

NUVEEN MISSOURI PREMIUM INCOME MUNICIPAL FUND
Form N-Q
October 30, 2012

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM N-Q

QUARTERLY SCHEDULE OF PORTFOLIO HOLDINGS OF REGISTERED MANAGEMENT INVESTMENT
COMPANY

Investment Company Act file number 811-7616

Nuveen Missouri Premium Income Municipal Fund
(Exact name of registrant as specified in charter)

Nuveen Investments
333 West Wacker Drive, Chicago, Illinois 60606
(Address of principal executive offices) (Zip code)

Kevin J. McCarthy
Vice President and Secretary
333 West Wacker Drive, Chicago, Illinois 60606
(Name and address of agent for service)

Registrant's telephone number, including area code: 312-917-7700

Date of fiscal year end: 5/31

Date of reporting period: 8/31/12

Form N-Q is to be used by management investment companies, other than small business investment companies registered on Form N-5 (§§ 239.24 and 274.5 of this chapter), to file reports with the Commission, not later than 60 days after the close of the first and third fiscal quarters, pursuant to rule 30b1-5 under the Investment Company Act of 1940 (17 CFR 270.30b1-5). The Commission may use the information provided on Form N-Q in its regulatory, disclosure review, inspection, and policymaking roles.

A registrant is required to disclose the information specified by Form N-Q, and the Commission will make this information public. A registrant is not required to respond to the collection of information contained in Form N-Q unless the Form displays a currently valid Office of Management and Budget ("OMB") control number. Please direct comments concerning the accuracy of the information collection burden estimate and any suggestions for reducing the burden to the Secretary, Securities and Exchange Commission, 450 Fifth Street, NW, Washington, DC 20549-0609. The OMB has reviewed this collection of information under the clearance requirements of 44 U.S.C. § 3507.

Item 1. Schedule of Investments

Portfolio of Investments (Unaudited)
 Nuveen Missouri Premium Income Municipal Fund (NOM)
 August 31, 2012

| Principal Amount (000) | Description (1) | Optional Call Provisions (2) | Ratings (3) | Value |
|------------------------------|--|---------------------------------------|----------------|--------------|
| | Consumer Staples – 3.6% (2.3% of Total Investments) | | | |
| \$ 1,000 | Missouri Development Finance Board, Solid Waste Disposal Revenue Bonds, Procter and Gamble Inc., Series 1999, 5.200%, 3/15/29 (Alternative Minimum Tax) Education and Civic Organizations – 8.9% (5.7% of Total Investments) | No Opt. Call | AA– | \$ 1,253,080 |
| 250 | Lincoln University, Missouri, Auxillary System Revenue Bonds, Series 2007, 5.125%, 6/01/37 – AGC Insured | 6/17 at 100.00 | AA– | 265,543 |
| 630 | Missouri Health and Educational Facilities Authority, Revenue Bonds, A.T. Still University of Health Sciences, Series 2011, 5.250%, 10/01/41 | 10/21 at 100.00 | A– | 706,640 |
| 700 | Missouri Health and Educational Facilities Authority, Revenue Bonds, Rockhurst University, Series 2011A, 6.500%, 10/01/35 | 10/18 at 103.00 | BBB | 785,372 |
| 550 | Missouri Health and Educational Facilities Authority, Revenue Bonds, Washington University, Series 2011B, 5.000%, 11/15/37 | 11/21 at 100.00 | AAA | 649,281 |
| 600 | Missouri Health and Educational Facilities Authority, Revenue Bonds, Webster University, Series 2011, 5.000%, 4/01/36 | 4/21 at 100.00 | A2 | 666,918 |
| 2,730 | Total Education and Civic Organizations | | | 3,073,754 |
| | Health Care – 33.4% (21.3% of Total Investments) | | | |
| 485 | Cape Girardeau County Industrial Development Authority, Missouri, Health Facilities Revenue Bonds, Saint Francis Medical Center, Series 2009A, 5.750%, 6/01/39 | 6/19 at 100.00 | AA– | 543,418 |
| 760 | Cape Girardeau County Industrial Development Authority, Missouri, Health Facilities Revenue Bonds, Southeast Missouri Hospital Association, Series 2007, 5.000%, 6/01/27 | 6/17 at 100.00 | BBB+ | 782,952 |
| 930 | Cass County, Missouri, Hospital Revenue Bonds, Series 2007, 5.625%, 5/01/38 | 11/16 at 100.00 | BBB– | 945,959 |
| 480 | Clinton County Industrial Development Authority, Missouri, Revenue Bonds, Cameron Regional Medical Center, Series 2007, 5.000%, 12/01/37 | 12/17 at 100.00 | N/R | 473,525 |
| 750 | Joplin Industrial Development Authority, Missouri, Health Facilities Revenue Bonds, Freeman Health System, Series 2004, 5.500%, 2/15/29 | 2/15 at 102.00 | BBB+ | 789,203 |

