shareholders of record on March 15, 2007.

Dividend Policy

The Fund's dividend policy is to distribute all or a portion of its net investment income to its shareholders on a monthly basis. In order to provide shareholders with a more stable level of dividend distributions, the Fund may at times pay out less than the entire amount of net investment income earned in any particular month and may at times in any particular month pay out such accumulated but undistributed income in addition to net investment income earned in that month. As a result, the dividends paid by the Fund for any particular month may be more or less than the amount of net investment income earned by the Fund during such month. The Fund's current accumulated but undistributed net

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investment income, if any, is disclosed in the Statement of Net Assets, which comprises part of the financial information included in this report.

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BLACKROCK MUNIVEST FUND, INC.

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Officers and Directors

Robert C. Doll, Jr., President and Director  
Ronald W. Forbes, Director  
Cynthia A. Montgomery, Director  
Jean Margo Reid, Director  
Roscoe S. Suddarth, Director  
Richard R. West, Director  
Donald C. Burke, Vice President and Treasurer  
John M. Loffredo, Senior Vice President  
Fred K. Stuebe, Vice President  
Jeffrey Hiller, Fund Chief Compliance Officer  
Alice A. Pellegrino, Secretary

Custodian

The Bank of New York  
100 Church Street  
New York, NY 10286

Transfer Agents

Common Stock:

The Bank of New York  
101 Barclay Street -- 11 East  
New York, NY 10286

Preferred Stock:

The Bank of New York  
101 Barclay Street -- 7 West  
New York, NY 10286

Amex Symbol

MVF

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Effective January 1, 2007, Edward D. Zinbarg retired as a Director of BlackRock MuniVest Fund, Inc. The Fund's Board of Directors wishes Mr. Zinbarg well in his retirement.  
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Effective April 13, 2007, Jeffrey Hiller resigned his position as Chief Compliance Officer of the Fund. Also effective April 13, 2007, Karen Clark was appointed Chief Compliance Officer of the Fund. Ms. Clark has been a Managing Director of BlackRock, Inc. since 2007. She was a Director thereof from 2005 to 2007. Prior to that, Ms. Clark was a principal and senior compliance officer at State Street Global Advisors from 2001 to 2005. Ms. Clark was a principal consultant with PricewaterhouseCoopers, LLP from 1998 to 2001. From 1993 to 1998, Ms. Clark was Branch Chief, Division of Investment Management and Office of Compliance Examinations, with the U.S. Securities and Exchange Commission.  
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### Availability of Quarterly Schedule of Investments

The Fund files its complete schedule of portfolio holdings with the Securities and Exchange Commission ("SEC") for the first and third quarters of each fiscal year on Form N-Q. The Fund's Forms N-Q are available on the SEC's Web site at <http://www.sec.gov>. The Fund's Forms N-Q may also be reviewed and copied at the SEC's Public Reference Room in Washington, DC. Information on the operation of the Public Reference Room may be obtained by calling 1-800-SEC-0330.

BLACKROCK MUNIVEST FUND, INC.

FEBRUARY 28, 2007

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### Electronic Delivery

Electronic copies of most financial reports and prospectuses are available on the Fund's Web site. Shareholders can sign up for e-mail notifications of quarterly statements, annual and semi-annual reports and prospectuses by enrolling in the Fund's electronic delivery program.

To enroll:

Shareholders Who Hold Accounts with Investment Advisers, Banks or Brokerages:

Please contact your financial advisor. Please note that not all investment advisers, banks or brokerages may offer this service.

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BLACKROCK MUNIVEST FUND, INC.

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### BlackRock Privacy Principles

BlackRock is committed to maintaining the privacy of its current and former fund investors and individual clients (collectively, "Clients") and to safeguarding their nonpublic personal information. The following information is provided to help you understand what personal information BlackRock collects, how we protect that information and why in certain cases we share such information with select parties.

If you are located in a jurisdiction where specific laws, rules or regulations require BlackRock to provide you with additional or different privacy-related rights beyond what is set forth below, then BlackRock will comply with those specific laws, rules or regulations.

