

NUVEEN MISSOURI PREMIUM INCOME MUNICIPAL FUND  
Form N-Q  
October 30, 2015

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 811-07616

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: 8/31/15

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

Nuveen Missouri Premium Income Municipal  
Fund (NOM)  
August 31, 2015 (Unaudited)

| Principal<br>Amount (000) | Description (1)   | Optional Call<br>Provisions (2) | Ratings (3) | Value        |
|---------------------------|---|---------------------------------|-------------|--------------|
|                           | LONG-TERM INVESTMENTS – 160.1%<br>(100.0% of Total Investments)   |                                 |             |              |
|                           | MUNICIPAL BONDS – 160.1% (100.0% of<br>Total Investments)   |                                 |             |              |
|                           | Consumer Staples – 3.9% (2.4% of Total<br>Investments)  |                                 |             |              |
| \$ 1,055                  | Missouri Development Finance Board, Solid<br>Waste Disposal Revenue Bonds, Procter and<br>Gamble<br>Inc., Series 1999, 5.200%, 3/15/29 (Alternative<br>Minimum Tax)                       | No Opt. Call                    | AA–         | \$ 1,261,959 |
|                           | Education and Civic Organizations – 21.0%<br>(13.1% of Total Investments)   |                                 |             |              |
| 300                       | Curators of the University of Missouri, System<br>Facilities Revenue Bonds, Refunding Series<br>2014A, 4.000%, 11/01/33   | 11/24 at<br>100.00              | AA+         | 319,416      |
| 250                       | Lincoln University, Missouri, Auxiliary<br>System Revenue Bonds, Series 2007, 5.125%,<br>6/01/37 –<br>AGC Insured   | 6/17 at 100.00                  | AA          | 257,942      |
| 410                       | Missouri Health and Educational Facilities<br>Authority, Educational Facilities Revenue<br>Bonds,<br>Kansas City University of Medicine and<br>Biosciences, Series 2013A, 5.000%, 6/01/33 | 6/23 at 100.00                  | A1          | 446,761      |
| 750                       | Missouri Health and Educational Facilities<br>Authority, Educational Facilities Revenue<br>Bonds,<br>Saint Louis College of Pharmacy, Series 2013,<br>5.500%, 5/01/43                     | 5/23 at 100.00                  | BBB+        | 815,865      |
| 600                       | Missouri Health and Educational Facilities<br>Authority, Educational Facilities Revenue<br>Bonds,<br>Southwest Baptist University Project, Series<br>2012, 5.000%, 10/01/33               | 10/22 at<br>100.00              | BBB–        | 629,502      |

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|       |  |                 |      |           |
|-------|--|-----------------|------|-----------|
| 725   | Missouri Health and Educational Facilities Authority, Educational Facilities Revenue Bonds, University of Central Missouri, Series 2013C2, 5.000%, 10/01/34              | 10/23 at 100.00 | A    | 812,892   |
| 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-   | 686,316   |
| 510   | Missouri Health and Educational Facilities Authority, Revenue Bonds, A.T. Still University of Health Sciences, Series 2014, 5.000%, 10/01/39                             | 10/23 at 100.00 | A-   | 567,615   |
| 700   | Missouri Health and Educational Facilities Authority, Revenue Bonds, Rockhurst University, Series 2011A, 6.500%, 10/01/35  | 10/18 at 103.00 | BBB- | 777,966   |
| 550   | Missouri Health and Educational Facilities Authority, Revenue Bonds, Washington University, Series 2011B, 5.000%, 11/15/37   | 11/21 at 100.00 | AAA  | 622,143   |
| 600   | Missouri Health and Educational Facilities Authority, Revenue Bonds, Webster University, Series 2011, 5.000%, 4/01/36  | 4/21 at 100.00  | A2   | 649,698   |
| 250   | Northwest Missouri State University, Housing System Revenue Bonds, Refunding Series 2012, 3.125%, 6/01/29  | No Opt. Call    | A3   | 237,725   |
| 6,275 | Total Education and Civic Organizations Health Care – 37.4% (23.4% of Total Investments)   |                 |      | 6,823,841 |
| 525   | 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-  | 588,089   |
| 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  | B    | 719,804   |
| 560   | 5.000%, 6/01/36  | 6/17 at 100.00  | B    | 506,290   |
| 930   | Cass County, Missouri, Hospital Revenue Bonds, Series 2007, 5.625%, 5/01/38  | 11/16 at 100.00 | BBB- | 939,328   |
| 480   | Clinton County Industrial Development Authority, Missouri, Revenue Bonds, Cameron Regional   | 12/17 at 100.00 | N/R  | 484,027   |