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|--------|--|--------------------|------|------------|
| 200 | Joplin Industrial Development Authority, Missouri, Health Facilities Revenue Bonds, Freeman Health System, Series 2011, 5.500%, 2/15/31 | 2/21 at 100.00 | BBB+ | 221,414 |
| 540 | Missouri Health and Educational Facilities Authority, Health Facilities Revenue Bonds, Capital Region Medical Center, Series 2011, 5.000%, 11/01/27 | 11/20 at 100.00 | A3 | 591,732 |
| 500 | Missouri Health and Educational Facilities Authority, Health Facilities Revenue Bonds, St. Luke's Episcopal and Presbyterian Hospitals, Series 2011, 5.000%, 12/01/25 | 12/21 at 100.00 | A+ | 565,090 |
| 2,000 | Missouri Health and Educational Facilities Authority, Health Facility Revenue Bonds, St. Lukes's Health System, Series 2010A, 5.000%, 11/15/30 | 11/20 at 100.00 | A+ | 2,213,020 |
| 1,500 | Missouri Health and Educational Facilities Authority, Revenue Bonds, BJC Health System, Series 2003: 5.125%, 5/15/25 | 5/13 at 100.00 | AA | 1,541,715 |
| 1,155 | Missouri Health and Educational Facilities Authority, Revenue Bonds, Lake Regional Health System, Series 2003, 5.250%, 5/15/32 | 5/13 at 100.00 | AA | 1,187,294 |
| 500 | Saline County Industrial Development Authority, Missouri, Health Facilities Revenue Bonds, John Fitzgibbon Memorial Hospital Inc., Series 2010, 5.700%, 2/15/34 | 2/14 at 100.00 | BBB+ | 513,970 |
| 720 | St. Louis County Industrial Development Authority, Missouri, Healthcare Facilities Revenue Bonds, Ranken-Jordan Project, Refunding Series 2007, 5.600%, 12/01/28 | 12/20 at 100.00 | BBB- | 757,195 |
| 350 | St. Louis County Industrial Development Authority, Missouri, Healthcare Facilities Revenue Bonds, Ranken-Jordan Project, Refunding Series 2007, 5.000%, 11/15/27 | 11/16 at 100.00 | N/R | 355,408 |
| 10,870 | Total Health Care Housing/Multifamily – 0.4% (0.3% of Total Investments) | | | 11,481,895 |
| 150 | Missouri Housing Development Commission, Multifamily Housing Revenue Bonds, Series 2001II, 5.250%, 12/01/16 | 12/12 at 100.00 | AA | 150,446 |
| 350 | Missouri Housing Development Commission, Single Family Mortgage Revenue Bonds, Homeownership Loan Program, Series 2007A-1, 2.7% (1.7% of Total Investments), 4.700%, 9/01/27 (Alternative Minimum Tax) | 9/16 at 100.00 | AA+ | 364,462 |
| 535 | Missouri Housing Development Commission, Single Family Mortgage Revenue Bonds, Homeownership Loan Program, Series 2007C-1, 4.800%, 9/01/38 (Alternative Minimum Tax) | 3/17 at 100.00 | AA+ | 549,252 |
| 885 | Total Housing/Single Family Long-Term Care – 11.7% (7.5% of Total Investments) | | | 913,714 |
| 1,750 | Cole County Industrial Development Authority, Missouri, Revenue Bonds, Lutheran Senior Services – Heisinger Project, Series 2004, 5.500%, 2/01/35 | 2/14 at 100.00 | BBB+ | 1,779,575 |
| 500 | | | BBB- | 522,965 |

