

NUVEEN MASSACHUSETTS PREMIUM INCOME MUNICIPAL FUND

Form N-Q

April 29, 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 811-07484

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: 2/28/15

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 Massachusetts Premium Income
Municipal Fund (NMT)
February 28, 2015 (Unaudited)

Principal Amount (000)	Description (1)	Optional Call Provisions (2)	Ratings (3)	Value
	LONG-TERM INVESTMENTS – 153.3% (100.0% of Total Investments)			
	MUNICIPAL BONDS – 153.3% (100.0% of Total Investments)			
	Consumer Discretionary – 1.0% (0.7% of Total Investments)			
\$ 1,905	Boston Industrial Development Financing Authority, Massachusetts, Senior Revenue Bonds, Crosstown Center Project, Series 2002, 6.500%, 9/01/35 (Alternative Minimum Tax) (4)	5/15 at 100.00	Caa3	\$ 1,378,248
	Education and Civic Organizations – 39.3% (25.6% of Total Investments)			
	Massachusetts Development Finance Agency, Revenue Bonds, Boston University, Tender Option Bond Trust 1163:			
1,880	17.116%, 10/01/48 (IF) (5)	10/23 at 100.00	AAA	2,837,390
575	17.017%, 10/01/48 (IF) (5)	10/23 at 100.00	AAA	867,457
2,150	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	2,448,807
2,200	Massachusetts Development Finance Agency, Revenue Bonds, Boston College Issue, Series 2013S, 5.000%, 7/01/38	7/23 at 100.00	AA–	2,505,184
1,135	Massachusetts Development Finance Agency, Revenue Bonds, Boston University, Series 2005T-1, 5.000%, 10/01/39 – AMBAC Insured	10/15 at 100.00	A1	1,162,524
750	Massachusetts Development Finance Agency, Revenue Bonds, Boston University, Series	10/19 at 100.00	A1	859,823

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1,400	2009V-1, 5.000%, 10/01/29 Massachusetts Development Finance Agency, Revenue Bonds, Emerson College, Series 2010A, 5.000%, 1/01/40 Massachusetts Development Finance Agency, Revenue Bonds, Northeastern University, Series 2012, 5.000%, 10/01/31 Massachusetts Development Finance Agency, Revenue Bonds, Northeastern University, Series 2014A: 5.000%, 3/01/39 5.000%, 3/01/44	1/20 at 100.00 No Opt. Call 3/24 at 100.00 3/24 at 100.00	BBB+ A2 A2	1,489,558 623,794 991,585 1,580,712
500	Massachusetts Development Finance Agency, Revenue Bonds, Simmons College, Series 2013J, 5.250%, 10/01/39 Massachusetts Development Finance Agency, Revenue Bonds, Sterling and Francine Clark Art Institute, Series 2011A, 5.000%, 7/01/41 Massachusetts Development Finance Agency, Revenue Bonds, The Broad Institute, Series 2011A, 5.250%, 4/01/37 Massachusetts Development Finance Agency, Revenue Bonds, Tufts University, Series 2015Q, 5.000%, 8/15/38 Massachusetts Development Finance Agency, Revenue Bonds, Worcester Polytechnic Institute, Series 2007, 5.000%, 9/01/37 – NPFQ Insured Massachusetts Development Finance Agency, Revenue Bonds, Worcester Polytechnic Institute, Series 2012, 5.000%, 9/01/50 Massachusetts Development Finance Authority, Revenue Bonds, WGBH Educational Foundation, Series 2002A, 5.750%, 1/01/42 – AMBAC Insured Massachusetts Development Finance Authority, Revenue Bonds, WGBH Educational Foundation, Series 2008A, 5.000%, 1/01/42 – AGC Insured Massachusetts Development Finance Authority, Revenue Refunding Bonds, Boston University,	No Opt. Call No Opt. Call 7/21 at 100.00 4/21 at 100.00 8/25 at 100.00 9/17 at 100.00 9/22 at 100.00 No Opt. Call 1/18 at 100.00	BBB+ BBB+ AA AA– Aa2 AA– A+ A AA	553,875 553,875 1,108,630 3,454,079 1,021,773 2,276,113 1,519,218 3,886,139 10,454,961