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|       |   |                    |      |           |
|-------|---|--------------------|------|-----------|
|       | Medical Center, Series 2007, 5.000%, 12/01/37<br>Joplin Industrial Development Authority,<br>Missouri, Health Facilities Revenue Bonds,<br>Freeman  | 2/21 at 100.00     | BBB+ | 219,342   |
| 200   | Health System, Series 2011, 5.500%, 2/15/31<br>Joplin Industrial Development Authority,<br>Missouri, Health Facilities Revenue Bonds,<br>Freeman  | 2/24 at 100.00     | BBB+ | 342,704   |
| 315   | Health System, Series 2015, 5.000%, 2/15/35<br>Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>SSM   | 6/24 at 100.00     | AA-  | 567,985   |
| 500   | Health Care, Series 2014A, 5.000%, 6/01/31<br>Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>BJC  | No Opt. Call       | AA   | 252,908   |
| 250   | Health System, Series 2015A, 4.000%, 1/01/45<br>Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>Capital  | 11/20 at<br>100.00 | A3   | 600,329   |
| 540   | Region Medical Center, Series 2011, 5.000%,<br>11/01/27<br>Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>CoxHealth, Series 2013A, 5.000%, 11/15/44 | 11/23 at<br>100.00 | A2   | 1,883,347 |
| 1,730 | Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>CoxHealth, Series 2015A, 5.000%, 11/15/32  | 11/25 at<br>100.00 | A2   | 468,967   |
| 415   | Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>Heartland Regional Medical Center, Series<br>2012, 5.000%, 2/15/37                                   | 2/22 at 100.00     | A1   | 359,103   |
| 335   | Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>Mercy<br>Health, Series 2012, 4.000%, 11/15/42   | No Opt. Call       | AA-  | 251,858   |
| 250   | Missouri Health and Educational Facilities<br>Authority, Health Facilities Revenue Bonds,<br>Saint<br>Luke's Episcopal and Presbyterian Hospitals,<br>Series 2011, 5.000%, 12/01/25               | 12/21 at<br>100.00 | A+   | 562,060   |
| 500   | Missouri Health and Educational Facilities<br>Authority, Health Facility Revenue Bonds, St.<br>Luke's Health System, Series 2010A:  |                    |      |           |
|       | 5.250%, 11/15/25  | 11/20 at<br>100.00 | A+   | 45,654    |
| 40    | 5.000%, 11/15/30  | 11/20 at<br>100.00 | A+   | 2,220,880 |
| 2,000 | Saline County Industrial Development<br>Authority, Missouri, Health Facilities Revenue<br>Bonds,  | 12/20 at<br>100.00 | BBB- | 808,070   |
| 720   |   |                    |      |           |

