

NUVEEN MASSACHUSETTS PREMIUM INCOME MUNICIPAL FUND
Form N-Q
April 29, 2011

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: 2/28/11

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, 2011

Principal Amount (000)	Description (1)	Optional Call Provisions (2)	Ratings (3)	Value
	Consumer Discretionary – 1.1% (0.7% of Total Investments)			
\$ 1,425	Boston Industrial Development Financing Authority, Massachusetts, Senior Revenue Bonds, Crosstown Center Project, Series 2002, 6.500%, 9/01/35 (Alternative Minimum Tax)	9/12 at 102.00	Caa3	\$ 715,265
	Education and Civic Organizations – 33.5% (21.4% of Total Investments)			
375	Massachusetts Development Finance Agency, Revenue Bonds, Boston University, Series 2009V-1, 5.000%, 10/01/29	10/19 at 100.00	A	375,761
1,000	Massachusetts Development Finance Agency, Revenue Bonds, Emerson College, Series 2010A, 5.000%, 1/01/40	1/20 at 100.00	A–	898,800
1,045	Massachusetts Development Finance Agency, Revenue Bonds, Worcester Polytechnic Institute, Series 2007, 5.000%, 9/01/37 – NPFQ Insured	9/17 at 100.00	A+	972,540
770	Massachusetts Development Finance Authority, Revenue Bonds, Curry College, Series 2000A, 6.000%, 3/01/20 – ACA Insured	3/11 at 100.00	BBB	770,670
1,745	Massachusetts Development Finance Authority, Revenue Bonds, Massachusetts College of Pharmacy and Allied Health Sciences, Series 2005D, 5.000%, 7/01/27 – AGC Insured	7/15 at 100.00	AA+	1,773,793
1,500	Massachusetts Development Finance Authority, Revenue Bonds, WGBH Educational Foundation, Series 2002A, 5.750%, 1/01/42 – AMBAC Insured	No Opt. Call	A	1,444,395
4,900	Massachusetts Development Finance Authority, Revenue Bonds, WGBH Educational Foundation, 5.000%, 1/01/42 – AGC Insured (UB)	1/18 at 100.00	AA+	4,589,438
1,090	Massachusetts Development Finance Authority, Revenue Refunding Bonds, Boston University, Series 1999P, 6.000%, 5/15/29	No Opt. Call	A2	1,216,713
1,550	Massachusetts Educational Finance Authority, Educational Loan Revenue Bonds, Series 2002A, 5.000%, 1/01/13 – AMBAC Insured (Alternative Minimum Tax)	1/12 at 100.00	AA	1,581,434
2,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Boston College, Series 2003N, 5.250%, 6/01/18	6/13 at 100.00	AA–	2,137,500
1,000			Baa1	992,620

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	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Springfield College, Series 2010, 5.500%, 10/15/31	10/19 at 100.00		
250	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Tufts University, Series 2008O, 5.375%, 8/15/38	8/18 at 100.00	Aa2	257,265
500	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Wellesley College, Series 2003H, 5.000%, 7/01/26	7/13 at 100.00	Aaa	510,540
555	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Williams College, Series 2003H, 5.000%, 7/01/21	7/13 at 100.00	AAA	598,001
1,380	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Williams College, Series 2007L, 5.000%, 7/01/31	7/16 at 100.00	AAA	1,409,394
500	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Worcester State College, Series 2002, 5.000%, 11/01/32 – AMBAC Insured	11/12 at 100.00	A2	466,135
1,645	Massachusetts Industrial Finance Agency, Revenue Bonds, Whitehead Institute for Biomedical Research, Series 1993, 5.125%, 7/01/26	7/11 at 100.00	Aa1	1,645,823
340	Puerto Rico Industrial, Tourist, Educational, Medical and Environmental Control Facilities Financing Authority, Higher Education Revenue Bonds, Ana G. Mendez University System, Series 1999, 5.375%, 2/01/19	8/11 at 100.00	BBB-	335,356
22,145	Total Education and Civic Organizations Health Care – 27.4% (17.5% of Total Investments)			21,976,178
1,000	Massachusetts Development Finance Agency, Revenue Bonds, Partners HealthCare System, Series 2011K-6, 5.375%, 7/01/41	7/20 at 100.00	AA	1,001,740
1,250	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Berkshire Health System, Series 2001E, 6.250%, 10/01/31	10/11 at 101.00	BBB+	1,251,975
1,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Cape Cod Health Care Inc., Series 2001C, 5.250%, 11/15/31 – RAAI Insured	11/11 at 101.00	BBB+	895,290
	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Caregroup Inc., Series B1 Capital Asset Program Converted June 13,2008:			
2,300	5.375%, 2/01/26 – NPFG Insured	8/18 at 100.00	A3	2,303,243
770	5.375%, 2/01/28 – NPFG Insured	8/18 at 100.00	A3	761,954
1,500	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Caregroup Inc., Series B2, Capital Asset Program, Converted June 9, 2009, 5.375%, 2/01/27 – NPFG Insured	8/18 at 100.00	A3	1,489,635
1,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Children’s Hospital, Series 2009M, 5.500%, 12/01/39	12/19 at 100.00	AA	1,011,680