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|-------|---|--------------------|------|-----------|
| | Joplin Industrial Development Authority, Missouri, Revenue Bonds, Christian Homes Inc., Series 2007F, 5.750%, 5/15/31 | 5/17 at 100.00 | | |
| 475 | Lees Summit Industrial Development Authority, Missouri, Revenue Bonds, John Knox Village Obligated Group, Series 2007A, 5.125%, 8/15/32 | 8/17 at 100.00 | BBB- | 476,325 |
| 250 | Missouri Health and Educational Facilities Authority, Revenue Bonds, Lutheran Senior Services Projects, Series 2011, 6.000%, 2/01/41 | 2/21 at 100.00 | BBB+ | 280,583 |
| 425 | St. Louis County Industrial Development Authority, Missouri, Revenue Bonds, Friendship Village of Sunset Hills, Series 2012, 5.000%, 9/01/42 | 9/22 at 100.00 | A | 444,924 |
| 500 | St. Louis County Industrial Development Authority, Missouri, Revenue Bonds, Friendship Village of West County, Series 2007A, 5.500%, 9/01/28 | 9/17 at 100.00 | BBB | 515,955 |
| 3,900 | Total Long-Term Care Materials – 2.2% (1.4% of Total Investments) | | | 4,020,327 |
| 750 | Sugar Creek, Missouri, Industrial Development Revenue Bonds, Lafarge North America Inc., Series 2003A, 5.650%, 6/01/37 (Alternative Minimum Tax) Tax Obligation/General – 17.4% (11.1% of Total Investments) | 6/13 at 101.00 | BB+ | 752,528 |
| 600 | Branson Reorganized School District R-4, Taney County, Missouri, General Obligation Bonds, School Building Series 2012, 4.375%, 3/01/32 | 3/22 at 100.00 | A+ | 651,468 |
| 1,500 | Camdenton Reorganized School District R3, Camden County, Missouri, General Obligation Bonds, Series 2005, 5.250%, 3/01/24 – AGM Insured | 3/15 at 100.00 | AA- | 1,657,560 |
| 1,685 | Independence School District, Jackson County, Missouri, General Obligation Bonds, Series 2010, 5.000%, 3/01/27 | 3/20 at 100.00 | AA+ | 1,988,249 |
| 500 | Missouri School Boards Association, Lease Participation Certificates, Clay County School District 53 Liberty, Series 2007, 5.250%, 3/01/27 – AGM Insured | 3/17 at 100.00 | AA- | 554,875 |
| 1,000 | Puerto Rico, General Obligation and Public Improvement Bonds, Series 2002A, 5.500%, 7/01/20 – NPMFG Insured | No Opt. Call | Baa1 | 1,112,760 |
| 5,285 | Total Tax Obligation/General Tax Obligation/Limited – 25.4% (16.2% of Total Investments) | | | 5,964,912 |
| 600 | Chesterfield, Missouri, Certificates of Participation, Series 2005, 5.000%, 12/01/24 – FGIC Insured | 12/15 at 100.00 | Aa1 | 673,080 |
| 80 | Cottleville, Missouri, Certificates of Participation, Series 2006, 5.250%, 8/01/31 | 8/14 at 100.00 | N/R | 81,521 |
| 175 | Fenton, Missouri, Tax Increment Revenue Bonds, Gravois Bluffs Redevelopment Project, Series 2006, 4.500%, 4/01/21 | 4/14 at 100.00 | BBB+ | 179,417 |
| 315 | Fulton, Missouri, Tax Increment Revenue Bonds, Fulton Commons Redevelopment Project, Series 2006, 5.000%, 6/01/28 | 6/16 at 100.00 | N/R | 266,887 |
| 455 | Government of Guam, Business Privilege Tax Bonds, Series 2012B-1, 5.000%, 1/01/42 | 1/22 at 100.00 | A | 501,870 |