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	Series 1999P:			
1,090	6.000%, 5/15/29	No Opt. Call	A1	1,376,943
1,000	6.000%, 5/15/59	5/29 at 105.00	A1	1,264,550
	Massachusetts Educational Finance Authority, Educational Loan Revenue Bonds, Series			
35	2001E, 5.300%, 1/01/16 – AMBAC Insured (Alternative Minimum Tax)	7/15 at 100.00	AA	35,140
	Massachusetts Educational Financing Authority, Education Loan Revenue Bonds, Series 2008H, 6.350%, 1/01/30 – AGC Insured (Alternative Minimum Tax)	1/18 at 100.00	AA	411,957
390	Massachusetts Educational Financing Authority, Educational Loan Revenue, Series 2011J, 5.625%, 7/01/33 (Alternative Minimum Tax)	7/21 at 100.00	AA	950,142
865	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Northeastern University, Series 2010A, 4.875%, 10/01/35	10/20 at 100.00	A2	276,713
255	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Springfield College, Series 2010, 5.500%, 10/15/31	10/19 at 100.00	Baa1	1,646,730
1,500	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Wheaton College Issues, Series 2010F, 5.000%, 1/01/41	1/20 at 100.00	A2	2,245,485
2,030	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Williams College, Series 2007L, 5.000%, 7/01/31	7/16 at 100.00	AA+	79,245
75	Massachusetts Health and Educational Facilities Authority, Revenue Refunding Bonds, Suffolk University Issue, Series 2009A, 5.750%, 7/01/39	7/19 at 100.00	BBB	568,145
500	Puerto Rico Industrial, Tourist, Educational, Medical and Environmental Control Facilities Fin Authority, Higher Ed Rev and Rev Refunding Bonds, University of the Sacred Heart Project, Series 2012, 5.000%, 10/01/42	No Opt. Call	BBB	157,998
200	University of Massachusetts Building Authority, Project Revenue Bonds, Senior Series 2015-1, 5.000%, 11/01/40 (WI/DD, Settling 3/25/15)	11/25 at 100.00	Aa2	4,678,279
4,000	University of Massachusetts Building Authority, Senior Lien Project Revenue Bonds, Series	No Opt. Call	Aa2	1,704,684
1,510				

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48,150	2009-1, 5.000%, 5/01/39 Total Education and Civic Organizations Health Care – 32.5% (21.2% of Total Investments) Massachusetts Development Finance Agency Revenue Bonds, Baystate Medical Center				55,037,633
1,000	Issue, Series 2014N, 5.000%, 7/01/44 Massachusetts Development Finance Agency Revenue Bonds, Partners HealthCare System	7/24 at 100.00	A+		1,121,600
2,000	Issue, Series 2015-O1, 5.000%, 7/01/45 Massachusetts Development Finance Agency Revenue Bonds, Children’s Hospital Issue,	7/25 at 100.00	AA		2,295,840
1,000	Series 2014P, 5.000%, 10/01/46 Massachusetts Development Finance Agency, Hospital Revenue Bonds, Cape Cod Healthcare	10/24 at 100.00	AA		1,133,360
1,410	Obligated Group, Series 2013, 5.250%, 11/15/41 Massachusetts Development Finance Agency, Revenue Bonds, Berkshire Health Systems, Series 2012G:	11/23 at 100.00	A–		1,586,588
895	5.000%, 10/01/29	10/21 at 100.00	A–		998,802
700	5.000%, 10/01/31 Massachusetts Development Finance Agency, Revenue Bonds, Covenant Health System	10/21 at 100.00	A–		777,651
1,000	Obligated Group, Series 2012, 5.000%, 7/01/31 Massachusetts Development Finance Agency, Revenue Bonds, Milford Regional Medical	7/22 at 100.00	A		1,106,250
1,080	Center Issue, Series 2014F, 5.750%, 7/15/43 Massachusetts Development Finance Agency, Revenue Bonds, Northern Berkshire	7/23 at 100.00	BBB–		1,212,214
155	Community Services Inc., Series 2012B, 0.000%, 2/15/43 (6), (7) Massachusetts Development Finance Agency, Revenue Bonds, Northern Berkshire	5/15 at 100.00	N/R		8,653
124	Community Services Inc., Series 2012B, 0.000%, 2/15/43 (6), (7) Massachusetts Development Finance Agency, Revenue Bonds, Northern Berkshire	5/15 at 100.00	N/R		6,888
176	Community Services Inc., Series 2012C, 0.000%, 2/15/43 (6), (7)	5/15 at 103.00	N/R		9,808
2,200		7/20 at 100.00	AA		2,513,324

