

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND
Form N-Q
July 26, 2016

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM N-Q

**QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED
MANAGEMENT INVESTMENT COMPANY**

Investment Company Act file number: 811-08349

Name of Fund: BlackRock MuniHoldings Investment Quality Fund (MFL)

Fund Address: 100 Bellevue Parkway, Wilmington, DE 19809

Name and address of agent for service: John M. Perlowski, Chief Executive Officer, BlackRock

MuniHoldings Investment Quality Fund, 55 East 52nd Street, New York, NY 10055

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

Date of fiscal year end: 08/31/2016

Date of reporting period: 05/31/2016

Item 1 Schedule of Investments

Schedule of Investments May 31, 2016 (Unaudited)

BlackRock MuniHoldings Investment Quality Fund (MFL)

(Percentages shown are based on Net Assets)

| | Par | |
|--|--------------|---------------|
| | (000) | Value |
| Municipal Bonds | | |
| Alabama 3.4% | | |
| City of Birmingham Alabama Special Care Facilities Financing Authority, RB, Children's Hospital (AGC) (a): | | |
| 6.00%, 6/01/19 | \$ 10,995 | \$ 12,602,909 |
| 6.13%, 6/01/19 | 4,980 | 5,726,601 |
| City of Selma Alabama IDB, RB, Gulf Opportunity Zone, International Paper Co. Project, Series A, 5.38%, 12/01/35 | 1,745 | 1,948,066 |
| | | 20,277,576 |
| California 24.7% | | |
| California Educational Facilities Authority, RB, University of Southern California, Series A, 5.25%, 10/01/38 | | |
| | 8,920 | 9,825,826 |
| California Health Facilities Financing Authority, RB, Sutter Health, Series B, 6.00%, 8/15/42 | 5,370 | 6,460,701 |
| California State University, Refunding RB, Series A, Systemwide (AGM) : | | |
| 5.00%, 11/01/32 | 4,930 | 5,116,847 |
| 4.00%, 11/01/35 | 8,670 | 9,741,005 |
| City & County of San Francisco California Airports Commission, Refunding ARB, AMT, Series A: | | |
| 2nd, 5.50%, 5/01/28 | 3,330 | 4,029,866 |
| 2nd, 5.25%, 5/01/33 | 2,600 | 3,047,902 |
| 5.00%, 5/01/44 | 3,430 | 3,912,738 |
| City of Los Angeles California Department of Water & Power, RB, Power System, Sub-Series A-1, 5.25%, 7/01/38 | | |
| | 5,000 | 5,432,700 |
| City of Manteca California Financing Authority, RB, Manteca Sewer (AGC): | | |
| 5.63%, 12/01/33 | 2,450 | 2,815,859 |
| 5.75%, 12/01/36 | 3,285 | 3,770,096 |
| City of San Jose California, Refunding ARB, Series A-1, AMT, 5.75%, 3/01/34 | 4,450 | 5,239,341 |
| County of Sacramento California, ARB, Senior Series A (AGC), 5.50%, 7/01/41 | 5,600 | 6,113,408 |
| Kern Community College District, GO, Safety, Repair & Improvement, Series C, 5.50%, 11/01/33 | 4,365 | 5,502,301 |
| | Par | |
| | (000) | Value |
| Municipal Bonds | | |
| California (continued) | | |
| Los Angeles Community College District | | |
| California, GO: | | |
| Election of 2001, Series A (NPFGC), | | |
| 5.00%, 8/01/17 (a) | \$ 9,500 | \$ 9,984,975 |
| Election of 2008, Series C, 5.25%, 8/01/39 | 3,375 | 3,931,571 |
| Los Angeles Municipal Improvement Corp., Refunding LRB, Real Property, Series B (AGC), | | |
| 5.50%, 4/01/19 (a) | 2,980 | 3,333,458 |
| Redondo Beach Unified School District, GO, Election of 2008, Series E, 5.50%, 8/01/21 (a) | | |
| | 4,110 | 5,000,760 |
| San Diego Public Facilities Financing Authority Water, Refunding RB, Series B (AGC), | | |
| 5.38%, 8/01/19 (a) | 4,690 | 5,306,876 |
| State of California, GO, Various Purposes (AGC), 5.50%, 11/01/39 | | |
| | 15,000 | 17,239,800 |
| State of California Public Works Board, LRB, Various Capital Projects, Series I: | | |
| 5.50%, 11/01/30 | 4,500 | 5,647,545 |
| 5.50%, 11/01/31 | 2,615 | 3,273,588 |
| 5.50%, 11/01/33 | 2,000 | 2,505,280 |
| State of California Public Works Board, RB, Department of Corrections & Rehabilitation, Series F, | | |
| 5.25%, 9/01/33 | 2,240 | 2,749,331 |
| Township of Washington California Health Care District, GO, Election of 2004, Series B, | | |
| 5.50%, 8/01/40 | 1,685 | 2,063,232 |
| University of California, Refunding RB, Regents of the University of California Medical Center | | |
| Pooled Revenue, Series J, 5.25%, 5/15/38 | 12,250 | 14,757,207 |
| | | 146,802,213 |
| Colorado 2.1% | | |
| City & County of Denver Colorado Airport System, ARB, Series A, AMT: | | |
| 5.50%, 11/15/28 | 2,700 | 3,230,577 |

