



Massachusetts Tax Revenue Forecasts for FY 2009 and FY 2010

Beacon Hill Institute at Suffolk University

8 Ashburton Place, Boston, MA 02108

www.beaconhill.org

617-573-8750

bhi@beaconhill.org

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The Beacon Hill Institute at Suffolk University is pleased to offer its revised revenue forecast for FY 2009 and FY 2010 to the Senate Committee on Ways and Means.¹ We divide our report into five sections, in which we provide (1) our latest forecast, (2) a review of state government spending for the past five fiscal years, (3) comments on a proposal to increase the state sales tax, (4) background information on the state and national economies and (5) a summary of the methodology used to provide our forecast.

(1) Current Forecast

BHI predicts that tax revenues will be:

- \$18.844 billion in FY 2009, a decrease of 9.3% from FY 2008, and
- \$18.987 billion in FY 2010, an increase of 0.8% from FY 2009.

Both forecasts are updates of forecasts we provided in December 2008. The FY 2009 forecast offered here represents a decrease from the forecast provided in December (\$19.564 billion). The FY 2010 forecast is unchanged.

¹ The staff of the Beacon Hill Institute at Suffolk University, including Paul Bachman, Frank Conte and David G. Tuerck assisted in the preparation of this report.

(2) Recent Trends in State Spending

In FY 2005 tax revenues grew by 7.1%, while state spending grew by a prudent 3.1%. However, in the ensuing three years the state increased spending at a rate faster than the growth of tax revenues. Specifically from FY 2006 to FY 2008, tax revenues grew by 20.7%, while spending grew by 24.6%. Had spending grown at the same rate as revenues, FY 2008 spending would have been \$27.74 billion, or \$300 million less than actual spending. This disconnect between the growth of tax revenues and spending is one source of our current problems.

One possible solution would be to take a cue from the private sector. Firms across the country are cutting wages. In calendar year 2008, state and local governments paid \$18.687 billion in wage and salary disbursements.² If state and local governments were to institute a 5% cut in wages, they could save almost a billion dollars. This seems a small price to pay compared to the harm inflicted by layoffs and tax increases.

Other possible reforms are well known but still largely ignored by the state legislature. We have argued in the past that the state should modify its prevailing wage law to save on construction costs (to the tune of about \$200 million a year) and that it should unshackle the governor in his attempts to eliminate the ridiculously overpriced police details.

(3) The Effects of a Proposed Sales Tax Increase

To estimate the economic effects of the proposed 25% sales tax increase, the Beacon Hill Institute (BHI) utilized its trademarked STAMP (State Tax Analysis Modeling Program).³ Using STAMP, we find that the sales tax increase would cause the private sector to shed 12,728 private sector jobs. The decrease in labor demand, as seen in the private sector job losses, also means that the annual gross wage rate would fall by \$461.83 per capita. Furthermore, investment in the state would fall by \$51.64 million.

Finally, the proposed increase would yield far less than the promised \$900 million in new revenue. The actual total increase (in all taxes collected by the Commonwealth) would be only about \$674 million in calendar year 2010. Moreover, local governments would lose almost \$25 million. The reason would be a loss of income and property tax revenues as state consumers moved more of their purchases out of the state and to the Internet.

See Table 1.

² U.S. Department of Commerce; Bureau of Economic Analysis; News Release: Gross Domestic Product (GDP) and Corporate Profits; available at <http://www.bea.gov/regional/spi/action.cfm> (accessed May 4, 2009).

³ For a description about the model see www.beaconhill.org.

Table 1: Effects of Sales Tax Increase, CY 2010

Economic Variable	
Total Employment (Jobs)	-6,629
Private (Jobs)	-12,728
Government (Jobs)	6,099
Gross Wage Rate (\$/person/year)	-461.83
Investment (\$ millions)	-51.64
State Funds (\$ millions)	674.418
State sales tax	1,042.820
State tax on motor fuel	-2.961
State tax on motor vehicle	-1.726
State corporation excise tax	-9.669
State personal income tax	-130.731
State cigarette tax	-9.605
State other taxes, fees and other revenue	-201.091
State unemployment insurance	-12.619
Local Funds (\$ millions)	-24.839
Local residential property tax	-6.714
Local business property tax	-18.125
Total Funds (\$ millions)	649.580