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	Massachusetts Development Finance Agency, Revenue Bonds, Partners HealthCare System, Series 2011K-6, 5.375%, 7/01/41			
1,000	Massachusetts Development Finance Agency, Revenue Bonds, Partners HealthCare System, Series 2012L, 5.000%, 7/01/36	7/21 at 100.00	AA	1,133,250
820	Massachusetts Development Finance Agency, Revenue Bonds, Southcoast Health System Obligated Group Issue, Series 2013F, 5.000%, 7/01/37	7/23 at 100.00	A	915,538
1,000	Massachusetts Development Finance Agency, Revenue Bonds, The Lowell General Hospital, Series 2013G: 5.000%, 7/01/37	7/23 at 100.00	BBB+	1,081,730
2,200	5.000%, 7/01/44	7/23 at 100.00	BBB+	2,350,634
500	Massachusetts Development Finance Agency, Revenue Bonds, UMass Memorial Health, Series 2011H, 5.500%, 7/01/31	7/21 at 100.00	BBB+	561,415
500	Massachusetts Health and Educational Facilities Authority Revenue Bonds, Quincy Medical Center Issue, Series 2008A, 6.500%, 1/15/38 (6)	1/18 at 100.00	N/R	1,280
945	Massachusetts Health and Educational Facilities Authority, Partners HealthCare System Inc., Series 2007G, 5.000%, 7/01/32	7/17 at 100.00	AA	1,028,226
160	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Baystate Medical Center, Series 2009I, 5.750%, 7/01/36	7/19 at 100.00	A+	184,051
500	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Cape Cod Healthcare Obligated Group, Series 2004D, 5.125%, 11/15/35 – AGC Insured	11/19 at 100.00	AA	563,730
3,380	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Caregroup Inc., Series B1 Capital Asset Program Converted June 13,2008: 5.375%, 2/01/26 – NPFPG Insured	8/18 at 100.00	AA–	3,800,336
600	5.375%, 2/01/27 – NPFPG Insured	8/18 at 100.00	AA–	674,616
770	5.375%, 2/01/28 – NPFPG Insured	8/18 at 100.00	AA–	861,823
	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Caregroup Inc., Series B2, Capital Asset Program, Converted June 9, 2009:			

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2,000	5.375%, 2/01/27 – NPMG Insured	8/18 at 100.00	AA–	2,248,720
1,500	5.375%, 2/01/28 – NPMG Insured	8/18 at 100.00	AA–	1,678,875
2,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Children’s Hospital, Series 2009M, 5.500%, 12/01/39	12/19 at 100.00	AA	2,314,920
2,500	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Dana-Farber Cancer Institute, Series 2008K, 5.000%, 12/01/37	12/18 at 100.00	A1	2,753,175
550	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Emerson Hospital, Series 2005E, 5.000%, 8/15/25 – RAAI Insured	8/15 at 100.00	N/R	557,387
1,600	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Lahey Clinic Medical Center, Series 2005C, 5.000%, 8/15/21 – FGIC Insured	8/15 at 100.00	AA–	1,634,832
3,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Lahey Medical Center, Series 2007D, 5.250%, 8/15/28	8/17 at 100.00	A+	3,236,520
1,495	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Milford Regional Medical Center, Series 2007E, 5.000%, 7/15/32	7/17 at 100.00	BBB–	1,532,868
1,700	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Milton Hospital Project, Series 2005D, 5.250%, 7/01/30	7/15 at 100.00	BB+	1,706,919
1,980	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, UMass Memorial Health Care, Series 2005D, 5.000%, 7/01/33	7/15 at 100.00	BBB+	1,992,494
42,440	Total Health Care Housing/Multifamily – 3.7% (2.4% of Total Investments)			45,584,317
500	Boston Housing Authority, Massachusetts, Capital Program Revenue Bonds, Series 2008, 5.000%, 4/01/20 – AGM Insured	4/18 at 100.00	AA	558,570
2,525	Massachusetts Development Finance Authority, Multifamily Housing Revenue Bonds, Emerson Manor Project, Series 2007, 4.800%, 7/20/48	7/17 at 100.00	BB	2,585,045
2,000	Massachusetts Housing Finance Agency, Housing Bonds, Series 2003H, 5.125%, 6/01/43	5/15 at 100.00	AA–	2,002,060
5,025	Total Housing/Multifamily			5,145,675