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| | | |
|-----------------|-------|-----------|
| 5.50%, 11/15/30 | 1,040 | 1,238,734 |
| 5.50%, 11/15/31 | 1,250 | 1,485,837 |

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2016

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

| | Par | |
|--|------------|--------------|
| | (000) | Value |
| Municipal Bonds | | |
| Colorado (continued) | | |
| Colorado Health Facilities Authority, RB, Hospital, NCMC, Inc. Project, Series B (AGM), 6.00%, 5/15/19 (a) | \$ 5,925 | \$ 6,792,183 |
| | | 12,747,331 |
| District of Columbia 0.6% | | |
| District of Columbia Water & Sewer Authority, Refunding RB, Series A, 6.00%, 10/01/18 (a) | 3,380 | 3,783,775 |
| Florida 7.8% | | |
| City of Jacksonville Florida, Refunding RB, Series A, 5.25%, 10/01/33 | 1,250 | 1,523,875 |
| County of Hillsborough Florida Aviation Authority, Refunding ARB, Tampa International Airport, Series A, AMT: | | |
| 5.50%, 10/01/29 | 5,360 | 6,383,653 |
| 5.25%, 10/01/30 | 3,255 | 3,809,652 |
| County of Lee Florida, Refunding ARB, Series A, AMT, 5.38%, 10/01/32 | 7,100 | 8,168,976 |
| County of Lee Florida HFA, RB, S/F Housing, Multi-County Program, Series A-2, AMT (Ginnie Mae), 6.00%, 9/01/40 | 820 | 838,598 |
| County of Manatee Florida HFA, RB, S/F Housing, Series A, AMT (Ginnie Mae, Fannie Mae & Freddie Mac), 5.90%, 9/01/40 | 325 | 330,064 |
| County of Miami-Dade Florida, RB, Seaport: | | |
| Series A, 5.38%, 10/01/33 | 3,145 | 3,665,906 |
| Series B, AMT, 6.25%, 10/01/38 | 1,405 | 1,764,540 |
| Series B, AMT, 6.00%, 10/01/42 | 1,885 | 2,283,696 |
| County of Miami-Dade Florida, Refunding RB, Water & Sewer System, Series B, 5.25%, 10/01/29 | 2,870 | 3,494,455 |
| County of Miami-Dade Florida Aviation, Refunding ARB, Miami International Airport, AMT, Series A (AGM): | | |
| 5.00%, 10/01/31 | 5,465 | 6,306,063 |
| 5.50%, 10/01/41 | 3,500 | 3,824,415 |
| | Par | |
| Municipal Bonds | | |
| Florida (continued) | | |
| Reedy Creek Improvement District, GO, Series A, 5.25%, 6/01/32 | \$ 3,225 | \$ 3,873,805 |
| | | 46,267,698 |
| Hawaii 1.9% | | |
| State of Hawaii, Department of Transportation, COP, AMT: | | |
| 5.25%, 8/01/25 | 1,350 | 1,617,638 |
| 5.25%, 8/01/26 | 2,500 | 2,982,075 |
| State of Hawaii, Department of Transportation, RB, Series A, AMT, 5.00%, 7/01/45 | 5,985 | 6,873,952 |
| | | 11,473,665 |
| Illinois 22.8% | | |
| City of Chicago Illinois, GARB, O Hare International Airport, 3rd Lien: | | |
| Series A, 5.75%, 1/01/39 | 7,395 | 8,621,239 |
| Series C, 6.50%, 1/01/41 | 16,800 | 20,357,400 |
| City of Chicago Illinois Midway International Airport, Refunding ARB, 2nd Lien, Series A, AMT: | | |
| 5.50%, 1/01/30 | 6,500 | 7,663,825 |
| 5.50%, 1/01/32 | 6,275 | 7,340,432 |
| City of Chicago Illinois Midway International Airport, Refunding GARB, 2nd Lien, Series A, 5.00%, 1/01/41 | 8,020 | 9,007,984 |
| City of Chicago Illinois Transit Authority, RB: | | |
| Federal Transit Administration, Section 5309, Series A (AGC), 6.00%, 12/01/18 (a) | 6,315 | 7,110,753 |
| Sales Tax Receipts, 5.25%, 12/01/36 | 1,960 | 2,164,291 |
| Sales Tax Receipts, 5.25%, 12/01/40 | 10,960 | 12,021,147 |
| City of Chicago Illinois Transit Authority, Refunding RB, Federal Transit Administration, Section 5309 (AGM), 5.00%, 6/01/28 | 7,735 | 8,354,960 |
| County of Cook Illinois Community College District No. 508, GO, City College of Chicago, 5.50%, 12/01/38 | 5,395 | 6,162,493 |
| Illinois Finance Authority, RB, Carle Foundation, Series A, 6.00%, 8/15/41 | 4,000 | 4,758,800 |