BlackRock obtains or verifies personal nonpublic information from and about you from different sources, including the following: (i) information we receive from you or, if applicable, your financial intermediary, on applications, forms or other documents; (ii) information about your transactions with us, our affiliates, or others; (iii) information we receive from a consumer reporting agency; and (iv) from visits to our Web sites.

BlackRock does not sell or disclose to nonaffiliated third parties any nonpublic personal information about its Clients, except as permitted by law or as is necessary to service Client accounts. These nonaffiliated third parties are required to protect the confidentiality and security of this information and to use it only for its intended purpose.

We may share information with our affiliates to service your account or to provide you with information about other BlackRock products or services that may be of interest to you. In addition, BlackRock restricts access to nonpublic

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personal information about its Clients to those BlackRock employees with a legitimate business need for the information. BlackRock maintains physical, electronic and procedural safeguards that are designed to protect the nonpublic personal information of its Clients, including procedures relating to the proper storage and disposal of such information.

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BlackRock MuniVest Fund, Inc. seeks to provide shareholders with as high a level of current income exempt from federal income taxes as is consistent with its investment policies and prudent investment management by investing primarily in a portfolio of long-term, investment grade municipal obligations, the interest on which is exempt from federal income taxes in the opinion of bond counsel to the issuer.

This report, including the financial information herein, is transmitted to the shareholders of BlackRock MuniVest Fund, Inc. for their information. It is not a prospectus, circular or representation intended for use in the purchase of shares of the Fund or any securities mentioned in the report. Past performance results shown in this report should not be considered a representation of future performance. The Fund has leveraged its Common Stock and intends to remain leveraged by issuing Preferred Stock to provide the Common Stock shareholders with a potentially higher rate of return. Leverage creates risks for Common Stock shareholders, including the likelihood of greater volatility of net asset value and market price of shares of the Common Stock, and the risk that fluctuations in the short-term dividend rates of the Preferred Stock may affect the yield to Common Stock shareholders. Statements and other information herein are as dated and are subject to change.

A description of the policies and procedures that the Fund uses to determine how to vote proxies relating to portfolio securities is available (1) without charge, upon request, by calling toll-free 1-800-441-7762; (2) at [www.blackrock.com](http://www.blackrock.com); and (3) on the Securities and Exchange Commission's Web site at <http://www.sec.gov>. Information about how the Fund voted proxies relating to securities held in the Fund's portfolio during the most recent 12-month period ended June 30 is available (1) at [www.blackrock.com](http://www.blackrock.com) and (2) on the Securities and Exchange Commission's Web site at <http://www.sec.gov>.

BlackRock MuniVest Fund, Inc.  
P.O. Box 9011  
Princeton, NJ 08543-9011

BLACKROCK

#10787-2/07

Item 2 - Code of Ethics - Not Applicable to this semi-annual report

Item 3 - Audit Committee Financial Expert - Not Applicable to this semi-annual report

Item 4 - Principal Accountant Fees and Services - Not Applicable to this semi-annual report

Item 5 - Audit Committee of Listed Registrants - Not Applicable to this semi-annual report

Item 6 - Schedule of Investments - Not Applicable



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Item 7 - Disclosure of Proxy Voting Policies and Procedures for Closed-End Management Investment Companies - Not Applicable to this semi-annual report

Item 8 - Portfolio Managers of Closed-End Management Investment Companies - as of February 28, 2007.

(a)(1) BlackRock MuniVest Fund, Inc. is managed by a team of investment professionals comprised of Fred K. Stuebe, Director at BlackRock, Theodore R. Jaeckel, Jr., CFA, Managing Director at BlackRock, and Walter O'Connor, Managing Director at BlackRock. Each is a member of BlackRock's municipal tax-exempt management group. Mr. Jaeckel and Mr. O'Connor are responsible for setting the Fund's overall investment strategy and overseeing the management of the Fund. Mr. Stuebe is the Fund's lead portfolio manager and is responsible for the day-to-day management of the Fund's portfolio and the selection of its investments. Messrs. Jaeckel and O'Connor have been members of the Fund's management team since 2006 and Mr. Stuebe has been the Fund's portfolio manager since 1989.