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|        | John Fitzgibbon Memorial Hospital Inc., Series<br>2010, 5.600%, 12/01/28   |                    |      |            |
| 350    | St. Louis County Industrial Development<br>Authority, Missouri, Healthcare Facilities<br>Revenue   | 11/16 at<br>100.00 | N/R  | 351,334    |
| 11,400 | Bonds, Ranken-Jordan Project, Refunding<br>Series 2007, 5.000%, 11/15/27<br>Total Health Care  |                    |      | 12,172,079 |
|        | Housing/Single Family – 0.7% (0.4% of Total<br>Investments)  |                    |      |            |
| 155    | Missouri Housing Development Commission,<br>Single Family Mortgage Revenue Bonds,<br>Homeownership Loan Program, Series<br>2007A-1, 4.700%, 9/01/27 (Alternative<br>Minimum Tax) | 9/16 at 100.00     | AA+  | 156,759    |
| 70     | Missouri Housing Development Commission,<br>Single Family Mortgage Revenue Bonds,<br>Homeownership Loan Program, Series<br>2007C-1, 4.800%, 9/01/38 (Alternative<br>Minimum Tax) | 3/17 at 100.00     | AA+  | 70,025     |
| 225    | Total Housing/Single Family<br>Long-Term Care – 12.8% (8.0% of Total<br>Investments)   |                    |      | 226,784    |
| 250    | Bridgeton Industrial Development Authority,<br>Missouri, Senior Housing Revenue Bonds, The<br>Sarah<br>Community Project, Series 2013, 4.500%,<br>5/01/28                        | 5/18 at 100.00     | N/R  | 250,172    |
| 500    | Joplin Industrial Development Authority,<br>Missouri, Revenue Bonds, Christian Homes<br>Inc., Series<br>2007F, 5.750%, 5/15/31   | 5/17 at 100.00     | BBB– | 511,600    |
| 475    | Lees Summit Industrial Development<br>Authority, Missouri, Revenue Bonds, John<br>Knox Village<br>Obligated Group, Series 2007A, 5.125%,<br>8/15/32                              | 8/17 at 100.00     | BBB– | 484,723    |
| 250    | Lees Summit Industrial Development<br>Authority, Missouri, Revenue Bonds, John<br>Knox Village<br>Obligated Group, Series 2014A, 5.250%,<br>8/15/39                              | No Opt. Call       | BBB– | 255,912    |
| 250    | Missouri Health and Educational Facilities<br>Authority, Revenue Bonds, Lutheran Senior<br>Services<br>Projects, Series 2011, 6.000%, 2/01/41                                    | 2/21 at 100.00     | BBB+ | 273,552    |
| 500    | Missouri Health and Educational Facilities<br>Authority, Revenue Bonds, Lutheran Senior<br>Services<br>Projects, Series 2014A, 5.000%, 2/01/44                                   | 2/24 at 100.00     | BBB+ | 527,915    |
| 100    |  | No Opt. Call       | BBB– | 101,742    |

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|-------|--|-----------------|------|-----------|
|       | St. Louis County Industrial Development Authority, Missouri, Revenue Bonds, Friendship Village of Chesterfield, Series 2012, 5.000%, 9/01/42                                   |                 |      |           |
| 250   | 5.000%, 9/01/32  | No Opt. Call    | A-   | 266,152   |
| 425   | 5.000%, 9/01/42  | 9/22 at 100.00  | A-   | 445,043   |
|       | St. Louis County Industrial Development Authority, Missouri, Revenue Bonds, Friendship Village of Sunset Hills, Series 2012:   |                 |      |           |
| 430   | 5.875%, 9/01/43  | 9/23 at 100.00  | A-   | 481,768   |
|       | St. Louis County Industrial Development Authority, Missouri, Revenue Bonds, Friendship Village of West County, Series 2007A, 5.500%, 9/01/28                                   |                 |      |           |
| 570   | 5.500%, 9/01/28  | 9/17 at 100.00  | BBB- | 582,626   |
| 4,000 | Total Long-Term Care Tax Obligation/General – 12.5% (7.8% of Total Investments)  |                 |      | 4,181,205 |
|       | Branson Reorganized School District R-4, Taney County, Missouri, General Obligation Bonds, School Building Series 2012, 4.375%, 3/01/32  |                 |      |           |
| 500   | 4.375%, 3/01/32  | 3/22 at 100.00  | A+   | 530,015   |
|       | Fort Zumwalt School District, Callaway County, Missouri, General Obligation Bonds, Refunding & Improvement Series 2015, 4.000%, 3/01/32  |                 |      |           |
| 500   | 4.000%, 3/01/32  | 3/24 at 100.00  | AA+  | 528,035   |
|       | Independence School District, Jackson County, Missouri, General Obligation Bonds, Series 2010, 5.000%, 3/01/27   |                 |      |           |
| 1,685 | 5.000%, 3/01/27  | 3/20 at 100.00  | AA+  | 1,917,227 |
|       | Jackson County Reorganized School District 4, Blue Springs, Missouri, General Obligation Bonds, School Building Series 2013A, 5.000%, 3/01/31                                  |                 |      |           |
| 500   | 5.000%, 3/01/31  | 3/21 at 100.00  | AA   | 565,235   |
|       | Missouri School Boards Association, Lease Participation Certificates, Clay County School District 53 Liberty, Series 2007, 5.250%, 3/01/27 – AGM Insured                       |                 |      |           |
| 500   | 5.250%, 3/01/27 – AGM Insured  | 3/17 at 100.00  | AA   | 530,260   |
| 3,685 | Total Tax Obligation/General Tax Obligation/Limited – 24.1% (15.0% of Total Investments)   |                 |      | 4,070,772 |
|       | Bi-State Development Agency of the Missouri-Illinois Metropolitan District, Mass Transit Sales Tax Appropriation Bonds, Refunding Combined Lien Series 2013A, 5.000%, 10/01/33 |                 |      |           |
| 910   | 5.000%, 10/01/33   | 10/22 at 100.00 | AA+  | 1,040,248 |