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Railsplitter Tobacco Settlement Authority, RB:

| | | |
|----------------|-------|-----------|
| 5.50%, 6/01/23 | 4,365 | 5,115,387 |
| 6.00%, 6/01/28 | 1,245 | 1,483,019 |

Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

| | Par | |
|--|----------|--------------|
| | (000) | Value |
| Municipal Bonds | | |
| Illinois (continued) | | |
| State of Illinois, GO: | | |
| 5.25%, 2/01/31 | \$ 2,700 | \$ 2,967,543 |
| 5.25%, 2/01/32 | 5,525 | 6,060,925 |
| 5.50%, 7/01/33 | 7,820 | 8,659,008 |
| 5.50%, 7/01/38 | 1,295 | 1,429,706 |
| 5.00%, 2/01/39 | 5,000 | 5,313,500 |
| State of Illinois Finance Authority, RB, University of Chicago, Series B, 5.50%, 7/01/18 (a) | 10,000 | 10,964,700 |
| | | 135,557,112 |
| Indiana 3.5% | | |
| Indiana Finance Authority, RB, Private Activity Bond, Ohio River Bridges, Series A, AMT, 5.00%, 7/01/40 | 1,240 | 1,358,209 |
| Indiana Municipal Power Agency, Refunding RB, Series A: | | |
| 5.25%, 1/01/32 | 1,500 | 1,792,020 |
| 5.25%, 1/01/33 | 1,500 | 1,786,605 |
| Indianapolis Local Public Improvement Bond Bank, Refunding RB, Waterworks Project, Series A (AGC), 5.50%, 1/01/38 | 14,105 | 15,773,481 |
| | | 20,710,315 |
| Louisiana 0.9% | | |
| City of New Orleans Louisiana Aviation Board, Refunding GARB, Restructuring (AGC): | | |
| Series A-1, 6.00%, 1/01/23 | 500 | 559,505 |
| Series A-2, 6.00%, 1/01/23 | 720 | 802,562 |
| Tobacco Settlement Financing Corp., Refunding RB, Asset-Backed, Series A, 5.50%, 5/15/29 | 3,735 | 4,111,712 |
| | | 5,473,779 |
| Massachusetts 0.2% | | |
| Massachusetts Educational Financing Authority, RB, Education Loan, Issue I, AMT, 5.00%, 1/01/27 | 1,000 | 1,167,630 |
| Michigan 3.5% | | |
| City of Detroit Michigan Water Supply System, RB, 2nd Lien, Series B (AGM), 6.25%, 7/01/36 | 6,320 | 7,109,052 |
| Hudsonville Public Schools, GO, School Building & Site (Q-SBLF), 5.25%, 5/01/41 | 6,015 | 6,960,678 |
| | Par | |
| | (000) | Value |
| Municipal Bonds | | |
| Michigan (continued) | | |
| Royal Oak Hospital Finance Authority Michigan, Refunding RB, William Beaumont Hospital, Series V, 8.25%, 9/01/18 (a) | \$ 5,780 | \$ 6,733,874 |
| | | 20,803,604 |
| Minnesota 1.6% | | |
| City of Minneapolis Minnesota, Refunding RB, Fairview Health Services, Series B (AGC), 6.50%, 11/15/38 | 8,375 | 9,395,410 |
| Mississippi 2.8% | | |
| Mississippi Development Bank, RB, Jackson Water & Sewer System Project (AGM): | | |
| 6.88%, 12/01/40 | 6,405 | 8,603,132 |
| Special Obligation, 6.75%, 12/01/31 | 3,775 | 5,037,737 |
| Special Obligation, 6.75%, 12/01/33 | 2,350 | 3,136,075 |
| | | 16,776,944 |
| Nevada 5.3% | | |
| County of Clark Nevada, ARB, Las Vegas-McCarran International Airport, Series A (AGM), 5.25%, 7/01/39 | 11,175 | 12,540,026 |
| County of Clark Nevada, GO, Limited Tax, 5.00%, 6/01/38 | 11,245 | 12,083,540 |
| County of Clark Nevada Water Reclamation District, GO, Series A, 5.25%, 7/01/34 | 5,850 | 6,577,389 |
| | | 31,200,955 |