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935	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Emerson Hospital, Series 2005E, 5.000%, 8/15/35 – RAAI Insured	8/15 at 100.00	N/R	717,463
1,000	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	A+	1,014,750
2,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Lahey Medical Center, Series 2007D, 5.250%, 8/15/28	8/17 at 100.00	A+	1,968,520
585	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–	477,366
1,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Milton Hospital Project, Series 2005D, 5.250%, 7/01/30	7/15 at 100.00	BB–	716,910
750	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, New England Medical Center Hospitals, Series 1993G-1, 5.375%, 7/01/24 – NPMFG Insured	7/11 at 100.00	Baa1	728,745
75	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Partners HealthCare System Inc., Series 2001C, 5.750%, 7/01/32	7/11 at 101.00	AA	75,416
375	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, UMass Memorial Health Care, Series 2001C, 6.625%, 7/01/32	7/11 at 100.00	BBB+	376,076
1,445	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+	1,301,136
2,000	Massachusetts State, Health and Educational Facilities Authority, Partners HealthCare System Inc., Series 2007G, 5.000%, 7/01/32	7/17 at 100.00	AA	1,889,540
18,985	Total Health Care Housing/Multifamily – 6.8% (4.3% of Total Investments)			17,981,439
1,310	Massachusetts Development Finance Authority, Multifamily Housing Revenue Bonds, Emerson Manor Project, Series 2007, 4.800%, 7/20/48	7/17 at 100.00	BB	1,181,319
1,755	Massachusetts Development Financing Authority, Assisted Living Revenue Bonds, Prospect House Apartments, Series 1999, 7.000%, 12/01/31	6/11 at 101.00	N/R	1,580,009
500	Massachusetts Housing Finance Agency, Housing Revenue Bonds, Series 2003S, 5.050%, 12/01/23 (Alternative Minimum Tax)	6/13 at 100.00	AA–	493,030
175	Massachusetts Housing Finance Agency, Rental Housing Mortgage Revenue Bonds, Series 1999D, 5.500%, 7/01/13 – AMBAC Insured (Alternative Minimum Tax)	7/12 at 100.00	N/R	177,034
1,000	Somerville Housing Authority, Massachusetts, GNMA Collateralized Mortgage Revenue Bonds, Clarendon Hill Towers, Series 2002, 5.200%, 11/20/22	5/12 at 103.00	N/R	1,027,420
4,740	Total Housing/Multifamily Housing/Single Family – 3.5% (2.2% of Total Investments)			4,458,812
1,500	Massachusetts Housing Finance Agency, Single Family Housing Revenue Bonds, Series 2006-126,	6/16 at 100.00	AA	1,321,140