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| 350 | Blue Springs, Missouri, Special Obligation Tax Increment Bonds, Adams Farm Project, Special Districts Refunding & Improvement Series 2015A, 4.750%, 6/01/30 | 6/24 at 100.00  | N/R  | 348,323 |
| 625 | Excelsior Springs Community Center, Missouri, Sales Tax Revenue Bonds, Series 2014, 4.000%, 3/01/27 – AGM Insured   | 3/23 at 100.00  | AA   | 670,687 |
| 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  | 270,484 |
| 430 | Government of Guam, Business Privilege Tax Bonds, Series 2012B-1, 5.000%, 1/01/42   | 1/22 at 100.00  | A    | 462,538 |
| 180 | Howard Bend Levee District, St. Louis County, Missouri, Levee District Improvement Bonds, Series 2013B: 4.875%, 3/01/33                                     | 3/23 at 100.00  | BBB+ | 188,455 |
| 115 | 5.000%, 3/01/38   | 3/23 at 100.00  | BBB+ | 120,339 |
| 485 | Jackson County, Missouri, Special Obligation Bonds, Truman Medical Center Project, Series 2011B, 4.350%, 12/01/23   | 12/21 at 100.00 | Aa3  | 537,686 |
| 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–  | 327,555 |
| 475 | Kansas City Tax Increment Financing Commission, Missouri, Tax Increment Revenue Bonds, Briarcliff West Project, Series 2006A, 5.400%, 6/01/24               | 6/16 at 100.00  | N/R  | 480,382 |
| 325 | Kansas City, Missouri, Special Obligation Bonds, Downtown Redevelopment District, Series 2014C, 5.000%, 9/01/33   | 9/23 at 100.00  | AA–  | 365,027 |
| 245 | Missouri Development Finance Board, Infrastructure Facilities Revenue Bonds, City of Branson – Branson Landing Project, Series 2015A, 4.000%, 6/01/34       | 6/23 at 100.00  | A    | 241,614 |
| 180 | Monarch-Chesterfield Levee District, Saint Louis County, Missouri, Levee District Improvement Bonds, Series 1999, 5.750%, 3/01/19 – NPFPG Insured           | 3/16 at 100.00  | AA–  | 180,794 |
| 500 | Osage Beach, Missouri, Tax Increment Revenue Bonds, Prewitts Point Transportation Development District, Series 2006, 5.000%, 5/01/23                        | 11/15 at 100.00 | N/R  | 490,305 |