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| New Jersey 7.2% | | |
|--|-------|-----------|
| New Jersey EDA, RB: | | |
| Goethals Bridge Replacement Project, Private Activity Bond, AMT, 5.38%, 1/01/43 | 7,000 | 8,068,690 |
| Goethals Bridge Replacement Project, Private Activity Bond, AMT (AGM), 5.00%, 1/01/31 | 2,425 | 2,801,505 |
| School Facilities Construction (AGC), 6.00%, 12/15/18 (a) | 4,280 | 4,830,622 |
| School Facilities Construction (AGC), 6.00%, 12/15/34 | 70 | 78,513 |
| New Jersey Health Care Facilities Financing Authority, RB, Virtua Health, Series A (AGC), 5.50%, 7/01/38 | 6,500 | 7,297,225 |

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2016

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

| | Par | |
|--|--------------|--------------|
| | (000) | Value |
| Municipal Bonds | | |
| New Jersey (continued) | | |
| New Jersey Higher Education Student Assistance Authority, Refunding RB, Series 1, AMT, 5.75%, 12/01/28 | \$ 4,065 | \$ 4,587,231 |
| New Jersey Transportation Trust Fund Authority, RB, Transportation System: | | |
| Series A, 5.50%, 6/15/41 | 5,410 | 5,926,709 |
| Series AA, 5.50%, 6/15/39 | 8,175 | 9,095,505 |
| | | 42,686,000 |
| New York 6.6% | | |
| City of New York New York Municipal Water Finance Authority, Refunding RB: | | |
| 2nd General Resolution, Fiscal 2009, Series EE, 5.25%, 6/15/40 | 7,500 | 8,422,950 |
| Water & Sewer System, 2nd General Resolution, Series EE, 5.38%, 6/15/43 | 3,475 | 4,073,047 |
| Water & Sewer System, Series FF-2, 5.50%, 6/15/40 | 4,000 | 4,525,880 |
| Metropolitan Transportation Authority, RB: | | |
| Series A, 5.25%, 11/15/38 | 4,000 | 4,750,640 |
| Series A-1, 5.25%, 11/15/39 | 4,490 | 5,440,623 |
| Port Authority of New York & New Jersey, Refunding ARB, Consolidated, 166th Series, 5.25%, 7/15/36 | 10,000 | 11,681,500 |
| | | 38,894,640 |
| Ohio 1.5% | | |
| State of Ohio Turnpike Commission, RB, Junior Lien, Infrastructure Projects, Series A-1: | | |
| 5.25%, 2/15/31 | 5,145 | 6,217,990 |
| 5.25%, 2/15/32 | 2,250 | 2,711,385 |
| | | 8,929,375 |
| Pennsylvania 1.4% | | |