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	4.625%, 6/01/32 (Alternative Minimum Tax)			
985	Massachusetts Housing Finance Agency, Single Family Housing Revenue Bonds, Series 2008, Trust	No Opt. Call	AA	996,485
	3145, 14.230%, 6/01/16 (IF)			
2,485	Total Housing/Single Family			2,317,625
	Industrials – 1.0% (0.7% of Total Investments)			
265	Massachusetts Development Finance Agency, Pioneer Valley Resource Recovery Revenue Bonds,	No Opt. Call	N/R	251,549
	Eco/Springfield LLC, Series 2006, 5.875%, 7/01/14 (Alternative Minimum Tax)			
400	Massachusetts Development Finance Agency, Solid Waste Disposal Revenue Bonds, Waste	No Opt. Call	BBB	422,032
	Management Inc., Series 2003, 5.450%, 6/01/14			
665	Total Industrials			673,581
	Long-Term Care – 7.2% (4.6% of Total Investments)			
1,270	Boston, Massachusetts, FHA-Insured Mortgage Revenue Bonds, Deutsches Altenheim Inc., Series	4/11 at 103.00	AAA	1,291,768
	1998A, 6.125%, 10/01/31			
185	Massachusetts Development Finance Agency, Revenue Bonds, Carleton-Willard Village, Series	12/19 at 100.00	A–	177,221
	2010, 5.625%, 12/01/30			
1,685	Massachusetts Development Finance Agency, Revenue Bonds, Orchard Cove, Series 2007,	10/12 at 102.00	N/R	1,353,662
	5.250%, 10/01/26			
1,500	Massachusetts Development Finance Authority, GNMA Collateralized Assisted Living Facility	3/12 at 105.00	AAA	1,470,570
	Revenue Bonds, Arbors at Chicopee, Series 2001A, 6.250%, 9/20/42 (Alternative Minimum Tax)			
400	Massachusetts Industrial Finance Agency, First Mortgage Revenue Bonds, Berkshire Retirement	1/12 at 100.00	BBB	390,248
	Community, Series 1994B, 4.750%, 7/01/17			
5,040	Total Long-Term Care			4,683,469
	Tax Obligation/General – 22.0% (14.0% of Total Investments)			
500	Ashland, Massachusetts, General Obligation Bonds, Series 2004,	5/15 at 100.00	Aa2	526,125
	5.250%, 5/15/23 – AMBAC Insured			
600	Boston, Massachusetts, General Obligation Bonds, Series 2005A,	1/15 at 100.00	Aaa	663,414
	5.000%, 1/01/17			
1,000	Fall River, Massachusetts, General Obligation Bonds, Series 2003,	2/13 at 101.00	AA+	1,032,460
	5.000%, 2/01/21 – AGM Insured			
1,000	Hampden-Wilbraham Regional School District, Hampden County, Massachusetts, General Obligation	2/21 at 100.00	Aa3	1,001,150
	Bonds, Series 2011, 5.000%, 2/15/41			
2,500	Massachusetts Bay Transportation Authority, General Obligation Transportation System Bonds,	No Opt. Call	Aa1	2,993,600
	Series 1991A, 7.000%, 3/01/21			
1,275	Massachusetts, General Obligation Bonds, Consolidated Loan, Series	No Opt. Call	Aa1	1,436,109
	2001D, 6.000%, 11/01/13 – NPMF Insured			
980	Monson, Massachusetts, General Obligation Bonds, Series 2002,	5/12 at 101.00	A1	1,026,844
	5.250%, 5/15/22 – AMBAC Insured			
1,260			AAA	1,471,390

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	Norwell, Massachusetts, General Obligation Bonds, Series 2003, 5.000%, 11/15/20 – FGIC Insured	No Opt. Call		
1,000	Puerto Rico, General Obligation and Public Improvement Bonds, Series 2002A, 5.500%, 7/01/29 – FGIC Insured	No Opt. Call	A3	970,710
2,000	Quincy, Massachusetts, General Obligation Bonds, Series 2011, 5.250%, 12/01/38	12/20 at 100.00	Aa2	2,031,120
1,220	Worcester, Massachusetts, General Obligation Bonds, Series 2005A, 5.000%, 7/01/19 – FGIC Insured	7/15 at 100.00	A1	1,292,309
13,335	Total Tax Obligation/General Tax Obligation/Limited – 14.4% (9.2% of Total Investments)			14,445,231
210	Martha’s Vineyard Land Bank, Massachusetts, Revenue Bonds, Series 2004, 5.000%, 5/01/26 – AMBAC Insured	5/14 at 100.00	A	210,475
975	Massachusetts Bay Transportation Authority, Sales Tax Revenue Bonds, Senior Lien Series 2006C, 5.000%, 7/01/26	7/18 at 100.00	AAA	1,032,944
385	Massachusetts Bay Transportation Authority, Senior Lien Sales Tax Revenue Refunding Bonds, Series 2004C, 5.250%, 7/01/21	No Opt. Call	AAA	454,007
550	Massachusetts College Building Authority, Project Revenue Bonds, Series 2004A, 5.000%, 5/01/19 – NPMFG Insured	5/14 at 100.00	Aa2	593,621
325	Massachusetts College Building Authority, Project Revenue Bonds, Series 2006A, 5.000%, 5/01/31 – AMBAC Insured	5/16 at 100.00	Aa2	327,850
1,200	Massachusetts College Building Authority, Project Revenue Bonds, Series 2008A, 5.000%, 5/01/33 – AGC Insured	5/18 at 100.00	AA+	1,205,304
1,000	Massachusetts College Building Authority, Project Revenue Refunding Bonds, Series 2003B, 5.375%, 5/01/23 – SYNCORA GTY Insured	No Opt. Call	Aa2	1,143,080
1,300	Massachusetts School Building Authority, Dedicated Sales Tax Revenue Bonds, Series 2005A, 5.000%, 8/15/20 – AGM Insured	8/15 at 100.00	AA+	1,420,874
540	Massachusetts State, Special Obligation Dedicated Tax Revenue Bonds, Series 2005, 5.000%, 1/01/20 – FGIC Insured	No Opt. Call	A1	591,224
1,000	Massachusetts, Special Obligation Refunding Notes, Federal Highway Grant Anticipation Note Program, Series 2003A, 5.000%, 12/15/13 – AGM Insured	No Opt. Call	AAA	1,103,480
240	Puerto Rico Infrastructure Financing Authority, Special Tax Revenue Bonds, Series 2005A, 0.000%, 7/01/43 – AMBAC Insured	No Opt. Call	A3	21,204
1,300	Puerto Rico, Highway Revenue Bonds, Highway and Transportation Authority, Series 2003AA, 5.500%, 7/01/19 – NPMFG Insured	No Opt. Call	A2	1,350,531
9,025	Total Tax Obligation/Limited Transportation – 11.2% (7.1% of Total Investments)			9,454,594
500			AA–	507,235