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	Housing/Single Family – 1.5% (1.0% of Total Investments)			
2,150	Massachusetts Housing Finance Agency, Single Family Housing Revenue Bonds, Series 2006-126, 4.625%, 6/01/32 (Alternative Minimum Tax)	6/16 at 100.00	AA	2,169,802
	Industrials – 2.2% (1.4% of Total Investments)			
1,475	Massachusetts Development Finance Authority, Revenue Bonds, 100 Cambridge Street Redevelopment, M/SRBC Project, Series 2002A: 5.125%, 8/01/28 – NPMF Insured	4/15 at 100.00	AA–	1,476,814
1,565	5.125%, 2/01/34 – NPMF Insured	4/15 at 100.00	AA–	1,566,675
3,040	Total Industrials			3,043,489
	Long-Term Care – 3.8% (2.5% of Total Investments)			
285	Massachusetts Development Finance Agency, Revenue Bonds, Carleton-Willard Village, Series 2010, 5.625%, 12/01/30	12/19 at 100.00	A–	325,832
1,000	Massachusetts Development Finance Agency, Revenue Bonds, Loomis Communities, Series 2013A, 5.250%, 1/01/26	1/23 at 100.00	BBB–	1,114,370
500	Massachusetts Development Finance Agency, Revenue Bonds, North Hill Communities Issue, Series 2013A, 6.250%, 11/15/28	11/23 at 100.00	N/R	542,575
2,410	Massachusetts Development Finance Agency, Revenue Bonds, Orchard Cove, Series 2007, 5.250%, 10/01/26	4/15 at 101.00	N/R	2,435,908
500	Massachusetts Development Finance Authority, First Mortgage Revenue Bonds, Berkshire Retirement Community – Edgecombe Project, Series 2001A, 6.750%, 7/01/21	7/15 at 100.00	BBB	502,310
375	Massachusetts Industrial Finance Agency, First Mortgage Revenue Bonds, Berkshire Retirement Community, Series 1994B, 4.750%, 7/01/17	5/15 at 100.00	BBB	375,548
5,070	Total Long-Term Care Tax Obligation/General – 15.7% (10.3% of Total Investments)			5,296,543
300	Boston, Massachusetts, General Obligation Bonds, Series 2005A, 5.000%, 1/01/17	5/15 at 100.00	AAA	301,233
2,000	Hampden-Wilbraham Regional School District, Hampden County, Massachusetts, General Obligation Bonds, Series 2011, 5.000%, 2/15/41	2/21 at 100.00	Aa3	2,232,060
1,250		2/20 at 100.00	AA	1,426,150