| Pennsylvania Turnpike Commission, RB, Sub-Series A, 6.00%, 12/01/20 (a) | 4,945 | 5,079,652 |
| Township of Bristol Pennsylvania School District, GO, 5.25%, 6/01/37 | 3,000 | 3,495,360 |
| | | 8,575,012 |
| | Par | |
| | (000) | Value |
| Municipal Bonds | | |
| South Carolina 6.5% | | |
| County of Charleston South Carolina, RB, Special Source, 5.25%, 12/01/38 | \$ 6,735 | \$ 8,221,011 |
| County of Charleston South Carolina Airport District, ARB, Series A, AMT: | | |
| 5.25%, 7/01/25 | 4,490 | 5,359,354 |
| 5.50%, 7/01/38 | 3,000 | 3,479,460 |
| 6.00%, 7/01/38 | 5,270 | 6,294,277 |
| 5.50%, 7/01/41 | 4,170 | 4,833,572 |
| South Carolina Ports Authority, RB, AMT, 5.25%, 7/01/50 | 3,445 | 3,953,895 |
| State of South Carolina Public Service Authority, Refunding RB, Series E, 5.25%, 12/01/55 | 5,500 | 6,506,390 |
| | | 38,647,959 |
| Texas 13.7% | | |
| City of Beaumont Texas, GO, Certificates of Obligation, 5.25%, 3/01/37 | 4,190 | 5,033,992 |
| City of Houston Texas Combined Utility System Revenue, Refunding RB, Combined 1st Lien, Series A (AGC): | | |
| 6.00%, 5/15/19 (a) | 20,970 | 24,052,380 |
| 6.00%, 11/15/35 | 670 | 774,319 |
| 6.00%, 11/15/36 | 495 | 572,071 |
| 5.38%, 11/15/38 | 265 | 295,634 |
| County of Tarrant Texas Cultural Education Facilities Finance Corp., Refunding RB, Christus Health, Series A (AGC), 6.50%, 7/01/37 | 1,450 | 1,627,509 |
| Dallas Area Rapid Transit, Refunding RB, Senior Lien, 5.25%, 12/01/38 | 3,895 | 4,294,043 |
| Dallas-Fort Worth International Airport, ARB, Joint Improvement, AMT: | | |
| Series A, 5.00%, 11/01/38 | 5,580 | 6,228,619 |
| Series H, 5.00%, 11/01/37 | 4,575 | 5,168,286 |

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| | | |
|---|--------|------------|
| Lower Colorado River Authority, Refunding RB, 5.50%, 5/15/33 | 3,735 | 4,523,197 |
| North Texas Tollway Authority, Refunding RB, 1st Tier: (AGM), 6.00%, 1/01/43 | 5,555 | 6,566,177 |
| Series K-1 (AGC), 5.75%, 1/01/19 (a) | 12,150 | 13,628,047 |

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BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2016

Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

| | Par | |
|--|-----------|---------------|
| | (000) | Value |
| Municipal Bonds | | |
| Texas (continued) | | |
| Red River Education Financing Corp., RB, Texas Christian University Project, 5.25%, 3/15/38 | \$ 7,170 | \$ 8,611,959 |
| | | 81,376,233 |
| Virginia 1.2% | | |
| City of Lexington Virginia IDA, RB, Washington & Lee University, 5.00%, 1/01/43 | 1,750 | 2,024,015 |
| Virginia Public School Authority, RB, Fluvanna County School Financing, 6.50%, 12/01/18 (a) | 4,300 | 4,902,000 |
| | | 6,926,015 |
| Washington 1.5% | | |
| City of Seattle Washington Municipal Light & Power, Refunding RB, Series A, 5.25%, 2/01/36 | 4,200 | 4,883,130 |
| State of Washington, GO, Various Purposes, Series B, 5.25%, 2/01/36 | 3,290 | 3,849,366 |
| | | 8,732,496 |
| Total Municipal Bonds 120.7% | | 717,205,737 |
| Municipal Bonds Transferred to Tender Option Bond Trusts (b) | | |
| Alabama 7.8% | | |
| City of Birmingham Alabama Special Care Facilities Financing Authority, Refunding RB, Ascension Health, Senior Credit: Series B, 5.00%, 11/15/46 | 27,028 | 32,192,641 |
| Series C, 5.00%, 11/15/46 | 11,920 | 14,264,664 |
| | | 46,457,305 |
| California 5.2% | | |
| Los Angeles Unified School District California, GO, Series I, 5.00%, 1/01/34 | 2,400 | 2,696,616 |
| State of California, GO, Refunding, Various Purposes, 4.00%, 9/01/34 | 13,790 | 15,583,734 |
| Municipal Bonds Transferred to Tender Option Bond Trusts (b) | | |
| California (continued) | | |
| University of California, Refunding RB, 5.00%, 5/15/38 | \$ 10,000 | \$ 12,333,700 |
| | | 30,614,050 |
| Florida 2.0% | | |
| County of Hillsborough Florida Aviation Authority, ARB, Tampa International Airport, Series A, AMT (AGC), 5.50%, 10/01/38 | 10,657 | 11,603,474 |
| Indiana 1.8% | | |
| Indiana Health & Educational Facilities Financing Authority, Refunding RB, St. Francis, Series E (AGM), 5.25%, 5/01/18 (a) | 9,850 | 10,680,749 |
| Kentucky 0.1% | | |
| Kentucky State Property & Building Commission, Refunding RB, Project No. 93 (AGC), 5.25%, 2/01/27 | 404 | 446,377 |
| Nevada 2.4% | | |
| County of Clark Nevada Water Reclamation District, GO: Limited Tax, 6.00%, 7/01/18 (a) | 8,000 | 8,857,680 |
| Series B, 5.50%, 7/01/29 | 5,008 | 5,659,201 |
| | | 14,516,881 |
| New Jersey 3.3% | | |
| New Jersey Housing & Mortgage Finance Agency, RB, S/F Housing, Series CC, 5.25%, 10/01/29 | 7,398 | 7,863,099 |
| New Jersey Transportation Trust Fund Authority, RB, Transportation System: Series A (AMBAC), 5.00%, 12/15/32 | 8,000 | 8,364,640 |
| Series B, 5.25%, 6/15/36 (c) | 2,961 | 3,193,835 |

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| | | |
|--|-------|------------|
| | | 19,421,574 |
| New York 10.8% | | |
| City of New York New York Municipal Water Finance Authority, Refunding RB, Water & Sewer System, Series FF-2, 5.50%, 6/15/40 | 4,995 | 5,651,693 |
| City of New York New York Transitional Finance Authority, BARB, Fiscal 2009, Series S-3, 5.25%, 1/15/39 | 5,619 | 6,199,196 |

