



# Massachusetts Tax Revenue Forecasts for FY2006 and FY2007

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The Beacon Hill Institute at Suffolk University has prepared forecasts of tax revenues for the Commonwealth of Massachusetts for fiscal years 2006-2007. The following report presents and details those forecasts.<sup>1</sup>

## Prior Year Estimates

For the past two years, The Beacon Hill Institute (BHI) has provided estimates of tax revenues for fiscal years (FY) 2005 and 2006 to the Joint House Ways and Means Committee. Although, on both occasions, ours was the most optimistic of the forecasts provided to the Committee, our estimates proved too conservative, as tax revenues surged ahead of all expectations for the two fiscal years. Table 1 shows the details.

<b>Table 1: Projected v Actual Tax Revenues</b>		
	<b>Projected FY 2005 Tax Revenues, December 2003</b>	<b>Projected FY 2006 Tax Revenues, December 2004</b>
The Beacon Hill Institute	\$16,149,126	\$17,555,000
The Massachusetts Taxpayers Foundation	\$16,091,000	\$17,370,000
Department of Revenue (average)	\$15,895,000	\$17,386,000
<b>Actual</b>	<b>\$17,087,379</b>	<b>\$18,028,333*</b>

\*FY 2006 revenues, based on the latest BHI forecast.

<sup>1</sup> This report was prepared by the staff of the Beacon Hill Institute at Suffolk University, including Paul Bachman, Sarah Glassman, Jonathan Haughton and David Tuerck.

This year BHI continues to be optimistic about the prospects for the Massachusetts economy and tax revenue collections. Assuming no change in the income tax, we forecast that total tax collections will be

- \$18.028 billion in FY2006, representing a 5.5% increase over FY2005;
- \$18.951 billion in FY2007, an increase of 5.1% over FY2006, given no tax-law changes; and
- \$18.699 billion in FY2007, an increase of 3.7% over FY2006, given that the personal income tax rate is reduced to 5% on January 1, 2007.

Table 2 shows the forecasts by year and by major tax. A complete breakdown of revenue forecasts by month and by the 11 tax headings is available on request.

<b>Table 2</b>		
<b>Revenue Forecasts for Massachusetts, FY2005 and FY2006</b>		
	<b>FY 2006</b>	<b>FY 2007</b>
<b>No Tax-Cut Scenario</b>		
<b>Total Taxes</b>	<b>18,028</b>	<b>18,951</b>
<b>% change p.a.</b>	<b>5.5</b>	<b>5.1</b>
<b>Tax-Cut Scenario (Income Tax Rate cut to 5% as of 1/1/2007)</b>		
<b>Total Taxes</b>	<b>18,028</b>	<b>18,699</b>
<b>% change p.a.</b>	<b>5.5</b>	<b>3.7</b>

In what follows we summarize the economic prospects of the Commonwealth over the next two years, and explain the procedures followed in arriving at our tax forecasts.

## **Background**

Hurricane Katrina and other storms caused extensive damage to the southeastern United States and significant harm to the energy infrastructure located off the Gulf of Mexico. This resulted in higher energy prices, including home heating oil, retail gasoline and natural gas prices. Consumers witnessed gasoline prices temporarily climb to over \$3 a gallon. Oil prices continue to hover around \$60 a barrel and natural gas prices have nearly doubled since last year.

Despite the spike in energy prices associated with Katrina, Gross Domestic Product (GDP) continues to expand at a robust rate, rising by an annual rate of 4.3 percent in the third quarter of 2005, besting the second quarter increase of 3.3 percent, according to estimates released by the U.S. Bureau of Economic Analysis. The increase in GDP results from continued strength in personal consumption expenditures, and increases in federal government spending to clean up the damage left by the active hurricane season.

Employment has also continued to grow at a healthy rate, despite a Katrina-related dip in the early fall months. September and October non-farm payrolls grew by only a combined 105,000 jobs over the two months, but rebounded in November with a preliminary payroll increase of 215,000 reported by the Bureau of Labor Statistics. Barring any large economic shocks, employment can be expected to increase in 2006 and 2007. This will be enough to reduce the unemployment rate, which stood at 5.0% in November and has dropped over the past year.