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| 1,500 | Puerto Rico Sales Tax Financing Corporation,<br>Sales Tax Revenue Bonds, Series 2007A,<br>0.000%,<br>8/01/41 – NPMG Insured   | No Opt. Call       | AA–     | 298,680   |
| 250   | Saint Louis County Industrial Development<br>Authority, Missouri, Sales Tax Revenue<br>Bonds,<br>Chesterfield Blue Valley Community<br>Improvement District Project, Series 2014A,<br>5.250%, 7/01/44 | 7/24 at 100.00     | N/R     | 252,738   |
| 600   | Springfield, Missouri, Special Obligation<br>Bonds, Sewer System Improvements Project,<br>Series<br>2015, 4.000%, 4/01/35   | 4/25 at 100.00     | Aa2     | 613,908   |
| 340   | St. Joseph Industrial Development Authority,<br>Missouri, Tax Increment Bonds, Shoppes at<br>North<br>Village Project, Series 2005A:  | 11/15 at<br>100.00 | N/R     | 340,065   |
| 400   | 5.375%, 11/01/24  | 11/15 at<br>100.00 | N/R     | 400,096   |
| 200   | 5.500%, 11/01/27<br>St. Joseph Industrial Development Authority,<br>Missouri, Tax Increment Bonds, Shoppes at<br>North<br>Village Project, Series 2005B, 5.500%,<br>11/01/27                          | 11/15 at<br>100.00 | N/R     | 200,184   |
| 8,725 | Total Tax Obligation/Limited<br>Transportation – 12.9% (8.0% of Total<br>Investments)   |                    |         | 7,830,108 |
| 335   | Guam International Airport Authority,<br>Revenue Bonds, Series 2013B, 5.500%,<br>10/01/33 –<br>AGM Insured  | 10/23 at<br>100.00 | AA      | 378,034   |
| 1,000 | Saint Louis, Missouri, Airport Revenue Bonds,<br>Lambert-St. Louis International Airport, Series<br>2005, 5.500%, 7/01/18 – NPMG Insured  | No Opt. Call       | AA–     | 1,123,290 |
| 2,500 | Saint Louis, Missouri, Airport Revenue Bonds,<br>Lambert-St. Louis International Airport, Series<br>2007A, 5.000%, 7/01/21 – AGM Insured  | 7/17 at 100.00     | AA      | 2,684,175 |
| 3,835 | Total Transportation<br>U.S. Guaranteed – 12.4% (7.8% of Total<br>Investments) (4)  |                    |         | 4,185,499 |
| 600   | Carroll County Public Water Supply District 1,<br>Missouri, Water System Revenue Bonds,<br>Refunding<br>Series 2009, 6.000%, 3/01/39 (Pre-refunded<br>3/01/18)  | 3/18 at 100.00     | A– (4)  | 677,220   |
| 600   | Chesterfield, Missouri, Certificates of<br>Participation, Series 2005, 5.000%, 12/01/24<br>(Pre-refunded 12/01/15) – FGIC Insured   | 12/15 at<br>100.00 | Aa1 (4) | 607,332   |

