

NUVEEN MASSACHUSETTS PREMIUM INCOME MUNICIPAL FUND  
Form N-Q  
April 29, 2013

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 811-7484

Nuveen Massachusetts 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: 2/28/13

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 Massachusetts Premium Income  
Municipal Fund (NMT)  
February 28, 2013

| Principal Amount (000) | Description (1)   | Optional Call Provisions (2) | Ratings (3) | Value        |
|------------------------|---|------------------------------|-------------|--------------|
| \$ 1,425               | Consumer Discretionary – 1.5% (1.0% of Total Investments)<br>Boston Industrial Development Financing Authority, Massachusetts, Senior Revenue Bonds,<br>Crosstown Center Project, Series 2002, 6.500%, 9/01/35 (Alternative Minimum Tax) Education and Civic Organizations – 32.6% (22.0% of Total Investments) | 9/13 at 101.00               | Caa3        | \$ 1,124,966 |
| 1,000                  | Massachusetts Development Finance Agency Revenue Bonds, Lesley University Issue Series B-1 and B-2, 5.250%, 7/01/33 – AGM Insured   | 7/21 at 100.00               | AA–         | 1,150,190    |
| 375                    | Massachusetts Development Finance Agency, Revenue Bonds, Boston University, Series 2009V-1, 5.000%, 10/01/29  | 10/19 at 100.00              | A1          | 423,491      |
| 1,000                  | Massachusetts Development Finance Agency, Revenue Bonds, Emerson College, Series 2010A, 5.000%, 1/01/40   | 1/20 at 100.00               | BBB+        | 1,071,960    |
| 455                    | Massachusetts Development Finance Agency, Revenue Bonds, Merrimack College, Series 2012A, 5.250%, 7/01/42   | 7/22 at 100.00               | BBB–        | 505,127      |
| 1,000                  | Massachusetts Development Finance Agency, Revenue Bonds, Sterling and Francine Clark Art Institute, Series 2011A, 5.000%, 7/01/41   | 7/21 at 100.00               | AA          | 1,132,000    |
| 2,000                  | Massachusetts Development Finance Agency, Revenue Bonds, The Broad Institute, Series 2011A, 5.250%, 4/01/37   | 4/21 at 100.00               | AA–         | 2,272,640    |
| 1,045                  | Massachusetts Development Finance Agency, Revenue Bonds, Worcester Polytechnic Institute,   | 9/17 at 100.00               | A+          | 1,134,671    |

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| 700   | Series 2007, 5.000%, 9/01/37 – NPF<br>Insured<br>Massachusetts Development Finance<br>Agency, Revenue Bonds, Worcester<br>Polytechnic Institute,                              | 9/22 at 100.00     | A+   | 779,212   |
| 635   | Series 2012, 5.000%, 9/01/50<br>Massachusetts Development Finance<br>Authority, Revenue Bonds, Curry<br>College, Series 2000A,  | 9/13 at 100.00     | BBB  | 636,797   |
| 1,500 | 6.000%, 3/01/20 – ACA Insured<br>Massachusetts Development Finance<br>Authority, Revenue Bonds, WGBH<br>Educational Foundation,   | No Opt. Call       | A    | 2,008,125 |
| 4,850 | Series 2002A, 5.750%, 1/01/42 –<br>AMBAC Insured<br>Massachusetts Development Finance<br>Authority, Revenue Bonds, WGBH<br>Educational Foundation,                            | 1/18 at 100.00     | AA–  | 5,165,638 |
| 1,090 | Series 2008A, 5.000%, 1/01/42 –<br>AGC Insured<br>Massachusetts Development Finance<br>Authority, Revenue Refunding<br>Bonds, Boston University,                              | No Opt. Call       | A1   | 1,414,635 |
| 1,000 | Series 1999P, 6.000%, 5/15/29<br>Massachusetts Educational<br>Financing Authority, Educational<br>Loan Revenue, Series 2011J,<br>5.625%, 7/01/33 (Alternative<br>Minimum Tax) | 7/21 at 100.00     | AA   | 1,086,510 |
| 2,000 | Massachusetts Health and<br>Educational Facilities Authority,<br>Revenue Bonds, Boston College,<br>Series 2003N, 5.250%, 6/01/18  | 6/13 at 100.00     | AA–  | 2,025,620 |
| 1,000 | Massachusetts Health and<br>Educational Facilities Authority,<br>Revenue Bonds, Springfield<br>College,   | 10/19 at<br>100.00 | Baa1 | 1,100,920 |
| 345   | Series 2010, 5.500%, 10/15/31<br>Massachusetts Health and<br>Educational Facilities Authority,<br>Revenue Bonds, Tufts University,<br>Series 2008O, 5.375%, 8/15/38           | 8/18 at 100.00     | Aa2  | 407,624   |
| 500   | Massachusetts Health and<br>Educational Facilities Authority,<br>Revenue Bonds, Wellesley<br>College, Series 2003H, 5.000%,<br>7/01/26  | 7/13 at 100.00     | AA+  | 506,785   |
| 525   | Massachusetts Health and<br>Educational Facilities Authority,<br>Revenue Bonds, Wheaton<br>College  | 1/20 at 100.00     | A2   | 581,102   |
| 555   | Issues, Series 2010F, 5.000%,<br>1/01/41<br>Massachusetts Health and<br>Educational Facilities Authority,<br>Revenue Bonds, Williams<br>College,                              | 7/13 at 100.00     | AA+  | 563,930   |
| 210   | Series 2003H, 5.000%, 7/01/21   | No Opt. Call       | BBB  | 208,278   |