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	Hudson, Massachusetts, General Obligation Bonds, Municipal Purpose Loan Series 2011, 5.000%, 2/15/32			
1,010	Massachusetts Bay Transportation Authority, General Obligation Transportation System Bonds, Series 1991A, 7.000%, 3/01/21	No Opt. Call	AA+	1,241,300
2,440	Massachusetts State, General Obligation Bonds, Consolidated Loan, Refunding Series 2014C, 5.000%, 8/01/22	No Opt. Call	AA+	2,986,267
1,500	Massachusetts State, General Obligation Bonds, Consolidated Loan, Series 2004B, 5.250%, 8/01/21 – AGM Insured	No Opt. Call	AA+	1,833,330
1,000	Newburyport, Massachusetts, General Obligation Bonds, Municipal Purpose Loan Series 2013, 4.000%, 1/15/30	1/23 at 100.00	AA+	1,071,170
1,705	North Attleborough, Massachusetts, General Obligation Bonds, Series 2004, 5.000%, 7/15/15 – FGIC Insured	5/15 at 101.00	Aa2	1,729,006
1,775	North Reading, Massachusetts, General Obligation Bonds, Series 2012, 5.000%, 5/15/35 – AMBAC Insured	5/22 at 100.00	Aa2	2,008,661
1,760	Norwell, Massachusetts, General Obligation Bonds, Series 2003, 5.000%, 11/15/20 – FGIC Insured	No Opt. Call	AAA	2,100,630
1,280	Quincy, Massachusetts, General Obligation Bonds, Series 2011: 5.125%, 12/01/33	12/20 at 100.00	Aa2	1,475,507
2,000	5.250%, 12/01/38	12/20 at 100.00	Aa2	2,321,240
1,220	Worcester, Massachusetts, General Obligation Bonds, Series 2005A, 5.000%, 7/01/19 – FGIC Insured	7/15 at 100.00	AA–	1,258,479
19,240	Total Tax Obligation/General Tax Obligation/Limited – 20.8% (13.6% of Total Investments)			21,985,033
2,000	Government of Guam, Business Privilege Tax Bonds, Series 2011A: 5.250%, 1/01/36	1/22 at 100.00	A	2,237,100
1,310	5.125%, 1/01/42	1/22 at 100.00	A	1,447,733
400	Government of Guam, Business Privilege Tax Bonds, Series 2012B-1: 5.000%, 1/01/37	1/22 at 100.00	A	438,772
1,055	5.000%, 1/01/42	1/22 at 100.00	A	1,150,530
855			AA	987,568

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	Martha's Vineyard Land Bank, Massachusetts, Revenue Bonds, Refunding Green Series 2014, 5.000%, 5/01/33 – BAM Insured	11/24 at 100.00		
1,000	Massachusetts Bay Transportation Authority, Assessment Bonds, Series 2012A, 5.000%, 7/01/41	7/22 at 100.00	AAA	1,133,030
770	Massachusetts Bay Transportation Authority, Sales Tax Revenue Bonds, Refunding Senior Lien Series 2004C, 5.250%, 7/01/21	No Opt. Call	AAA	942,311
975	Massachusetts Bay Transportation Authority, Sales Tax Revenue Bonds, Senior Lien Series 2006C, 5.000%, 7/01/26	7/18 at 100.00	AAA	1,098,357
460	Massachusetts College Building Authority, Project Revenue Bonds, Green Series 2014B: 5.000%, 5/01/39	5/24 at 100.00	AA	529,327
1,610	5.000%, 5/01/44	5/24 at 100.00	AA	1,847,105
2,500	Massachusetts College Building Authority, Project Revenue Bonds, Series 2008A, 5.000%, 5/01/33 – AGC Insured	5/18 at 100.00	AA	2,763,675
1,000	Massachusetts College Building Authority, Project Revenue Refunding Bonds, Series 2003B, 5.375%, 5/01/23 – SYNCORA GTY Insured	No Opt. Call	Aa2	1,259,190
855	Massachusetts College Building Authority, Revenue Bonds, Refunding Series 2012B, 5.000%, 5/01/37	5/22 at 100.00	AA	968,783
1,875	Massachusetts School Building Authority, Dedicated Sales Tax Revenue Bonds, Senior Series 2013A, 5.000%, 5/15/38	5/23 at 100.00	AA+	2,149,144
1,875	Massachusetts School Building Authority, Dedicated Sales Tax Revenue Bonds, Series 2007A, 5.000%, 8/15/37 – AMBAC Insured	8/17 at 100.00	AA+	2,044,088
975	Massachusetts School Building Authority, Dedicated Sales Tax Revenue Bonds, Series 2011B: 5.000%, 10/15/35	No Opt. Call 10/21 at 100.00	AA+	1,120,538
1,000	5.000%, 10/15/41		AA+	1,139,250
1,070	Massachusetts State, Special Obligation Dedicated Tax Revenue Bonds, Series 2005, 5.000%, 1/01/20 – FGIC Insured	No Opt. Call	AA–	1,233,517
1,500	Massachusetts, Transportation Fund Revenue Bonds, Accelerated Bridge Program, Series 2013A, 5.000%, 6/01/38	6/21 at 100.00	AAA	1,720,065