Mr. Jaeckel joined BlackRock in 2006. Prior to joining BlackRock, he was a Managing Director (Municipal Tax-Exempt Fund Management) of Merrill Lynch Investment Managers, L.P. ("MLIM") from 2005 to 2006 and a Director of MLIM from 1997 to 2005. He has been a portfolio manager with BlackRock or MLIM since 1991.

Mr. O'Connor joined BlackRock in 2006. Prior to joining BlackRock, he was a Managing Director (Municipal Tax-Exempt Fund Management) of MLIM from 2003 to 2006 and was a Director of MLIM from 1997 to 2002. He has been a portfolio manager with BlackRock or MLIM since 1991.

Mr. Stuebe joined BlackRock in 2006. Prior to joining BlackRock, he was a Director (Municipal Tax-Exempt Fund Management) of MLIM from 2000 to 2006. He has 25 years of experience investing in Municipal Bonds as a portfolio manager on behalf of registered investment companies.

(a)(2) As of February 28, 2007:

(i) Name of Portfolio Manager	(ii) Number of Other Accounts Managed and Assets by Account Type			(iii) Number of Other Accounts for Which Advisory Performance-Base	
	Other Registered Investment Companies	Other Pooled Investment Vehicles	Other Accounts	Other Registered Investment Companies	Other Pooled Investment Vehicles
Fred Stuebe	7	0	0	0	0
	\$ 2,303,435,415	\$ 0	\$ 0	\$ 0	\$ 0
Theodore R. Jaeckel, Jr.	80	0	0	0	1
	\$28,818,208,939	\$ 0	\$ 0	\$ 0	\$28,165,980
Walter O'Connor	80	0	0	0	0
	\$28,818,208,939	\$ 0	\$ 0	\$ 0	\$ 0

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### (iv) Potential Material Conflicts of Interest

BlackRock has built a professional working environment, firm-wide compliance culture and compliance procedures and systems designed to protect against potential incentives that may favor one account over another. BlackRock has adopted policies and procedures that address the allocation of investment opportunities, execution of portfolio transactions, personal trading by employees and other potential conflicts of interest that are designed to ensure that all client accounts are treated equitably over time. Nevertheless, BlackRock furnishes investment management and advisory services to numerous clients in addition to the Fund, and BlackRock may, consistent with applicable law, make investment recommendations to other clients or accounts (including accounts which are hedge funds or have performance or higher fees paid to BlackRock, or in which portfolio managers have a personal interest in the receipt of such fees), which may be the same as or different from those made to the Fund. In addition, BlackRock, its affiliates and any officer, director, stockholder or employee may or may not have an interest in the securities whose purchase and sale BlackRock recommends to the Fund. BlackRock, or any of its affiliates, or any officer, director, stockholder, employee or any member of their families may take different actions than those recommended to the Fund by BlackRock with respect to the same securities. Moreover, BlackRock may refrain from rendering any advice or services concerning securities of companies of which any of BlackRock's (or its affiliates') officers, directors or employees are directors or officers, or companies as to which BlackRock or any of its affiliates or the officers, directors and employees of any of them has any substantial economic interest or possesses material non-public information. Each portfolio manager also may manage accounts whose investment strategies may at times be opposed to the strategy utilized for the Fund. In this connection, it should be noted that certain portfolio managers currently manage certain accounts that are subject to performance fees. In addition, certain portfolio managers assist in managing certain hedge funds and may be entitled to receive a portion of any incentive fees earned on such funds and a portion of such incentive fees may be voluntarily or involuntarily deferred. Additional portfolio managers may in the future manage other such accounts or funds and may be entitled to receive incentive fees.

As a fiduciary, BlackRock owes a duty of loyalty to its clients and must treat each client fairly. When BlackRock purchases or sells securities for more than one account, the trades must be allocated in a manner consistent with its

fiduciary duties. BlackRock attempts to allocate investments in a fair and equitable manner among client accounts, with no account receiving preferential treatment. To this end, BlackRock has adopted a policy that is intended to ensure that investment opportunities are allocated fairly and equitably among client accounts over time. This policy also seeks to achieve reasonable efficiency in client transactions and provide BlackRock with sufficient flexibility to allocate investments in a manner that is consistent with the particular investment discipline and client base.