(4) Background on the National and State Economies

The U.S. Economy. The recession that began in the final quarter of 2007 has deepened over the last two quarters, with real GDP dropping by a stunning 6.3% in the final quarter of 2008 and 6.1% in the first quarter of 2009.⁴ However, there were several glimmers of hope in the most recent data. Real private inventories decreased by \$103.7 billion and contributed 2.8 percentage points to the drop in real GDP. Real personal consumption grew by 2.2%. In addition, output increased by 9.4% for durable goods, by 1.3% for nondurable goods and by 1.5% for services. The combination of growing personal consumption expenditures and lean inventories bodes well for the expansion of production in the near future.

There are also signs that the housing and financial markets are stabilizing. While the Case/Shiller 20 City Home Price Index fell by 18.6% in the year to February, 16 of 20 metro areas recorded a slowing of the rate of decline since January.⁵ Furthermore, February was the first month since October 2007 in which the index did not log a record annual decline. The first-time home buyers tax credit will also help boost demand in the housing market.⁶ The Dow Jones

⁴ U.S. Department of Commerce; Bureau of Economic Analysis; News Release: Gross Domestic Product (GDP) and Corporate Profits; available at <http://www.bea.gov/newsreleases/national/gdp/gdpnewsrelease.htm> (accessed March 3, 2009).

⁵ The McGraw-Hill Companies; Standard and Poor; S&P/Case-Shiller Home Price Indices; available at http://www2.standardandpoors.com/spf/pdf/index/CSHomePrice_Release_042841.pdf (accessed March 3, 2009).

⁶ David Streiteld, "Where Home Prices Crashed Early, Signs of a Rebound," New York Times, 5 May 2009; available at http://www.nytimes.com/2009/05/05/business/economy/05turnaround.html?_r=1&th&emc=th (accessed May 5, 2009).

Industrial average closed at 6,547 on March 9th but has risen 25% to close at 8,212 on May 1st. Other market indexes have recorded similar gains. Meanwhile, several banks have reported earnings that in general have beaten expectations, with numerous banks signaling their willingness and ability to pay back federal loans made at the height of the crisis.

The labor market has continued to shed jobs at a staggering pace. In just the first quarter of 2009, the U.S. labor market lost over 2 million jobs. This is on top of the 3 million jobs lost in 2008. Consequently, the unemployment rate soared from 6.2% in September 2008 to 8.5% in March 2009 and is likely to rise further when the April numbers are released this Friday.

In the past two recessions, the labor market continued to lose jobs even after economic growth turned positive. Most conventional analyses indicate that this trend will continue when the current recession turns to recovery. However, given the depth and speed of the job losses, we expect that employment growth will return sooner and stronger than it did in the previous two recoveries.⁷

Looking forward, we project the U.S. economy to reach a trough in the second or third quarter of CY 2009, as businesses begin replenishing inventories and personal consumption expenditures recover to more normal levels. Inflation remains subdued, and the Consumer Price Index actually recorded a year-over-year drop in March 2009. However, given the U.S. Federal Reserve's ultra loose monetary policy, the risks of prolonged deflation appear remote.

The Massachusetts Economy. The nature of this recession makes it difficult to predict its effect on the Massachusetts economy. On the one hand, the weakness in the financial industry should hurt the local economy. On the other, the local housing market has held up better than the nation's, with the Case/Shiller Home Price Index for the Boston area down only 7.2% for the year to February and down only 18.5% from its peak in July 2005.⁸ These compare well against the declines experienced in other regions.

In the most recent economic recovery, Massachusetts was late to turn around, and its economy had just begun to build momentum when the national economy began to falter. Massachusetts real GDP grew by 3.0% in 2006 and 2.5% in 2007, faster than the national economy for both years.

Meanwhile, the state economy has lost 105,700 jobs in the year to March 2009, including 35,500 in the first quarter of this year. As a result, the unemployment rate has risen from 5.5% in

⁷ U.S. Department of Labor, Bureau of Labor Statistics, "The Employment Situation: March 2009"; available at <http://www.bls.gov/bls/employment.htm> (accessed May 4, 2009).