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2,700	Virgin Islands Public Finance Authority, Gross Receipts Taxes Loan Note, Refunding Series 2012A, 5.000%, 10/01/32	No Opt. Call	BBB+	2,986,929
25,785	Total Tax Obligation/Limited Transportation – 7.4% (4.8% of Total Investments)			29,197,012
400	Massachusetts Department of Transportation, Metropolitan Highway System Revenue Bonds,	1/20 at 100.00	AA+	456,324
	Commonwealth Contract Assistance Secured, Refunding Series 2010B, 5.000%, 1/01/35			
1,000	Massachusetts Port Authority, Airport System Revenue Bonds, Series 2010A, 5.000%, 7/01/30	7/20 at 100.00	AA	1,158,200
1,000	Massachusetts Port Authority, Revenue Bonds, Series 2012B, 5.000%, 7/01/33	7/22 at 100.00	AA	1,157,310
1,000	Massachusetts Port Authority, Revenue Bonds, Series 2014A: 5.000%, 7/01/39	7/24 at 100.00	AA	1,150,450
2,500	5.000%, 7/01/44	7/24 at 100.00	AA	2,856,525
1,400	Massachusetts Port Authority, Special Facilities Revenue Bonds, BOSFUEL Corporation, Series 2007, 5.000%, 7/01/32 – FGIC Insured (Alternative Minimum Tax)	7/17 at 100.00	AA–	1,494,710
1,225	Massachusetts Port Authority, Special Facilities Revenue Bonds, Delta Air Lines Inc., Series 2001A, 5.000%, 1/01/27 – AMBAC Insured (Alternative Minimum Tax)	7/15 at 100.00	N/R	1,225,245
730	Metropolitan Boston Transit Parking Corporation, Massachusetts, Systemwide Senior Lien Parking Revenue Bonds, Series 2011, 5.000%, 7/01/41	7/21 at 100.00	A+	818,359
9,255	Total Transportation U.S. Guaranteed – 12.3% (8.0% of Total Investments) (8)			10,317,123
1,310	Ashland, Massachusetts, General Obligation Bonds, Series 2004, 5.250%, 5/15/23 (Pre-refunded 5/15/15) – AMBAC Insured	5/15 at 100.00	Aa2 (8)	1,324,620
125	Guam Government Waterworks Authority, Water and Wastewater System Revenue Bonds, Series 2005, 6.000%, 7/01/25 (Pre-refunded 7/01/15)	7/15 at 100.00	A– (8)	127,453
685	Massachusetts Bay Transportation Authority, General Obligation Transportation System Bonds,	3/17 at 100.00	N/R (8)	728,888
25	Series 1991A, 7.000%, 3/01/21 (ETM) Massachusetts Bay Transportation Authority, Sales Tax Revenue Bonds, Senior Lien Series	7/18 at 100.00	AAA	28,427