(a) (3) As of February 28, 2007:

#### Compensation Program

The elements of total compensation for portfolio managers on BlackRock's municipal team include a fixed base salary, annual performance-based cash and stock compensation (cash and stock bonus) and other benefits. BlackRock has balanced these components of pay to provide these portfolio managers with a powerful incentive to achieve consistently superior investment performance. By design, compensation levels for these portfolio managers fluctuate--both up and down--with the relative investment performance of the portfolios that they

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manage.

### Base compensation

Like that of many asset management firms, base salaries represent a relatively small portion of a portfolio manager's total compensation. This approach serves to enhance the motivational value of the performance-based (and therefore variable) compensation elements of the compensation program.

### Performance-Based Compensation

BlackRock believes that the best interests of investors are served by recruiting and retaining exceptional asset management talent and managing their compensation within a consistent and disciplined framework that emphasizes pay for performance in the context of an intensely competitive market for talent. To that end, BlackRock and its affiliates portfolio manager incentive compensation is based on a formulaic compensation program. BlackRock's formulaic portfolio manager compensation program includes: investment performance relative to a subset of general, leveraged municipal debt funds over 1-, 3- and 5-year performance periods and a measure of operational efficiency. Portfolio managers are compensated based on the pre-tax performance of the products they manage. If a portfolio manager's tenure is less than 5 years, performance periods will reflect time in position. Portfolio managers are compensated based on products they manage. A discretionary element of portfolio manager compensation may include consideration of: financial results, expense control, profit margins, strategic planning and implementation, quality of client service, market share, corporate reputation, capital allocation, compliance and risk control, leadership, workforce diversity, supervision, technology and innovation. All factors are considered collectively by BlackRock management.

### Long-Term Retention and Incentive Plan (LTIP)

The LTIP is a long-term incentive plan that seeks to reward certain key employees. The plan provides for the grant of awards that are expressed as an amount of cash that, if properly vested and subject to the attainment of certain performance goals, will be settled in cash and/or in BlackRock, Inc. common stock.

### Cash Bonus

Performance-based compensation is distributed to portfolio managers in a combination of cash and stock. Typically, the cash bonus, when combined with base salary, represents more than 60% of total compensation for portfolio managers.

### Stock Bonus

A portion of the dollar value of the total annual performance-based bonus is paid in restricted shares of BlackRock stock. Paying a portion of annual bonuses in stock puts compensation earned by a portfolio manager for a given year "at risk" based on the company's ability to sustain and improve its performance over future periods. The ultimate value of stock bonuses is dependent on future BlackRock stock price performance. As such, the stock bonus aligns each portfolio manager's financial interests with those of the BlackRock shareholders and encourages a balance between short-term goals and long-term strategic objectives. Management strongly believes that providing a significant portion of competitive performance-based compensation in stock is in the best interests of investors and shareholders. This approach ensures that portfolio managers participate as shareholders in both the "downside risk" and "upside opportunity" of the company's performance. Portfolio managers therefore have a

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direct incentive to protect BlackRock's reputation for integrity.

### Other Compensation Programs

Portfolio managers who meet relative investment performance and financial management objectives during a performance year are eligible to participate in a deferred cash program. Awards under this program are in the form of deferred cash that may be benchmarked to a menu of BlackRock mutual funds (including their own fund) during a five-year vesting period. The deferred cash program aligns the interests of participating portfolio managers with the investment results of BlackRock products and promotes continuity of successful portfolio management teams.

### Other Benefits

Portfolio managers are also eligible to participate in broad-based plans offered generally to employees of BlackRock and its affiliates, including broad-based retirement, 401(k), health, and other employee benefit plans.

- (a) (4) Beneficial Ownership of Securities. As of February 28, 2007, Mr. Stuebe beneficially owns stock issued by the Fund valued in the range \$100,001-\$500,000. As of February 28, 2007, neither of Messrs. Jaeckel or O'Connor beneficially owns any stock issued by the Fund.