American Consumers continue to spend freely, evidenced by retail sales that surged at an annual rate of 7.6% in the year to September, according to the United States Census Bureau.<sup>2</sup> With improving levels of employment and personal income, retail sales are expected to grow, although at a slower pace, over the coming two years.

Massachusetts continues to fare less well than the rest of the nation in terms of job creation and growth in real gross state product. Massachusetts saw a net increase of only 15,000 payroll jobs for the first ten months of 2005, and the unemployment rate has remained flat at 4.8% since January 2005.<sup>3</sup> Meanwhile, in 2005, the national economy created 1.7 million jobs through November.<sup>4</sup>

Massachusetts' economy is anticipated to grow more slowly than the national economy through the remainder of this year. However, nominal personal income, one of the main drivers of tax revenue collections, was 5.3% higher in the second quarter of 2005 than the prior year. This continued divergence between the growth of personal income and payrolls may reflect an increase in contract workers, which would not be captured in the payroll numbers, but would be included in personal income figures.

American corporations continued to increase their cash flow. Corporate cash flow rose by \$34.3 billion in the third quarter.<sup>5</sup> Corporations continue to invest this cash, as nonresidential gross private domestic investment recorded a double digit percentage increase for the year through the third quarter.<sup>6</sup> This increased investment will continue to benefit the high-technology sectors of the Massachusetts economy, as corporations have regained their thirst for information processing equipment.

We are in agreement with the most recent forecast from the New England Economic Project (NEEP), which predicts nominal personal income to rise by just over 5% this year and next, and increase by a slower 3.8% in 2007.<sup>7</sup> Employment has continued to grow but at a slow rate of 0.8% compared to a national growth rate of 1.7%. Although employment growth is not strong, the unemployment rate should remain at steady around 4.4% for the next few years. This is partially due to a fall in the labor force, as discouraged workers have ceased to look for work, as well as to increased migration out of the state. As workers from this pool of labor reenter the labor force, the unemployment rate should remain stable.<sup>8</sup> See Table 3.

Increased energy prices, attributable to Hurricane Katrina and other storms, should affect Massachusetts more than the rest of the country. Inflated home heating prices will hit Massachusetts residents harder than the average household due to our harsh winters. Increased energy expenditures will cause consumers to cut back on their spending on other items. As a result Massachusetts' GSP is expected to grow at 2.9% in 2006 compared to a predicted 3.8% growth rate for the country as a whole. The continued improvement in the Bay State economy will translate into higher tax revenues for the state.

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<sup>2</sup> <http://www.census.gov/mrts/www/data/html/nsa105.html> [Accessed December 1, 2004.]

<sup>3</sup> Bureau of Labor Statistics, Regional and State Employment and Unemployment, November 2005  
<http://www.bls.gov/sae/home.htm> [Accessed December 1, 2004.]

<sup>4</sup> [http://data.bls.gov/PDQ/servlet/SurveyOutputServlet;jsessionid=f030feaa6a4c\\$3F\\$3F\\$3](http://data.bls.gov/PDQ/servlet/SurveyOutputServlet;jsessionid=f030feaa6a4c$3F$3F$3)

<sup>5</sup> Bureau of Economic Analysis, Gross Domestic Product and Corporate Profits, November 30, 2004.  
<http://bea.gov/bea/newsrel/gdpnewsrelease.htm>. [Accessed December 7, 2005]

<sup>6</sup> Ibid

<sup>7</sup> *Economic Outlook*, p. 146.