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|--------|---|--------------------|------|--|------------|
|        | Puerto Rico Industrial, Tourist, Educational,<br>Medical and Environmental Control Facilities<br>Fin<br>Authority, Higher Ed Rev and Rev Refunding<br>Bonds, University of the Sacred Heart Project,<br>Series 2012, 4.375%, 10/01/31 |                    |      |  |            |
| 21,785 | Total Education and Civic Organizations<br>Health Care – 27.3% (18.3% of Total<br>Investments)  |                    |      |  | 24,175,255 |
|        | Massachusetts Development Finance Agency,<br>Revenue Bonds, Berkshire Health Systems,<br>Series 2012G:  |                    |      |  |            |
| 895    | 5.000%, 10/01/29  | 10/21 at<br>100.00 | A3   |  | 1,007,636  |
| 700    | 5.000%, 10/01/31  | 10/21 at<br>100.00 | A3   |  | 785,316    |
| 1,000  | Massachusetts Development Finance Agency,<br>Revenue Bonds, Partners HealthCare System,<br>Series<br>2011K-6, 5.375%, 7/01/41   | 7/20 at 100.00     | AA   |  | 1,136,710  |
| 300    | Massachusetts Development Finance Agency,<br>Revenue Bonds, Southcoast Health System<br>Obligated   | 7/23 at 100.00     | A    |  | 338,334    |
| 1,000  | Group Issue, Series 2013F, 5.000%, 7/01/37<br>Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Cape<br>Cod Health Care<br>Inc., Series 2001C, 5.250%, 11/15/31 – RAAI<br>Insured                          | 5/13 at 100.50     | BBB+ |  | 1,005,900  |
| 2,300  | Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds,<br>Caregroup Inc.,<br>Series B1 Capital Asset Program Converted<br>June 13,2008:   |                    |      |  |            |
|        | 5.375%, 2/01/26 – NPMFG Insured   | 8/18 at 100.00     | A–   |  | 2,629,843  |
| 770    | 5.375%, 2/01/28 – NPMFG Insured   | 8/18 at 100.00     | A–   |  | 875,197    |
| 1,500  | Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds,<br>Caregroup Inc.,<br>Series B2, Capital Asset Program, Converted<br>June 9, 2009, 5.375%, 2/01/27 – NPMFG Insured                                       | 8/18 at 100.00     | A–   |  | 1,708,500  |
| 1,000  | Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Children’s<br>Hospital,<br>Series 2009M, 5.500%, 12/01/39  | 12/19 at<br>100.00 | AA   |  | 1,139,710  |
| 935    | Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Emerson<br>Hospital,<br>Series 2005E, 5.000%, 8/15/35 – RAAI Insured   | 8/15 at 100.00     | N/R  |  | 936,057    |
| 1,000  | Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Lahey  | 8/15 at 100.00     | A+   |  | 1,091,520  |