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| 475 | Jackson County, Missouri, Special Obligation Bonds, Truman Medical Center Project, Series 2011B, 4.350%, 12/01/23 | 12/21 at 100.00 | Aa3 | 534,000 |
| 300 | Kansas City Industrial Development Authority, Missouri, Downtown Redevelopment District Revenue Bonds, Series 2011A, 5.000%, 9/01/32 | 9/21 at 100.00 | AA- | 337,566 |
| 475 | Kansas City Tax Increment Financing Commission, Missouri, Tax Increment Revenue Bonds, Briarcliff West Project, Series 2006A, 5.400%, 6/01/24 | 6/14 at 102.00 | N/R | 464,460 |
| 100 | Kansas City Tax Increment Financing Commission, Missouri, Tax Increment Revenue Bonds, Shoal Creek Parkway Project, Series 2011, 5.000%, 6/01/21 | 6/16 at 100.00 | N/R | 104,650 |
| 360 | Missouri Development Finance Board, Infrastructure Facilities Revenue Bonds, Branson Landing Project, Series 2005A, 5.000%, 6/01/35 | 6/15 at 100.00 | A | 371,300 |
| 415 | Missouri Development Finance Board, Infrastructure Facilities Revenue Bonds, City of Independence, Crackerneck Creek Project, Series 2006C, 5.000%, 3/01/28 | 3/16 at 100.00 | A- | 426,313 |
| 450 | Monarch-Chesterfield Levee District, St. Louis County, Missouri, Levee District Improvement Bonds, Series 1999, 5.750%, 3/01/19 – NPMF Insured | 3/13 at 100.00 | A | 451,665 |
| 500 | Osage Beach, Missouri, Tax Increment Revenue Bonds, Prewitts Point Transportation Development District, Series 2006, 5.000%, 5/01/23 | 5/13 at 101.00 | N/R | 437,985 |
| 1,750 | Puerto Rico Sales Tax Financing Corporation, Sales Tax Revenue Bonds, First Subordinate Series 2009A, 6.000%, 8/01/42 | 8/19 at 100.00 | A+ | 1,964,655 |
| 225 | Puerto Rico Sales Tax Financing Corporation, Sales Tax Revenue Bonds, Senior Series 2011C, 0.000%, 8/01/41 | No Opt. Call | AA- | 47,457 |
| 1,500 | Puerto Rico Sales Tax Financing Corporation, Sales Tax Revenue Bonds, Series 2007A, 0.000%, 8/01/41 – NPMF Insured | No Opt. Call | AA- | 308,205 |
| 600 | Riverside, Missouri, L-385 Levee Redevelopment Plan Tax Increment Revenue Bonds, Series 2004, 5.250%, 5/01/20 | 5/15 at 100.00 | A | 634,326 |
| 340 | St. Joseph Industrial Development Authority, Missouri, Tax Increment Bonds, Shoppes at North Village Project, Series 2005A: 5.375%, 11/01/24 | 11/14 at 100.00 | N/R | 341,455 |
| 400 | St. Joseph Industrial Development Authority, Missouri, Tax Increment Bonds, Shoppes at North Village Project, Series 2005B, 5.500%, 11/01/27 | 11/14 at 100.00 | N/R | 401,100 |
| 200 | St. Joseph Industrial Development Authority, Missouri, Tax Increment Bonds, Shoppes at North Village Project, Series 2005B, 5.500%, 11/01/27 | 11/14 at 100.00 | N/R | 200,550 |
| 9,715 | Total Tax Obligation/Limited Transportation – 15.8% (10.0% of Total Investments) | | | 8,728,462 |
| 500 | Kansas City, Missouri, Passenger Facility Charge Revenue Bonds, Kansas City International | 10/12 at 100.50 | A | 503,230 |