<sup>8</sup> NEEP

<b>Table 3</b>					
<b>Derivation of Revenue Forecasts for Massachusetts, FY2006 and FY2007 (no tax cut)</b>					
<b>Economy.com/NEEP, CY October 2005</b>	<b>Actual 2003</b>	<b>Actual 2004</b>	<b>Forecast 2005</b>	<b>Forecast 2006</b>	<b>Forecast 2007</b>
<b>US economy<sup>1</sup></b>					
Personal income (\$ billion)	9,156.1	9,702.5	10,300	10,920	11,400
% change p.a.	3.2	5.9	6.2	6.0	4.4
CPI inflation, % p.a.					
Employment (millions)	130.0	131.5	133.7	136.4	137.7
% change p.a.	-3	1.2	1.7	2.0	1.0
Unemployment rate, %	6.0	5.5	5.2	5.0	5.1
<b>Massachusetts<sup>1</sup></b>					
Personal income <sup>2</sup> (\$ billion)	255.4	270.1	284.2	298.7	310.0
% change p.a.	2.2	5.8	5.2	5.1	3.8
Real Personal income (\$ billion)	240.4	247.7	254.0	259.3	262.4
% change p.a.	-0.4	3.0	2.5	2.1	1.2
Employment ('000)	3,185.1	3,180.1	3,206.9	3,252.0	3,273.8
% change p.a.	-1.9	-0.2	0.8	1.4	0.7
Unemployment rate, %	5.8	5.1	4.6	4.4	4.5
Population ('000)	6,420.4	6,416.5	6,421.5	6,434.9	6,457.6
% change p.a.	0.1	-0.1	0.1	0.2	0.4
	<b>Actual FY 2003</b>	<b>Actual FY 2004</b>	<b>Actual FY 2005</b>	<b>Forecast FY 2006</b>	<b>Forecast FY 2007</b>
<b>BHI forecast, MA taxes, FY</b>					
Personal income tax (\$ million)	8,026	8,830	9,690	10,241	10,845
% change p.a.	1.4	10.0	9.7	5.7	5.9
Sales Tax	3,708	3,749	3,886	4,101	4,303
% change p.a.	0.3	1.1	3.7	5.5	4.9
Corporation Excise	799	998	1,063	1,190	1,298
% change p.a.	36.3	24.8	6.5	11.9	9.1
Business Excises	730	677	643	645	622
% change p.a.	27.3	-7.3	-5.0	0.3	-3.6
Motor Fuels	676	684	686	687	715
% change p.a.	1.5	1.2	0.3	0.1	4.1
<b>Total Taxes (No tax cut)</b>	<b>14,964</b>	<b>15,954</b>	<b>17,087</b>	<b>18,028</b>	<b>18,951</b>
<b>% change p.a.</b>	<b>4.7</b>	<b>6.6</b>	<b>7.1</b>	<b>5.5</b>	<b>5.1</b>
<i>Notes: <sup>1</sup> From New England Economic Partnership, Fall Economic Outlook, October 2005. <sup>2</sup> BHI Forecast. FY2006 revenue reduced by \$ 188 million and FY2007 revenue increased by \$49 million due to changes in the tax laws.</i>					

## Revenue Forecasts

BHI prepared revenue forecasts for two scenarios: (1) no significant change in tax policy and (2) a reduction of the personal income tax to 5.0% on January 1, 2007. Revenue for eleven categories of tax was forecast for every month through June 2007. See Table 4. Three steps were needed to develop these forecasts.

1. Information on personal income in Massachusetts is available on a quarterly basis. Monthly estimates were obtained by interpolation. We then used our own projections of personal income to derive month-by-month growth rates of personal income, allowing us to project personal income on a monthly basis out through June 2007.

2. For each tax series, we estimated a regression equation that relied mainly on the past movement of the series to permit us to extrapolate into the future. For the major taxes (sales, income) we included personal income as an independent variable. In some cases (noted in Table 4) we included dummy variables in the regression equations in order to pick up the effect of major changes in the tax code.
  
3. In estimating the regressions, we paid particular attention to the structure of the errors, in order to pick up the effects of seasonal, quarterly, and monthly variations in tax collections. This was done by estimating the equations with autoregressive (AR) and moving average (MA) components. The number and nature of AR and MA lags was determined initially by examining the autocorrelation and partial correlation coefficients in the correlogram, and fine-tuned after examining the structure of the equation residuals.

## Uncertainties

Revenue for the first five months of FY2006 grew by 7%. We see a slight slowing of economic activity in the months ahead, which is why we estimate that total revenue will rise by 5.5% for the full fiscal year.