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| 110   | Missouri Joint Municipal Electric Utility<br>Commission, Power Project Revenue Bonds,<br>Iatan 2<br>Project Series 2006A, 4.125%, 1/01/21<br>(Pre-refunded 1/01/16) – AMBAC Insured  | 1/16 at 100.00     | A2 (4)  | 111,462   |
| 500   | Missouri Joint Municipal Electric Utility<br>Commission, Power Project Revenue Bonds,<br>Plum Point<br>Project, Series 2006, 5.000%, 1/01/34<br>(Pre-refunded 1/01/16) – NPMFG Insured   | 1/16 at 100.00     | AA- (4) | 508,105   |
| 1,320 | Springfield Public Building Corporation,<br>Missouri, Lease Revenue Bonds, Jordan Valley<br>Park<br>Projects, Series 2000A, 6.125%, 6/01/21 –<br>AMBAC Insured (ETM)   | 11/15 at<br>100.00 | N/R (4) | 1,557,917 |
| 500   | St. Louis County, Missouri, GNMA<br>Collateralized Mortgage Revenue Bonds,<br>Series 1993D, 5.650%,<br>7/01/20 (Alternative Minimum Tax) (ETM)   | No Opt. Call       | AA+ (4) | 587,075   |
| 3,630 | Total U.S. Guaranteed<br>Utilities – 13.2% (8.3% of Total Investments)   |                    |         | 4,049,111 |
| 2,965 | Missouri Environmental Improvement and<br>Energy Resources Authority, Water Facility<br>Revenue<br>Bonds, Missouri-American Water Company,<br>Series 2006, 4.600%, 12/01/36 – AMBAC<br>Insured<br>(Alternative Minimum Tax) (UB) (5) | 12/16 at<br>100.00 | AA+     | 3,012,410 |
| 350   | Missouri Joint Municipal Electric Utility<br>Commission, Power Project Revenue Bonds,<br>Plum Point<br>Project, Refunding Series 2014A, 5.000%,<br>1/01/32   | 1/25 at 100.00     | A-      | 392,665   |
| 400   | Missouri Joint Municipal Electric Utility<br>Commission, Power Supply System Revenue<br>Bonds, MoPEP<br>Facilities, Series 2012:<br>5.000%, 1/01/32  | 1/21 at 100.00     | A2      | 434,620   |
| 425   | 5.000%, 1/01/37  | 1/21 at 100.00     | A2      | 459,187   |
| 4,140 | Total Utilities<br>Water and Sewer – 9.2% (5.8% of Total<br>Investments)   |                    |         | 4,298,882 |
| 200   | Metropolitan St. Louis Sewerage District,<br>Missouri, Wastewater System Revenue Bonds,<br>Series<br>2006C, 5.000%, 5/01/36 – NPMFG Insured  | 5/17 at 100.00     | AAA     | 211,852   |
| 2,000 | Metropolitan St. Louis Sewerage District,<br>Missouri, Wastewater System Revenue Bonds,<br>Series<br>2012A, 5.000%, 5/01/42  | 5/22 at 100.00     | AAA     | 2,236,140 |
| 500   |  | 1/25 at 100.00     | Aa3     | 560,525   |

|           |   |               |
|-----------|---|---------------|
|           | Missouri Environmental Improvement and Energy Resources Authority, Water Facility Revenue |               |
|           | Bonds, Tri-County Water Authority, Series 2015, 5.000%, 1/01/40                           |               |
| 2,700     | Total Water and Sewer   | 3,008,517     |
| \$ 49,670 | Total Long-Term Investments (cost \$49,060,615)   | 52,108,757    |
|           | Floating Rate Obligations – (6.8)%  | (2,225,000)   |
|           | Variable Rate MuniFund Term Preferred Shares, at Liquidation Value – (55.3)% (6)          | (18,000,000)  |
|           | Other Assets Less Liabilities – 2.0%  | 659,752       |
|           | Net Assets Applicable to Common Shares – 100%   | \$ 32,543,509 |

### Fair Value Measurements

Fair value is defined as the price that would be received 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        | \$ —    | \$52,108,757 | \$ —    | \$52,108,757 |

### 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.

As of August 31, 2015, the cost of investments was \$46,752,902.

Gross unrealized appreciation and gross unrealized depreciation of investments as of August 31, 2015, were as follows:

Gross unrealized:

|   |             |
|---|-------------|
| Appreciation  | \$3,374,212 |
| Depreciation  | (243,451)   |
| Net unrealized appreciation (depreciation) of investments | \$3,130,761 |

- (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 Investors 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) Investment, or portion of investment, has been pledged to collateralize the net payment obligations for investments in inverse floating rate transactions.  
Variable Rate MuniFund Term Preferred Shares, at Liquidation Value as a percentage of Total
  - (6) Investments  
is 34.5%.
- (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.

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

Date: October 30, 2015

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

Date: October 30, 2015

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

Date: October 30, 2015