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|        | Clinic Medical<br>Center, Series 2005C, 5.000%, 8/15/21 – FGIC<br>Insured<br>Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Lahey<br>Medical | 8/17 at 100.00 | A+   | 2,178,380  |
| 2,000  | Center, Series 2007D, 5.250%, 8/15/28<br>Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Milford<br>Regional                                  | 7/17 at 100.00 | BBB– | 595,436    |
| 585    | Medical Center, Series 2007E, 5.000%,<br>7/15/32<br>Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, Milton<br>Hospital                        | 7/15 at 100.00 | BB–  | 1,034,870  |
| 1,000  | Project, Series 2005D, 5.250%, 7/01/30<br>Massachusetts Health and Educational<br>Facilities Authority, Revenue Bonds, UMass<br>Memorial                                   | 7/15 at 100.00 | A–   | 1,510,993  |
| 1,445  | Health Care, Series 2005D, 5.000%, 7/01/33<br>Massachusetts State, Health and Educational<br>Facilities Authority, Partners HealthCare<br>System                           | 7/17 at 100.00 | AA   | 2,206,860  |
| 2,000  | Inc., Series 2007G, 5.000%, 7/01/32<br>Total Health Care<br>Housing/Multifamily – 3.9% (2.6% of Total<br>Investments)  |                |      | 20,181,262 |
| 18,430 | Massachusetts Development Finance<br>Authority, Multifamily Housing Revenue<br>Bonds, Emerson Manor  | 7/17 at 100.00 | BB   | 1,346,218  |
| 1,290  | Project, Series 2007, 4.800%, 7/20/48<br>Massachusetts Housing Finance Agency,<br>Housing Revenue Bonds, Series 2003S,<br>5.050%, 12/01/23<br>(Alternative Minimum Tax)    | 6/13 at 100.00 | AA–  | 501,810    |
| 500    | Somerville Housing Authority, Massachusetts,<br>GNMA Collateralized Mortgage Revenue<br>Bonds,<br>Clarendon Hill Towers, Series 2002, 5.200%,<br>11/20/22                  | 5/13 at 102.00 | N/R  | 1,032,230  |
| 1,000  | Total Housing/Multifamily<br>Housing/Single Family – 3.8% (2.6% of Total<br>Investments)   |                |      | 2,880,258  |
| 2,790  | Massachusetts Housing Finance Agency,<br>Single Family Housing Revenue Bonds, Series<br>2006-126,<br>4.625%, 6/01/32 (Alternative Minimum Tax)                             | 6/16 at 100.00 | AA   | 1,544,700  |
| 1,500  | Massachusetts Housing Finance Agency,<br>Single Family Housing Revenue Bonds, Series<br>2008, Trust<br>3145, 14.517%, 6/01/16 (IF)   | No Opt. Call   | AA   | 1,280,589  |
| 985    |  |                |      |            |