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| | Airport, Series 2001, 5.000%, 4/01/23 – AMBAC Insured (Alternative Minimum Tax) | | | |
| 1,000 | St. Louis Land Clearance Redevelopment Authority, Missouri, Revenue Refunding and Improvement Bonds, LCRA Parking Facilities, Series 1999C, 7.000%, 9/01/19 | 3/13 at 100.00 | N/R | 1,000,720 |
| 1,000 | St. Louis, Missouri, Airport Revenue Bonds, Lambert-St. Louis International Airport, Series 2005, 5.500%, 7/01/18 – NPMFG Insured | No Opt. Call | A– | 1,170,440 |
| 2,500 | St. Louis, Missouri, Airport Revenue Bonds, Lambert-St. Louis International Airport, Series 2007A, 5.000%, 7/01/21 – AGM Insured | 7/17 at 100.00 | AA– | 2,742,171 |
| 5,000 | Total Transportation | | | 5,416,561 |
| | U.S. Guaranteed – 13.9% (8.8% of Total Investments) (4) | | | |
| 685 | Fenton, Missouri, Tax Increment Refunding and Improvement Revenue Bonds, Gravois Bluffs Redevelopment Project, Series 2002, 6.125%, 10/01/21 (Pre-refunded 10/01/12) | 10/12 at 100.00 | AAA | 688,404 |
| 1,630 | North Kansas City School District, Missouri, General Obligation Bonds, Series 2003A, 5.000%, 3/01/23 (Pre-refunded 3/01/13) | 3/13 at 100.00 | AA+ (4) | 1,669,283 |
| 1,395 | Springfield Public Building Corporation, Missouri, Lease Revenue Bonds, Jordan Valley Park Projects, Series 2000A, 6.125%, 6/01/21 – AMBAC Insured (ETM) | 11/11 at 100.00 | N/R (4) | 1,395,000 |
| | St. Louis County Pattonville School District R3, Missouri, General Obligation Bonds, Series 2004: | | | |
| 80 | 5.250%, 3/01/20 (Pre-refunded 3/01/14) – AGM Insured | 3/14 at 100.00 | AA (4) | 85,934 |
| 250 | 5.250%, 3/01/20 (Pre-refunded 3/01/14) – AGM Insured | 3/14 at 100.00 | AA– (4) | 268,543 |
| 20 | 5.250%, 3/01/20 (Pre-refunded 3/01/14) – AGM Insured | 3/14 at 100.00 | AA (4) | 21,493 |
| 500 | St. Louis County, Missouri, GNMA Collateralized Mortgage Revenue Bonds, Series 1993D, 5.650%, 7/01/20 (Alternative Minimum Tax) (ETM) | No Opt. Call | AA+ (4) | 633,150 |
| 4,560 | Total U.S. Guaranteed Utilities – 6.1% (3.9% of Total Investments) | | | 4,761,807 |
| 110 | Missouri Joint Municipal Electric Utility Commission, Iatan 2 Power Project Revenue Bonds, Series 2006A, 4.125%, 1/01/21 – AMBAC Insured | 1/16 at 100.00 | A2 | 116,712 |
| 500 | Missouri Joint Municipal Electric Utility Commission, Plum Point Project, Revenue Bonds, Series 2006, 5.000%, 1/01/34 – NPMFG Insured | 1/16 at 100.00 | A– | 521,540 |
| | Missouri Joint Municipal Electric Utility Commission, Power Supply System Revenue Bonds, MoPEP Facilities, Series 2012: | | | |
| 400 | 5.000%, 1/01/32 | 1/21 at 100.00 | A2 | 443,484 |
| 425 | 5.000%, 1/01/37 | 1/21 at 100.00 | A2 | 461,588 |
| 530 | | | BBB+ | 551,523 |