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2016

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

| Municipal Bonds Transferred to | Par | Value |
|---|------------|----------------|
| Tender Option Bond Trusts (b) | (000) | Value |
| New York (continued) | | |
| Hudson Yards Infrastructure Corp., RB, Fiscal 2012, Series A, 5.75%, 2/15/47 (c) | \$ 9,249 | \$ 10,871,913 |
| New York Liberty Development Corp., RB, 1 World Trade Center Port Authority Consolidated Bonds, 5.25%, 12/15/43 | 13,950 | 16,621,778 |
| New York Liberty Development Corp., Refunding RB, 4 World Trade Center Project, 5.75%, 11/15/51 (c) | 8,200 | 9,815,109 |
| New York State Dormitory Authority, ERB, Personal Income Tax, Series B, 5.25%, 3/15/38 | 13,500 | 15,057,225 |
| | | 64,216,914 |
| Texas 7.3% | | |
| City of San Antonio Texas Public Service Board, Refunding RB, Series A, 5.25%, 2/01/31 (c) | 12,027 | 13,333,162 |
| North Texas Tollway Authority, RB, Special Projects System, Series A, 5.50%, 9/01/41 | 9,640 | 11,395,830 |
| State of Texas, GO, Texas Transportation Commission, Highway Improvement, 5.00%, 4/01/43 | 15,550 | 18,935,079 |
| | | 43,664,071 |
| Utah 1.2% | | |
| City of Riverton Utah, RB, IHC Health Services, Inc., 5.00%, 8/15/41 | 6,373 | 6,976,390 |
| Total Municipal Bonds Transferred to | | |
| Tender Option Bond Trusts 41.9% | | 248,597,785 |
| Total Long-Term Investments | | |
| (Cost \$868,941,722) 162.6% | | 965,803,522 |
| Short-Term Securities | | |
| Metropolitan Transportation Authority, RB, Series 2016 A-1E, 2.00% | 10,000,000 | 10,084,795 |
| Total Short-Term Securities | | |
| (Cost \$10,084,795) 1.7% | | 10,084,795 |
| | | Value |
| Total Investments (Cost \$879,026,517*) 164.3% | | \$ 975,888,317 |
| Other Assets Less Liabilities 1.7% | | 10,335,986 |
| Liability for TOB Trust Certificates, Including Interest Expense and Fees Payable (19.8)% | | (117,611,865) |
| VRDP Shares, at Liquidation Value (46.2)% | | (274,600,000) |
| Net Assets Applicable to Common Shares 100.0% | | \$ 594,012,438 |

* As of period end, gross unrealized appreciation and depreciation based on cost for federal income tax purposes were as follows:

| | |
|-------------------------------|----------------|
| Tax cost | \$ 762,549,322 |
| Gross unrealized appreciation | \$ 96,873,219 |
| Gross unrealized depreciation | (1,067,798) |

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Net unrealized appreciation

\$ 95,805,421

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BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2016

Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

Notes to Schedule of Investments

* Cost for federal income tax purposes.

(a) U.S. Government securities, held in escrow, are used to pay interest on this security, as well as to retire the bond in full at the date indicated, typically at a premium to par.

(b) Represent bonds transferred to a TOB Trust in exchange of cash and residual certificates received by the Trust. These bonds serve as collateral in a secured borrowing.

(c) All or a portion of security is subject to a recourse agreement. The aggregate maximum potential amount the Trust could ultimately be required to pay under the agreements, which expire between October 1, 2016 to November 15, 2019, is \$19,879,975.

| | Shares Held at August 31, 2015 | Net Activity | Shares Held at May 31, 2016 | Value at May 31, 2016 | Income |
|--|--------------------------------------|-----------------|-----------------------------------|-----------------------------|----------|
| Affiliate | | | | | |
| BlackRock Liquidity Funds, MuniCash ¹ | | | | | \$ 1,787 |
| FFI Institutional Tax-Exempt Fund ¹ | 3,674,880 | (3,674,880) | | | 392 |
| Total | | | | | \$ 2,179 |

¹ No longer held by Trust as of report date.

Derivative Financial Instruments Outstanding as of Period End

Futures Contracts

| Contracts Short | Issue | Expiration | Notional Value | Unrealized Depreciation |
|--------------------|----------------------------|----------------|-------------------|----------------------------|
| (93) | 5-Year U.S. Treasury Note | September 2016 | \$ 11,170,898 | \$ (6,263) |
| (113) | 10-Year U.S. Treasury Note | September 2016 | \$ 14,654,688 | (9,886) |
| (46) | Long U.S. Treasury Bond | September 2016 | \$ 7,512,375 | (18,154) |
| Total | | | | \$ (34,303) |

Portfolio Abbreviations

| | |
|--------------|---|
| AGC | Assured Guarantee Corp. |
| AGM | Assured Guaranty Municipal Corp. |
| AMBAC | American Municipal Bond Assurance Corp. |
| AMT | Alternative Minimum Tax (subject to) |
| ARB | Airport Revenue Bonds |
| BARB | Building Aid Revenue Bonds |
| COP | Certificates of Participation |
| EDA | Economic Development Authority |