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| 2,485 | Total Housing/Single Family<br>Industrials – 0.8% (0.5% of Total Investments)<br>Massachusetts Development Finance Agency,<br>Pioneer Valley Resource Recovery Revenue<br>Bonds,  |                    |     | 2,825,289 |
| 170   | Eco/Springfield LLC, Series 2006, 5.875%,<br>7/01/14 (Alternative Minimum Tax)<br>Massachusetts Development Finance Agency,<br>Solid Waste Disposal Revenue Bonds, Waste<br>Management<br>Inc., Series 2003, 5.450%, 6/01/14                        | No Opt. Call       | N/R | 169,293   |
| 400   | Total Industrials<br>Long-Term Care – 4.9% (3.3% of Total<br>Investments)<br>Boston, Massachusetts, FHA-Insured<br>Mortgage Revenue Bonds, Deutsches<br>Altenheim Inc., Series<br>1998A, 6.125%, 10/01/31   | No Opt. Call       | BBB | 422,844   |
| 570   | Massachusetts Development Finance Agency,<br>Revenue Bonds, Carleton-Willard Village,<br>Series<br>2010, 5.625%, 12/01/30   | 4/13 at 101.00     | AAA | 1,285,837 |
| 1,270 | Massachusetts Development Finance Agency,<br>Revenue Bonds, Orchard Cove, Series 2007,<br>5.250%, 10/01/26  | 12/19 at<br>100.00 | A–  | 205,468   |
| 185   | Massachusetts Industrial Finance Agency, First<br>Mortgage Revenue Bonds, Berkshire<br>Retirement<br>Community, Series 1994B, 4.750%, 7/01/17   | 4/13 at 102.00     | N/R | 1,717,234 |
| 1,685 | Total Long-Term Care<br>Tax Obligation/General – 16.9% (11.3% of<br>Total Investments)<br>Ashland, Massachusetts, General Obligation<br>Bonds, Series 2004, 5.250%, 5/15/23 –<br>AMBAC Insured  | 5/13 at 100.00     | BBB | 400,592   |
| 400   | Boston, Massachusetts, General Obligation<br>Bonds, Series 2005A, 5.000%, 1/01/17   | 5/15 at 100.00     | Aa2 | 552,090   |
| 3,540 | Fall River, Massachusetts, General Obligation<br>Bonds, Series 2003, 5.000%, 2/01/21 – AGM<br>Insured<br>Hampden-Wilbraham Regional School<br>District, Hampden County, Massachusetts,<br>General Obligation<br>Bonds, Series 2011, 5.000%, 2/15/41 | 1/15 at 100.00     | Aaa | 325,905   |
| 500   | Hudson, Massachusetts, General Obligation<br>Bonds, Municipal Purpose Loan Series 2011,<br>5.000%, 2/15/32  | 2/14 at 100.00     | AA– | 126,750   |
| 300   | Massachusetts Bay Transportation Authority,<br>General Obligation Transportation System<br>Bonds,<br>Series 1991A, 7.000%, 3/01/21  | 2/21 at 100.00     | Aa3 | 1,120,050 |
| 125   |   | 2/20 at 100.00     | AA  | 1,424,163 |
| 1,000 |   | No Opt. Call       | AA+ | 1,328,392 |

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| 1,275  | Massachusetts, General Obligation Bonds,<br>Consolidated Loan, Series 2001D, 6.000%,<br>11/01/13 –<br>NCFG Insured                      | No Opt. Call       | AA+  | 1,325,783  |
| 1,260  | Norwell, Massachusetts, General Obligation<br>Bonds, Series 2003, 5.000%, 11/15/20 – FGIC<br>Insured                                    | No Opt. Call       | AAA  | 1,585,723  |
| 1,000  | Puerto Rico, General Obligation and Public<br>Improvement Bonds, Series 2002A, 5.500%,<br>7/01/29 –<br>FGIC Insured                     | No Opt. Call       | Baa3 | 1,053,590  |
| 2,000  | Quincy, Massachusetts, General Obligation<br>Bonds, Series 2011, 5.250%, 12/01/38   | 12/20 at<br>100.00 | Aa2  | 2,299,620  |
| 1,220  | Worcester, Massachusetts, General Obligation<br>Bonds, Series 2005A, 5.000%, 7/01/19 –<br>FGIC Insured                                  | 7/15 at 100.00     | Aa3  | 1,341,915  |
| 10,940 | Total Tax Obligation/General<br>Tax Obligation/Limited – 17.9% (12.1% of<br>Total Investments)  |                    |      | 12,483,981 |
| 210    | Martha’s Vineyard Land Bank, Massachusetts,<br>Revenue Bonds, Series 2004, 5.000%, 5/01/26 –5/14 at 100.00<br>AMBAC Insured             |                    | A–   | 219,555    |
| 975    | Massachusetts Bay Transportation Authority,<br>Sales Tax Revenue Bonds, Senior Lien Series<br>2006C,<br>5.000%, 7/01/26                 | 7/18 at 100.00     | AAA  | 1,154,371  |
| 385    | Massachusetts Bay Transportation Authority,<br>Senior Lien Sales Tax Revenue Refunding<br>Bonds,<br>Series 2004C, 5.250%, 7/01/21       | No Opt. Call       | AAA  | 495,187    |
| 1,200  | Massachusetts College Building Authority,<br>Project Revenue Bonds, Series 2008A,<br>5.000%,<br>5/01/33 – AGC Insured                   | 5/18 at 100.00     | AA   | 1,370,340  |
| 1,000  | Massachusetts College Building Authority,<br>Project Revenue Refunding Bonds, Series<br>2003B,<br>5.375%, 5/01/23 – SYNCORA GTY Insured | No Opt. Call       | Aa2  | 1,276,370  |
| 570    | Massachusetts College Building Authority,<br>Revenue Bonds, Refunding Series 2012B,<br>5.000%, 5/01/37                                  | 5/22 at 100.00     | AA   | 660,077    |
| 1,000  | Massachusetts School Building Authority,<br>Dedicated Sales Tax Revenue Bonds, Series<br>2011B,<br>5.000%, 10/15/41                     | 10/21 at<br>100.00 | AA+  | 1,149,000  |
| 540    | Massachusetts State, Special Obligation<br>Dedicated Tax Revenue Bonds, Series 2005,<br>5.000%,<br>1/01/20 – FGIC Insured               | No Opt. Call       | A1   | 642,141    |
| 240    | Puerto Rico Infrastructure Financing<br>Authority, Special Tax Revenue Bonds, Series  | No Opt. Call       | BBB+ | 35,177     |