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	Massachusetts Port Authority, Airport System Revenue Bonds, Series 2010A, 5.000%, 7/01/30	7/20 at 100.00		
2,000	Massachusetts Port Authority, Revenue Bonds, Series 2003A, 5.000%, 7/01/33 – NPFQ Insured	7/13 at 100.00	AA-	2,000,740
1,000	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	A3	889,810
225	Massachusetts Port Authority, Special Facilities Revenue Bonds, Delta Air Lines Inc., Series 2001A, 5.000%, 1/01/27 – AMBAC Insured (Alternative Minimum Tax)	7/11 at 101.00	N/R	171,720
4,000	Massachusetts Port Authority, Special Facilities Revenue Bonds, US Airways Group Inc., Series 1996A, 5.750%, 9/01/16 – NPFQ Insured (Alternative Minimum Tax)	3/11 at 100.00	Baa1	3,742,600
7,725	Total Transportation			7,312,105
	U.S. Guaranteed – 13.3% (8.4% of Total Investments) (4)			
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)	739,434
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	29,397
1,500	Massachusetts Development Finance Authority, GNMA Collateralized Revenue Bonds, VOA Concord Assisted Living Inc., Series 2000A, 6.900%, 10/20/41 (Pre-refunded 10/20/11)	10/11 at 105.00	N/R (4)	1,636,545
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)	1,127,790
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)	827,835
410	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, CareGroup Inc., Series 1998A, 5.000%, 7/01/25 (Pre-refunded 7/01/21) – NPFQ Insured	7/21 at 100.00	BBB (4)	449,889
1,000	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, Caritas Christi Obligated Group, Series 2002B, 6.250%, 7/01/22 (Pre-refunded 7/01/12)	7/12 at 101.00	N/R (4)	1,083,810
600	Massachusetts Health and Educational Facilities Authority, Revenue Bonds, New England Medical Center Hospitals, Series 2002H, 5.375%, 5/15/19 (Pre-refunded 5/15/12) – FGIC Insured	5/12 at 100.00	N/R (4)	633,252
420	Massachusetts Port Authority, Revenue Bonds, Series 1982, 13.000%, 7/01/13 (ETM)	7/11 at 100.00	AAA	486,889
1,500	Massachusetts State, Special Obligation Dedicated Tax Revenue Bonds, Series 2004, 5.250%, 1/01/25 (Pre-refunded 1/01/14) – FGIC Insured	1/14 at 100.00	A1 (4)	1,677,480
7,855	Total U.S. Guaranteed			8,692,321