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	2006C, 5.000%, 7/01/26 (Pre-refunded 7/01/18) Massachusetts College Building Authority, Project Revenue Bonds, Series 2006A,			
575	5.000%, 5/01/31 (Pre-refunded 5/01/16) – AMBAC Insured Massachusetts Development Finance Agency, Revenue Bonds, Draper Laboratory, Series	5/16 at 100.00	Aa2 (8)	607,068
110	2008, 5.875%, 9/01/30 (Pre-refunded 9/01/18) Massachusetts Development Finance Authority, Revenue Bonds, Massachusetts	9/18 at 100.00	Aa3 (8)	128,600
2,240	College of Pharmacy and Allied Health Sciences, Series 2005D, 5.000%, 7/01/27 (Pre-refunded 7/01/15) – AGC Insured Massachusetts Health and Educational Facilities Authority, Partners HealthCare	7/15 at 100.00	AA (8)	2,277,363
1,055	System Inc., Series 2007G, 5.000%, 7/01/32 (Pre-refunded 7/01/17) Massachusetts Health and Educational Facilities Authority, Revenue Bonds,	7/17 at 100.00	N/R (8)	1,163,285
410	CareGroup Inc., Series 1998A, 5.000%, 7/01/25 (Pre-refunded 7/01/21) – NPFG Insured Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Tufts	7/21 at 100.00	AA– (8)	480,680
350	University, Series 2008O, 5.375%, 8/15/38 (Pre-refunded 8/15/18) Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Williams	8/18 at 100.00	Aa2 (8)	403,085
515	College, Series 2007L, 5.000%, 7/01/31 (Pre-refunded 7/01/16) Massachusetts School Building Authority, Dedicated Sales Tax Revenue Bonds, Series	7/16 at 100.00	N/R (8)	547,342
1,700	2005A, 5.000%, 8/15/20 (Pre-refunded 8/15/15) – AGM Insured Massachusetts State, General Obligation Bonds, Consolidated Loan, Series 2005C,	8/15 at 100.00	AA+ (8)	1,738,862
2,500	5.000%, 9/01/22 (Pre-refunded 9/01/15) Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series	9/15 at 100.00	Aaa	2,562,550
1,250	2005-11, 4.500%, 8/01/29 (Pre-refunded 8/01/15) Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series	8/15 at 100.00	AAA	1,273,300
785		8/16 at 100.00	Aaa	830,459

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	2006-12, 4.375%, 8/01/31 (Pre-refunded 8/01/16) Massachusetts Water Resources Authority, General Revenue Bonds, Series 2005A,			
95	5.000%, 8/01/28 (Pre-refunded 8/01/17) Massachusetts Water Resources Authority, General Revenue Bonds, Series 2006A,	8/17 at 100.00	Aa1 (8)	105,059
1,500	5.000%, 8/01/31 (Pre-refunded 8/01/16) – AMBAC Insured Puerto Rico, Highway Revenue Bonds, Highway and Transportation Authority, Series 2003AA,	8/16 at 100.00	AA+ (8)	1,599,990
1,065	5.500%, 7/01/19 – NPFPG Insured (ETM)	No Opt. Call	A3 (8)	1,266,988
16,295	Total U.S. Guaranteed Utilities – 4.2% (2.7% of Total Investments)			17,194,019
2,580	Guam Power Authority, Revenue Bonds, Series 2010A, 5.000%, 10/01/37 – AGM Insured	10/20 at 100.00	AA	2,849,455
1,265	Massachusetts Clean Energy Cooperative Corporation, Revenue Bonds, Massachusetts Municipal Lighting Plant Cooperative, Series 2013, 5.000%, 7/01/32	7/23 at 100.00	A1	1,458,558
1,510	Massachusetts Development Finance Agency, Resource Recovery Revenue Refunding Bonds, Covanta Energy Project, Series 2012B, 4.875%, 11/01/42	11/17 at 100.00	BB+	1,552,038
5,355	Total Utilities Water and Sewer – 8.9% (5.8% of Total Investments)			5,860,051
500	Boston Water and Sewerage Commission, Massachusetts, General Revenue Bonds, Senior Lien Refunding Series 2010A, 5.000%, 11/01/30	11/19 at 100.00	AA+	573,795
565	Guam Waterworks Authority, Water and Wastewater System Revenue Bonds, Refunding Series 2014A, 5.000%, 7/01/29	7/24 at 100.00	A–	628,218
1,900	Lynn Water and Sewer Commission, Massachusetts, General Revenue Bonds, Series 2003A, 5.000%, 12/01/32 – NPFPG Insured	5/15 at 100.00	AA–	1,906,764
2,300	Massachusetts Clean Water Trust, State Revolving Fund Bonds, Green 18 Series 2015, 5.000%, 2/01/45	2/24 at 100.00	AAA	2,663,745
60	Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series 2003-9, 5.000%, 8/01/22	5/15 at 100.00	AAA	60,242