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| 1,000  | 2005A,<br>0.000%, 7/01/43 – AMBAC Insured<br>Puerto Rico Sales Tax Financing Corporation,<br>Sales Tax Revenue Bonds, First Subordinate<br>Series                           | 8/19 at 100.00 | A+   | 1,104,850  |
| 1,650  | 2009A, 6.000%, 8/01/42<br>Puerto Rico Sales Tax Financing Corporation,<br>Sales Tax Revenue Bonds, First Subordinate<br>Series  | No Opt. Call   | A+   | 376,679    |
| 3,000  | 2010C, 0.000%, 8/01/38<br>Puerto Rico Sales Tax Financing Corporation,<br>Sales Tax Revenue Bonds, First Subordinate<br>Series  | 8/21 at 100.00 | A+   | 3,126,540  |
| 235    | 2011A-1, 5.000%, 8/01/43<br>Puerto Rico, Highway Revenue Bonds,<br>Highway and Transportation Authority, Series<br>2003AA,  | No Opt. Call   | BBB+ | 257,452    |
| 1,300  | 5.500%, 7/01/19 – NPMFG Insured<br>Virgin Islands Public Finance Authority, Gross<br>Receipts Taxes Loan Note, Refunding Series   | No Opt. Call   | BBB+ | 1,424,917  |
| 13,305 | 2012A, 5.000%, 10/01/32<br>Total Tax Obligation/Limited<br>Transportation – 8.9% (6.0% of Total<br>Investments)   |                |      | 13,292,656 |
| 500    | Massachusetts Port Authority, Airport System<br>Revenue Bonds, Series 2010A, 5.000%,<br>7/01/30   | 7/20 at 100.00 | AA   | 596,365    |
| 350    | Massachusetts Port Authority, Revenue Bonds,<br>Series 2012A, 5.000%, 7/01/42<br>(Alternative Minimum Tax)  | 7/22 at 100.00 | AA   | 389,592    |
| 1,000  | Massachusetts Port Authority, Special<br>Facilities Revenue Bonds, BOSFUEL<br>Corporation, Series   | 7/17 at 100.00 | A2   | 1,086,800  |
| 725    | 2007, 5.000%, 7/01/32 – FGIC Insured<br>(Alternative Minimum Tax)<br>Massachusetts Port Authority, Special<br>Facilities Revenue Bonds, Delta Air Lines Inc.,<br>Series     | 7/13 at 100.00 | N/R  | 724,949    |
| 3,285  | 2001A, 5.000%, 1/01/27 – AMBAC Insured<br>(Alternative Minimum Tax)<br>Massachusetts Port Authority, Special<br>Facilities Revenue Bonds, US Airways Group<br>Inc., Series  | 9/13 at 100.00 | Baa2 | 3,293,672  |
| 470    | 1996A, 5.750%, 9/01/16 – NPMFG Insured<br>(Alternative Minimum Tax)<br>Metropolitan Boston Transit Parking<br>Corporation, Massachusetts, Systemwide<br>Senior Lien Parking | 7/21 at 100.00 | A+   | 526,193    |
| 6,330  | Revenue Bonds, Series 2011, 5.000%, 7/01/41<br>Total Transportation   |                |      | 6,617,571  |