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| | |
|---------------|---|
| ERB | Education Revenue Bonds |
| GARB | General Airport Revenue Bonds |
| GO | General Obligation Bonds |
| HFA | Housing Finance Agency |
| IDA | Industrial Development Authority |
| IDB | Industrial Development Board |
| LRB | Lease Revenue Bonds |
| NPFGC | National Public Finance Guarantee Corp. |
| Q-SBLF | Qualified School Board Loan Fund |
| RB | Revenue Bonds |
| S/F | Single-Family |

BLACKROCK MUNIHOLDINGS INVESTMENT QUALITY FUND

MAY 31, 2016

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Schedule of Investments (continued)

BlackRock MuniHoldings Investment Quality Fund (MFL)

Fair Value Hierarchy as of Period End

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

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

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

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

The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). Accordingly, the degree of judgment exercised in determining fair value is greatest for instruments categorized in Level 3. The inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, for disclosure purposes, the fair value hierarchy classification is determined based on the lowest level input that is significant to the fair value measurement in its entirety. The significant unobservable inputs used by the Global Valuation Committee in determining the price for Fair Valued Investments are typically categorized as level 3.

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

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

| | Level 1 | Level 2 | Level 3 | Total |
|---|-------------|-----------------------|---------|-----------------------|
| Assets: | | | | |
| Investments: | | | | |
| Long-Term Investments ¹ | | \$ 965,803,522 | | \$ 965,803,522 |
| Short-Term Securities | | 10,084,795 | | 10,084,795 |
| Total Investments | | \$ 975,888,317 | | \$ 975,888,317 |
| Derivative Financial Instruments ² | | | | |
| Liabilities: | | | | |
| Interest rate contracts | \$ (34,303) | | | \$ (34,303) |

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

² Derivative financial instruments are futures contracts. Futures contracts are valued at the unrealized appreciation (depreciation) on the instrument.

Schedule of Investments (concluded)

BlackRock MuniHoldings Investment Quality Fund (MFL)

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

| | Level 1 | Level 2 | Level 3 | Total |
|-----------------------------------|------------|------------------|---------|------------------|
| Assets: | | | | |
| Cash pledged for future contracts | \$ 384,150 | | | \$ 384,150 |
| Liabilities: | | | | |
| Bank overdraft | | \$ (345,143) | | (345,143) |
| TOB Trust Certificates | | (117,533,574) | | (117,533,574) |
| VRDP Shares | | (274,600,000) | | (274,600,000) |
| Total | \$ 384,150 | \$ (392,478,717) | | \$ (392,094,567) |

During the period ended May 31, 2016, there were no transfers between levels.

Item 2 Controls and Procedures

- 2(a) The registrant's principal executive and principal financial officers, or persons performing similar functions, have concluded that the registrant's disclosure controls and procedures (as defined in Rule 30a-3(c) under the Investment Company Act of 1940, as amended (the "1940 Act")) are effective as of a date within 90 days of the filing of this report based on the evaluation of these controls and procedures required by Rule 30a-3(b) under the 1940 Act and Rule 13a-15(b) under the Securities Exchange Act of 1934, as amended.
- 2(b) There were no changes in the registrant's internal control over financial reporting (as defined in Rule 30a-3(d) under the 1940 Act) that occurred during the registrant's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, the registrant's internal control over financial reporting.

Item 3 Exhibits

Certifications Attached hereto

Pursuant to the requirements of the Securities Exchange Act of 1934 and the Investment Company Act of 1940, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

BlackRock MuniHoldings Investment Quality Fund

By: /s/ John M. Perlowski
John M. Perlowski
Chief Executive Officer (principal executive officer) of
BlackRock MuniHoldings Investment Quality Fund

Date: July 22, 2016

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

By: /s/ John M. Perlowski
John M. Perlowski
Chief Executive Officer (principal executive officer) of
BlackRock MuniHoldings Investment Quality Fund

Date: July 22, 2016

By: /s/ Neal J. Andrews
Neal J. Andrews
Chief Financial Officer (principal financial officer) of
BlackRock MuniHoldings Investment Quality Fund

Date: July 22, 2016