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1,215	Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series 2006-12, 4.375%, 8/01/31	8/16 at 100.00	AAA	1,275,398
400	Massachusetts Water Pollution Abatement Trust, Revenue Bonds, MWRA Loan Program, Series 2002A, 5.250%, 8/01/20	5/15 at 100.00	AAA	401,712
1,000	Massachusetts Water Resources Authority, General Revenue Bonds, Series 2002J, 5.250%, 8/01/19 – AGM Insured	No Opt. Call	AA+	1,180,830
1,405	Massachusetts Water Resources Authority, General Revenue Bonds, Series 2005A, 5.000%, 8/01/28	8/17 at 100.00	AA+	1,533,515
1,000	Massachusetts Water Resources Authority, General Revenue Bonds, Series 2006A, 4.000%, 8/01/46	8/16 at 100.00	AA+	1,005,100
720	Springfield Water and Sewer Commission, Massachusetts, General Revenue Bonds, Refunding Series 2010B, 5.000%, 11/15/30 – AGC Insured	11/20 at 100.00	AA	833,962
185	Springfield Water and Sewer Commission, Massachusetts, General Revenue Bonds, Series 2014A: 5.000%, 7/15/22	No Opt. Call	AA–	224,980
150	5.000%, 7/15/23	No Opt. Call	AA–	184,185
11,400	Total Water and Sewer			12,472,446
\$ 195,110	Total Long-Term Investments (cost \$200,935,315) – 153.3%			214,681,391
	Variable Rate MuniFund Term Preferred Shares, at Liquidation Value – (52.8)% (9)			(74,000,000)
	Other Assets Less Liabilities – (0.5)%			(649,893)
	Net Assets Applicable to Common Shares – 100%			\$ 140,031,498

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	\$ —	\$214,656,042	\$25,349	\$214,681,391

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, 2015, the cost of investments was \$200,810,710.

Gross unrealized appreciation and gross unrealized depreciation of investments as of February 28, 2015, were as follows:

Gross unrealized:	
Appreciation	\$14,651,914
Depreciation	(781,233)
Net unrealized appreciation (depreciation) of investments	\$13,870,681

- (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) On September 1, 2013, the Fund's Adviser determined it was unlikely that this borrower would fulfill its entire obligation on this security, and therefore reduced the security's interest rate of accrual from 6.500% to 5.200%.
 - (5) Investment, or portion of investment, has been pledged to collateralize the net payment obligations for investments in derivatives and/ or inverse floating rate transactions.
 - (6) At or subsequent to the end of the reporting period, this security is non-income producing. Non-income producing, in the case of a fixed-income security, generally denotes that the issuer has (1) defaulted on the payment of principal or interest, (2) is under the protection of the Federal Bankruptcy Court or (3) the Fund's Adviser has concluded that the issue is not likely to meet its future interest payment obligations and has directed the Fund's custodian to cease accruing additional income on the Fund's records.
 - (7) Investment valued at fair value using methods determined in good faith by, or at the discretion of, the Board of Directors/Trustees. For fair value measurement disclosure purposes, investment classified as Level 3.
 - (8) 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. Such investments are normally considered to be equivalent to AAA rated securities.
Variable Rate MuniFund Term Preferred Shares, at Liquidation Value as a percentage of Total
 - (9) Investments
is 34.5%.
 - (ETM) Escrowed to maturity.
 - (IF) Inverse floating rate investment.
 - (WI/DD) Purchased on a when-issued or delayed delivery basis.
-

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 Massachusetts Premium Income Municipal Fund

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

Date: April 29, 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 and Title) /s/ Gifford R. Zimmerman
Gifford R. Zimmerman
Chief Administrative Officer (principal executive officer)

Date: April 29, 2015

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

Date: April 29, 2015