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|       | U.S. Guaranteed – 22.6% (15.2% of Total Investments) (4)   |                 |         |           |
| 2,000 | Boston Water and Sewerage Commission, Massachusetts, General Revenue Bonds, Senior Series 2004A, 5.000%, 11/01/25 (Pre-refunded 11/01/14)  | 11/14 at 100.00 | AA+ (4) | 2,161,680 |
| 650   | Boston, Massachusetts, General Obligation Bonds, Series 2005A, 5.000%, 1/01/17 (Pre-refunded 1/01/15)  | 1/15 at 100.00  | N/R (4) | 707,259   |
| 1,115 | Massachusetts Bay Transportation Authority, General Obligation Transportation System Bonds, Series 1991A, 7.000%, 3/01/21 (Pre-refunded 3/01/17)   | 3/17 at 100.00  | N/R (4) | 1,258,434 |
| 25    | Massachusetts Bay Transportation Authority, Sales Tax Revenue Bonds, Senior Lien Series 2006C, 5.000%, 7/01/26 (Pre-refunded 7/01/18)  | 7/18 at 100.00  | AAA     | 30,436    |
| 550   | Massachusetts College Building Authority, Project Revenue Bonds, Series 2004A, 5.000%, 5/01/19 (Pre-refunded 5/01/14) – NPMG Insured   | 5/14 at 100.00  | Aa2 (4) | 580,685   |
| 325   | Massachusetts College Building Authority, Project Revenue Bonds, Series 2006A, 5.000%, 5/01/31 (Pre-refunded 5/01/16) – AMBAC Insured  | 5/16 at 100.00  | Aa2 (4) | 370,588   |
| 1,000 | Massachusetts Development Finance Authority, Revenue Bonds, Massachusetts College of Pharmacy and Allied Health Sciences, Series 2003C, 5.750%, 7/01/33 (Pre-refunded 7/01/13)               | 7/13 at 101.00  | A (4)   | 1,029,030 |
| 1,745 | Massachusetts Development Finance Authority, Revenue Bonds, Massachusetts College of Pharmacy and Allied Health Sciences, Series 2005D, 5.000%, 7/01/27 (Pre-refunded 7/01/15) – AGC Insured | 7/15 at 100.00  | AA– (4) | 1,934,716 |
| 750   | Massachusetts Development Finance Authority, Revenue Bonds, Milton Academy, Series 2003A, 5.000%, 9/01/19 (Pre-refunded 9/01/13)   | 9/13 at 100.00  | AA– (4) | 768,158   |
| 410   | Massachusetts Health and Educational Facilities Authority, Revenue Bonds, CareGroup Inc., Series 1998A, 5.000%, 7/01/25 (Pre-refunded 7/01/21) – NPMG Insured                                | 7/21 at 100.00  | BBB (4) | 499,310   |
| 155   | Massachusetts Port Authority, Revenue Bonds, Series 1982, 13.000%, 7/01/13 (ETM)   | 5/13 at 100.00  | AAA     | 161,161   |
| 2,000 | Massachusetts Port Authority, Revenue Bonds, Series 2003A, 5.000%, 7/01/33   | 7/13 at 100.00  | AA (4)  | 2,032,940 |