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| | Puerto Rico Electric Power Authority, Power Revenue Bonds, Series 2010XX, 5.250%, 7/01/40 | 7/20 at 100.00 | | |
| 1,965 | Total Utilities | | | 2,094,847 |
| | Water and Sewer – 15.3% (9.8% of Total Investments) | | | |
| 600 | Carroll County Public Water Supply District 1, Missouri, Water System Revenue Bonds, Refunding Series 2009, 6.000%, 3/01/39 | 3/18 at 100.00 | A | 675,894 |
| 1,150 | Kansas City, Missouri, Water Revenue Bonds, Series 2012A, 4.500%, 12/01/36 | 12/21 at 100.00 | AA+ | 1,279,053 |
| 200 | Metropolitan St. Louis Sewerage District, Missouri, Wastewater System Revenue Bonds, Series 2006C, 5.000%, 5/01/36 – NCFG Insured | 5/17 at 100.00 | AAA | 227,328 |
| 2,965 | Missouri Environmental Improvement and Energy Resources Authority, Water Facility Revenue Bonds, Missouri-American Water Company, Series 2006, 4.600%, 12/01/36 – AMBAC Insured (Alternative Minimum Tax) (UB) | 12/16 at 100.00 | AA+ | 3,076,336 |
| 4,915 | Total Water and Sewer | | | 5,258,611 |
| \$ 51,725 | Total Investments (cost \$50,707,291) – 156.8% | | | 53,870,944 |
| | Floating Rate Obligations – (6.5)% | | | (2,225,000) |
| | MuniFund Term Preferred Shares, at Liquidation Value – (52.0)% (5) | | | (17,880,000) |
| | Other Assets Less Liabilities – 1.7% | | | 598,669 |
| | Net Assets Applicable to Common Shares – 100% | | | \$ 34,364,613 |

Fair Value Measurements

Fair value is defined as the price that the Fund would receive upon selling an investment or transferring a liability in an orderly transaction to an independent buyer in the principal or most advantageous market for the investment. A three-tier hierarchy is used to maximize the use of observable market data and minimize the use of unobservable inputs and to establish classification of fair value measurements for disclosure purposes. Observable inputs reflect the assumptions market participants would use in pricing the asset or liability. Observable inputs are based on market data obtained from sources independent of the reporting entity. Unobservable inputs reflect the reporting entity's own assumptions about the assumptions market participants would use in pricing the asset or liability. Unobservable inputs are based on the best information available in the circumstances. The following is a summary of the three-tiered hierarchy of valuation input levels.

Level 1 – Inputs are unadjusted and prices are determined using quoted prices in active markets for identical securities.

Level 2 – Prices are determined using other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.).

Level 3 – Prices are determined using significant unobservable inputs (including management's assumptions in determining the fair value of investments).

The inputs or methodologies used for valuing securities are not an indication of the risks associated with investing in those securities. The following is a summary of the Fund's fair value measurements as of the end of the reporting period:

| | Level 1 | Level 2 | Level 3 | Total |
|------------------------|---------|--------------|---------|--------------|
| Long-Term Investments: | | | | |
| Municipal Bonds | \$— | \$53,870,944 | \$— | \$53,870,944 |

The Nuveen funds' Board of Directors/Trustees is responsible for the valuation process and has delegated the oversight of the daily valuation process to the Adviser's Valuation Committee. The Valuation Committee, pursuant to the valuation policies and procedures adopted by the Board of Directors/Trustees, is responsible for making fair value determinations, evaluating the effectiveness of the funds' pricing policies, and reporting to the Board of Directors/Trustees. The Valuation Committee is aided in its efforts by the Adviser's dedicated Securities Valuation Team, which is responsible for administering the daily valuation process and applying fair value methodologies as approved by the Valuation Committee. When determining the reliability of independent pricing services for investments owned by the funds, the Valuation Committee, among other things, conducts due diligence reviews of the pricing services and monitors the quality of security prices received through various testing reports conducted by the Securities Valuation Team.

The Valuation Committee will consider pricing methodologies it deems relevant and appropriate when making fair value determinations. Examples of possible methodologies include, but are not limited to, multiple of earnings; discount from market of a similar freely traded security; discounted cash-flow analysis; book value or a multiple thereof; risk premium/yield analysis; yield to maturity; and/or fundamental investment analysis. The Valuation Committee will also consider factors it deems relevant and appropriate in light of the facts and circumstances. Examples of possible factors include, but are not limited to, the type of security; the issuer's financial statements; the purchase price of the security; the discount from market value of unrestricted securities of the same class at the time of purchase; analysts' research and observations from financial institutions; information regarding any transactions or offers with respect to the security; the existence of merger proposals or tender offers affecting the security; the price and extent of public trading in similar securities of the issuer or comparable companies; and the existence of a shelf registration for restricted securities.