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	Utilities – 3.1% (2.0% of Total Investments)			
1,000	Massachusetts Development Finance Agency, Resource Recovery Revenue Bonds, SEMass System, Series 2001A, 5.625%, 1/01/16 – NPFG Insured	1/12 at 101.00	Baa1	1,022,550
1,000	Massachusetts Industrial Finance Agency, Resource Recovery Revenue Refunding Bonds, Ogden Haverhill Project, Series 1998A, 5.600%, 12/01/19 (Alternative Minimum Tax)	6/11 at 100.00	A–	1,002,110
2,000	Total Utilities			2,024,660
	Water and Sewer – 12.4% (7.9% of Total Investments)			
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+	527,500
2,000	Boston Water and Sewerage Commission, Massachusetts, General Revenue Bonds, Senior Series 2004A, 5.000%, 11/01/25	11/14 at 100.00	AA+	2,083,380
60	Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series 2003-9, 5.000%, 8/01/22	8/13 at 100.00	AAA	62,428
285	Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series 2004-10, 5.000%, 8/01/26	8/14 at 100.00	AAA	295,092
750	Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series 2005-11, 4.500%, 8/01/29	8/15 at 100.00	AAA	757,919
1,000	Massachusetts Water Pollution Abatement Trust, Pooled Loan Program Bonds, Series 2006-12, 4.375%, 8/01/31	8/16 at 100.00	AAA	998,629
1,250	Massachusetts Water Pollution Abatement Trust, Revenue Bonds, MWRA Loan Program, Series 2002A, 5.250%, 8/01/20	8/12 at 100.00	AAA	1,319,599
1,500	Massachusetts Water Resources Authority, General Revenue Bonds, Series 2005A, 5.000%, 8/01/28 – NPFG Insured	8/17 at 100.00	AA+	1,561,334
625	Massachusetts Water Resources Authority, General Revenue Bonds, Series 2006A, 4.000%, 8/01/46	8/16 at 100.00	AA+	506,380
7,970	Total Water and Sewer			8,112,261
\$ 103,395	Total Investments (cost \$104,514,820) – 156.9%			102,847,541
	Floating Rate Obligations – (3.7)%			(2,450,000)
	MuniFund Term Preferred Shares, at Liquidation Value – (55.9)% (5)			(36,645,000)
	Other Assets Less Liabilities – 2.7%			1,806,106
				\$
	Net Assets Applicable to Common Shares – 100%			65,558,647

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 of 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 three-tier hierarchy of inputs is summarized in the three broad levels listed below:

Level 1 – Quoted prices in active markets for identical securities.

Level 2 – Other significant observable inputs (including quoted prices for similar securities, interest rates, prepayment speeds, credit risk, etc.).

Level 3 – 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 risk associated with investing in those securities. The following is a summary of the Fund's fair value measurements as of February 28, 2011:

	Level 1	Level 2	Level 3	Total
Investments:				
Municipal Bonds	\$ —	\$102,847,541	\$ —	\$102,847,541

The following is a reconciliation of the Fund's Level 3 investments held at the beginning and end of the measurement period:

	Level 3
	Municipal Bonds
Balance at the beginning of period	\$ 344,410
Gains (losses):	
Net realized gains (losses)	(74,766)
Net change in unrealized appreciation (depreciation)	155,590
Purchases at cost	—
Sales at proceeds	(425,234)
Net discounts (premiums)	—

Transfers into	—
Transfers out of	—
Balance at the end of period	\$ —

During the period ended February 28, 2011, the Fund recognized no significant transfers to/from Level 1, Level 2 or Level 3.

Income Tax Information

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

At February 28, 2011, the cost of investments was \$101,960,627.

Gross unrealized appreciation and gross unrealized depreciation of investments at February 28, 2011, were as follows:

Gross unrealized:	
Appreciation	\$ 2,654,965
Depreciation	(4,218,051)
Net unrealized appreciation (depreciation) of investments	\$(1,563,086)

- (1) All percentages shown in the Portfolio of Investments are based on net assets applicable to Common shares unless otherwise noted.
 - (2) Optional Call Provisions: Dates (month and year) and prices of the earliest optional call or redemption. There may be other call provisions at varying prices at later dates. Certain mortgage-backed securities may be subject to periodic principal paydowns.
 - (3) Ratings: Using the highest of Standard & Poor's Group ("Standard & Poor's"), Moody's Investor Service, Inc. ("Moody's") or Fitch, Inc. ("Fitch") rating. Ratings below BBB by Standard & Poor's, Baa by Moody's or BBB by Fitch are considered to be below investment grade. Holdings designated N/R are not rated by any of these national rating agencies.
 - (4) Backed by an escrow or trust containing sufficient U.S. Government or U.S. Government agency securities, which ensure the timely payment of principal and interest. Such investments are normally considered to be equivalent to AAA rated securities.
 - (5) MuniFund Term Preferred Shares, at Liquidation Value as a percentage of Total Investments is 35.6%.
- 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.

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, 2011

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, 2011

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

Date April 29, 2011