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| 1,300  | (Pre-refunded 7/01/13) – NPMG Insured<br>Massachusetts School Building Authority,<br>Dedicated Sales Tax Revenue Bonds, Series<br>2005A,<br>5.000%, 8/15/20 (Pre-refunded 8/15/15) – AGM<br>Insured (UB) | 8/15 at 100.00     | AA+      | 1,447,927  |
| 1,500  | Massachusetts State, Special Obligation<br>Dedicated Tax Revenue Bonds, Series 2004,<br>5.250%,<br>1/01/25 (Pre-refunded 1/01/14) – FGIC Insured   | 1/14 at 100.00     | A1 (4)   | 1,563,990  |
| 750    | Massachusetts Water Pollution Abatement<br>Trust, Pooled Loan Program Bonds, Series<br>2005-11,<br>4.500%, 8/01/29 (Pre-refunded 8/01/15)  | 8/15 at 100.00     | AAA      | 826,628    |
| 1,065  | Puerto Rico, Highway Revenue Bonds,<br>Highway and Transportation Authority, Series<br>2003AA,<br>5.500%, 7/01/19 – NPMG Insured (ETM)   | No Opt. Call       | Baa2 (4) | 1,358,386  |
| 15,340 | Total U.S. Guaranteed<br>Utilities – 1.3% (0.9% of Total Investments)  |                    |          | 16,731,328 |
| 185    | Guam Power Authority, Revenue Bonds,<br>Series 2012A, 5.000%, 10/01/30 – AGM<br>Insured  | 10/22 at<br>100.00 | AA–      | 211,736    |
| 750    | Massachusetts Development Finance Agency,<br>Resource Recovery Revenue Refunding<br>Bonds,<br>Covanta Energy Project, Series 2012B,<br>4.875%, 11/01/42  | 11/17 at<br>100.00 | BB+      | 774,458    |
| 935    | Total Utilities<br>Water and Sewer – 6.2% (4.2% of Total<br>Investments)   |                    |          | 986,194    |
| 500    | Boston Water and Sewerage Commission,<br>Massachusetts, General Revenue Bonds,<br>Senior Lien<br>Refunding Series 2010A, 5.000%, 11/01/30  | 11/19 at<br>100.00 | AA+      | 590,370    |
| 60     | Massachusetts Water Pollution Abatement<br>Trust, Pooled Loan Program Bonds, Series<br>2003-9,<br>5.000%, 8/01/22  | 8/13 at 100.00     | AAA      | 61,200     |
| 285    | Massachusetts Water Pollution Abatement<br>Trust, Pooled Loan Program Bonds, Series<br>2004-10,<br>5.000%, 8/01/26   | 8/14 at 100.00     | AAA      | 301,783    |
| 1,000  | Massachusetts Water Pollution Abatement<br>Trust, Pooled Loan Program Bonds, Series<br>2006-12,<br>4.375%, 8/01/31 (UB)  | 8/16 at 100.00     | AAA      | 1,059,640  |
| 200    | Massachusetts Water Pollution Abatement<br>Trust, Revenue Bonds, MWRA Loan Program, Series 2002A, 5.250%, 8/01/20  | 5/13 at 100.00     | AAA      | 200,895    |
| 1,500  |  | 8/17 at 100.00     | AA+      | 1,729,710  |

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|            |   |                |     |               |
|------------|---|----------------|-----|---------------|
|            | Massachusetts Water Resources Authority,<br>General Revenue Bonds, Series 2005A,<br>5.000%,<br>8/01/28 – NPMF Insured |                |     |               |
| 625        | Massachusetts Water Resources Authority,<br>General Revenue Bonds, Series 2006A,<br>4.000%, 8/01/46                   | 8/16 at 100.00 | AA+ | 640,188       |
| 4,170      | Total Water and Sewer   |                |     | 4,583,786     |
| \$ 102,045 | Total Investments (cost \$102,359,947) –<br>148.6%  |                |     | 110,083,814   |
|            | Floating Rate Obligations – (1.9)%  |                |     | (1,435,000)   |
|            | MuniFund Term Preferred Shares, at<br>Liquidation Value – (49.5)% (5)   |                |     | (36,645,000)  |
|            | Other Assets Less Liabilities – 2.8%  |                |     | 2,059,329     |
|            | Net Assets Applicable to Common Shares –<br>100%  |                |     | \$ 74,063,143 |

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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        | \$ —    | \$110,083,814 | \$ —    | \$110,083,814 |

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 February 28, 2013, the cost of investments was \$100,842,747.

Gross unrealized appreciation and gross unrealized depreciation of investments as of February 28, 2013, were as follows:

|                   |             |
|-------------------|-------------|
| Gross unrealized: |             |
| Appreciation      | \$8,180,797 |

|   |             |
|---|-------------|
| Depreciation  | (374,508)   |
| Net unrealized appreciation (depreciation) of investments | \$7,806,289 |

- (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.  
Backed by an escrow or trust containing sufficient U.S. Government or U.S. Government agency securities,
  - (4) 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 33.3%.
- N/R Not rated.
- (ETM) Escrowed to maturity.
- (IF) Inverse floating rate investment.
- (UB) Underlying bond of an inverse floating rate trust reflected as a financing transaction.
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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 Massachusetts Premium Income Municipal Fund

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

Date: April 29, 2013

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: April 29, 2013

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

Date: April 29, 2013