<b>Table 4</b>									
<b>Revenue forecasts, disaggregated, for FY06 and FY07, including technical estimation details</b>									
	FY05	FY06	FY07	% change		AR	MA	Vars/Dummies	Dates
				FY06	FY07				
<b>Income tax</b>									
Estimated payments	1,972,423	2,194,160	2,213,249	11.2	0.9	12	1,3,4,11	01:1, 02:1	79:6-05:10
Tax Withheld	7,674,061	7,911,483	8,454,884	3.1	6.9	1,12	1,12	01:1, 02:1, PI	79:6-05:10
Returns & Bills	1,440,717	1,456,341	1,519,990	1.1	4.4	12	1,12	PIT(-12)	79:6-05:10
Refunds	1,396,931	1,320,131	1,343,674	-5.5	1.8	1,2,11,12	1		79:6-05:10
<b>Income Net</b>	<b>9,690,270</b>	<b>10,241,853</b>	<b>10,844,449</b>	<b>5.7</b>	<b>5.9</b>				
<b>Sales &amp; Use taxes</b>									
Sales & Use taxes	3,886,416	4,100,958	4,302,499	5.5	4.9%	12	1,3,6,9	PI	79:6-05:10
Corporation Excise	1,062,722	1,189,209	1,298,008	11.9	9.1	1,12	1,3,12	-	79:6-05:08
Business Excises	642,897	645,216	622,404	0.4	-3.5	3,12	1,12	-	79:6-05:08
<b>Alcohol Beverages</b>									
Alcohol Beverages	68,630	71,122	71,904	3.6	1.1	1,12	1,12	-	93:6-05:08
Cigarettes	423,637	428,125	424,136	1.1	-0.9	12,23		83:7, 93:1, 96:10, 02:8	79:6-05:08
Motor Fuels	685,537	686,824	715,092	0.2	4.1	1,12	1	90:9, PI, C	79:6-05:08
Other taxes	627,270	665,026	671,995	6.0	1.0	1,12	1,12	-	79:6-05:08
<b>Total Taxes</b>	<b>17,087,379</b>	<b>18,028,333</b>	<b>18,950,488</b>	<b>5.5</b>	<b>5.1</b>				
MBTA/SMART	1,100,509	1,150,032	1,206,384	4.5	4.9				
<b>Total Taxes for Budget</b>	<b>15,986,871</b>	<b>16,878,301</b>	<b>17,744,104</b>	<b>5.6</b>	<b>5.1</b>				
<i>Notes:</i>									
AR refers to autoregressive lags used in the regression. MA refers to moving average lags used in the regression. "Dummies" gives starting dates of each dummy variable used (e.g. 01:1 is a dummy that is set equal to 1 from January 2001 onwards, and to 0 otherwise). "Dates" refers to period of data used in regression estimates." PI refers to personal income, and C a constant variable. Motor fuel revenue adjusted to reflect 20% price increase (and assumed own-price elasticity of demand of -0.15).									

For FY2007 we forecast a 5.1% increase in tax revenue. The major taxes will continue to be buoyant – corporate income tax revenue will surge by 9.1%, personal income tax receipts will rise by 5.9% and sales tax revenue by 4.9%. However, the statewide average will be restrained by very slow growth in revenue from the major excise taxes (cigarettes, alcohol, and motor fuel, business), and modest growth in other taxes (which are rebounding this year but will not continue to grow as rapidly in FY2007). This is further in the future, and inherently subject to greater uncertainty, and our forecasts for FY2007 may be somewhat on the conservative side.

**The Tax Cut**

BHI utilized its Massachusetts State Tax Analysis Modeling Program (STAMP®) to simulate the effects of reducing the Massachusetts income tax to 5%, effective January 1, 2007. Table 5 details how the tax cut would affect employment, capital investment (factories, computers and other means of production), disposable income and state and local tax revenues over FY 2007-08. By FY 2008 there would be 7,827 new jobs in place as a result of the tax cut, \$15.7 million annually in new investment and \$456 million more in real (inflation-adjusted) disposable income.

As indicated in Table 5, we find that the tax cut would cause the state to lose \$251.6 million in revenue in FY2007. This figure includes the positive effects on tax revenues of the expansive effect of cutting the income tax. Thus, for example, in our analysis, increased sales tax revenue will partly offset the loss of income tax revenue, which will be further modified by the expansion in payrolls brought about by the tax cut.

The cut would boost taxpayer’s incomes and thus provide an additional stimulus to Massachusetts economy.

<b>Table 5: The Economic Effects of Personal Income Tax Cut to 5%, (January 1, 2007)</b>					
Fiscal Year	Employment	Investment (\$ million)	Real Disposable Income (\$ million)	Change in State Tax Revenue (\$ million)	
				Static	Dynamic
2007	3,794	7.5	230.0	-262.6	-251.6
2008	7,827	15.7	456.0	-542.9	-520.9