Item 9 - Purchases of Equity Securities by Closed-End Management Investment Company and Affiliated Purchasers - Not Applicable

Item 10 - Submission of Matters to a Vote of Security Holders - Not Applicable

Item 11 - Controls and Procedures

- 11(a) - The Registrant's principal executive and principal financial officers have evaluated the Registrant's disclosure controls and procedures, including internal control over financial reporting, within 90 days of this filing. Such principal officers have concluded that as of April, 2007 the Registrant's disclosure controls and procedures were effective in design and operation to reasonably ensure that

information required to be disclosed by the Registrant in this Form N-CSR was recorded, processed, summarized, and reported within the required time periods, and were sufficient to form the basis of the certifications required by Rule 30a-2 of the Investment Company Act of 1940, as amended. Prior to reaching that conclusion, such principal officers had become aware of matters relating to the Registrant's participation in certain inverse floater structures that necessitated adjustments to financial information included in Item 1 of this filing. As a result, management of the Registrant had reevaluated certain disclosure controls and procedures determined not to be effective, as discussed more fully below.

Management of the Registrant is responsible for establishing and maintaining effective internal control over financial reporting. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of controls. The Registrant's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles. Such internal control includes

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policies and procedures that provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of a registrant's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A control deficiency exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. A significant deficiency is a control deficiency, or combination of control deficiencies, that adversely affects the Registrant's ability to initiate, authorize, record, process or report financial data reliably in accordance with generally accepted accounting principles such that there is more than a remote likelihood that a misstatement of the Registrant's annual or interim financial statements that is more than inconsequential will not be prevented or detected. A material weakness is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected.

Prior to the filing of the Registrant's Form N-CSR, the Registrant identified the following control deficiency, that was determined to be a material weakness, as defined above, in the Registrant's internal control over financial reporting at February 28, 2007. The Registrant's controls related to the review and analysis of relevant terms and conditions of transfers of certain assets pertaining to inverse floater structures were not operating effectively to appropriately determine whether the transfers of assets qualified for sale accounting under the provisions of Statement of Financial Accounting Standards No. 140, "Accounting for Transfers and Servicing of Financial Assets and Extinguishments of Liabilities" ("SFAS 140"). As a result, these controls did not detect that certain transfers were not appropriately recorded as borrowings. Accordingly, the Registrant's financial statements as of and for the period ended February 28, 2007, including prior periods where applicable, were adjusted prior to being issued to appropriately reflect transfers of such securities as secured borrowings and to report the related income and expense. These adjustments had no impact on net assets, net asset value per share or total return.

Prior to the evaluation of the design and operation of the Registrant's disclosure controls and procedures at April, 2007, the Registrant's disclosure controls and procedures were modified to enhance the review and analysis of the relevant terms and conditions of transfers of securities in connection with inverse floater structures in light of SFAS 140.

- 11(b) - There have been no changes in the Registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the Investment Company Act of 1940, as amended) that occurred during the second half of the Registrant's fiscal year that have materially affected, or are reasonably likely to materially affect, the Registrant's internal

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control over financial reporting. However, as discussed above, as of April 2007, the Registrant has enhanced controls related to the application of SFAS 140.

Item 12 - Exhibits attached hereto

12(a) (1) - Code of Ethics - Not Applicable to this semi-annual report

12(a) (2) - Certifications - Attached hereto

12(a) (3) - Not Applicable

12(b) - 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/ Robert C. Doll, Jr.

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Robert C. Doll, Jr.,  
Chief Executive Officer of  
BlackRock MuniVest Fund, Inc.

Date: April 23, 2007

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/ Robert C. Doll, Jr.

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Robert C. Doll, Jr.,  
Chief Executive Officer of  
BlackRock MuniVest Fund, Inc.

Date: April 23, 2007

By: /s/ Donald C. Burke

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Donald C. Burke,  
Chief Financial Officer of  
BlackRock MuniVest Fund, Inc.

Date: April 23, 2007