For each portfolio security that has been fair valued pursuant to the policies adopted by the Board of Directors/Trustees, the fair value price is compared against the last available and next available market quotations. The Valuation Committee reviews the results of such testing and fair valuation occurrences are reported to the Board of Directors/Trustees.

Income Tax Information

The following information is presented on an income tax basis. Differences between amounts for financial statement and federal income tax purposes are primarily due to timing differences in recognizing taxable market discount, timing differences in recognizing certain gains and losses on investment transactions and the treatment of investments in inverse floating rate securities reflected as financing transactions, if any. To the extent that differences arise that are permanent in nature, such amounts are reclassified within the capital accounts on the Statement of Assets and Liabilities presented in the annual report, based on their federal tax basis treatment; temporary differences do not require reclassification. Temporary and permanent differences do not impact the net asset value of the Fund.

At August 31, 2012, the cost of investments was \$48,440,501.

Gross unrealized appreciation and gross unrealized depreciation of investments at August 31, 2012, were as follows:

| | |
|---|-------------|
| Gross unrealized: | |
| Appreciation | \$3,348,816 |
| Depreciation | (143,598) |
| Net unrealized appreciation (depreciation) of investments | \$3,205,218 |

- (1) All percentages shown in the Portfolio of Investments are based on net assets applicable to Common shares unless otherwise noted.
 - (2) Optional Call Provisions: Dates (month and year) and prices of the earliest optional call or redemption. There may be other call provisions at varying prices at later dates. Certain mortgage-backed securities may be subject to periodic principal paydowns.
 - (3) Ratings: Using the highest of Standard & Poor's Group ("Standard & Poor's"), Moody's Investor Service, Inc. ("Moody's") or Fitch, Inc. ("Fitch") rating. Ratings below BBB by Standard & Poor's, Baa by Moody's or BBB by Fitch are considered to be below investment grade. Holdings designated N/R are not rated by any of these national rating agencies.
 - (4) Backed by an escrow or trust containing sufficient U.S. Government or U.S. Government agency securities, which ensure the timely payment of principal and interest. Certain bonds backed by U.S. Government or agency securities are regarded as having an implied rating equal to the rating of such securities.
 - (5) MuniFund Term Preferred Shares, at Liquidation Value as a percentage of Total Investments is 33.2%.
N/R Not rated.
- (ETM) Escrowed to maturity.
(UB) Underlying bond of an inverse floating rate trust reflected as a financing transaction.

Item 2. Controls and Procedures.

- 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") (17 CFR 270.30a-3(c))) are effective, as of a date within 90 days of the filing date of this report that includes the disclosure required by this paragraph, based on their evaluation of the controls and procedures required by Rule 30a-3(b) under the 1940 Act (17 CFR 270.30a-3(b)) and Rule 13a-15(b) or 15d-15(b) under the Securities Exchange Act of 1934 (17 CFR 240.13a-15(b) or 240.15d-15(b)).

- 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 (17 CFR 270.30a-3(d))) 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.

File as exhibits as part of this Form a separate certification for each principal executive officer and principal financial officer of the registrant as required by Rule 30a-2(a) under the 1940 Act (17 CFR 270.30a-2(a)), exactly as set forth below: See EX-99 CERT attached hereto.

SIGNATURES

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.

(Registrant) Nuveen Missouri Premium Income Municipal Fund

By (Signature and Title) /s/ Kevin J. McCarthy
Kevin J. McCarthy
Vice President and Secretary

Date: October 30, 2012

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

By (Signature and Title) /s/ Gifford R. Zimmerman
Gifford R. Zimmerman
Chief Administrative Officer (principal executive officer)

Date: October 30, 2012

By (Signature and Title) /s/ Stephen D. Foy
Stephen D. Foy
Vice President and Controller (principal financial officer)

Date: October 30, 2012