⁸ The McGraw-Hill Companies; Standard and Poor; S&P/Case-Shiller Home Price Indices; available at http://www2.standardandpoors.com/portal/site/sp/en/us/page.topic/indices_csmahp/0,0,0,0,0,0,0,0,2,1,0,0,0,0,0,ht ml (accessed December 9, 2008).

October 2008 to 7.8% in March.⁹ It is likely to rise further in the current quarter and peak in the second half of 2009.

The recession's hold on Massachusetts is likely to last into the third or fourth quarter of 2009. We are more optimistic about the labor market, insofar as the state avoided some of the more egregious abuses in financing residential housing. Moreover, Massachusetts has tracked this recession more closely to the national economy and will likely benefit quickly from a stabilizing national economy and ensuing recovery than in the previous recession.

(5) Methodology

The contraction of the Bay State economy will translate into lower tax revenues for the state in FY 2009. BHI revenue forecasts assume that there will be no additional change in Massachusetts tax policy for the forecast period, which runs through the end of fiscal year 2010.

Table 2 shows the forecasts by year and by major tax. Revenue for the first ten months of FY 2009 fell by 11.8%. We see continued contraction of economic activity in the months ahead, but at a slower pace, which is why we estimate that total revenue will fall by 9.3% for the full fiscal year. For FY 2010, we forecast almost no change in tax revenues from FY 2009. Personal income tax receipts will fall by 0.3% and sales tax revenue by 0.7% while other tax revenue will expand by 5.1%, driven by a 29.2% rise in the often volatile business excise tax.

The statewide revenue collections will be restrained by a drop in personal and corporate income taxes and general sales tax revenues. The trend during past recessions suggests that the revenues could fall further in the first half of FY 2010, before recovering in the second half of the fiscal year.

We prepared tax revenue forecasts for eleven categories for every month through June 2010. 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 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 December 2011.
2. For each tax series, we estimated a regression equation that relied mainly on past movements in 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 3) we included dummy variables in the regression equations in order to pick up the effect of major changes in the tax code.

⁹ U.S. Department of Labor, Bureau of Labor Statistics; Regional and State Employment and Unemployment; available at <http://www.bls.gov/bls/employment.htm> (accessed March 3, 2009).

Table 2**Revenue Forecasts for Massachusetts, FY2009 and FY2010**

CY	Actual 2006	Actual 2007	Actual 2008	Forecast 2009	Forecast 2010
US economy (calendar year)¹					
Personal income (\$ billion)	10,994	11,663	12,103	12,345	12,777
% change p.a.	7.1	6.1	3.8	2.0	3.5
Employment (millions)	136.1	138.2	135.1	133.3	134.7
% change p.a.	1.8	1.5	-2.2	-1.3	1.0
Unemployment rate, %	4.6	4.9	7.2	8.5	7.5
Massachusetts (calendar year)¹					
Personal income ² (\$ billion)	10,483	11,477	12,484	11,035	11,008
% change p.a.	8.2	9.5	9.6	-11.6	-0.3
Real Personal income (\$ billion)	4,004	4,065	4,087	3,886	3,857
% change p.a.	3.0	1.5	0.5	-4.9	-0.7
Employment ('000)	1,391	1,588	1,512	1,534	1,525
% change p.a.	30.8	14.2	0.0	1.5	-0.6
Unemployment rate, %	865	888	1037	656	847
Population ('000)	34.5	2.6	0.2	-36.8	29.2
% change p.a.	672	679	673	659	689
	-2.1	1.1	0.0	-2.0	4.5
BHI forecast, MA taxes, (fiscal year)					
Personal income tax (\$ million)	10,483	11,477	12,484	11,035	11,008
% change p.a.	8.2	9.5	9.6	-11.6	-0.3
Sales Tax	4,004	4,065	4,087	3,886	3,857
% change p.a.	3.0	1.5	0.5	-4.9	-0.7
Corporation Excise	1,391	1,588	1,512	1,534	1,525
% change p.a.	30.8	14.2	-0.0	1.5	-0.6
Business Excises	865	888	1037	656	847
% change p.a.	34.5	2.6	0.2	-36.8	29.2
Motor Fuels	672	679	673	659	689
% change p.a.	-2.1	1.1	0.0	-2.0	4.5
Total Taxes	18,487	19,736	20,879	18,844	18,987
% change p.a.	8.2	6.8	5.81	-9.7	0.8

Notes: ¹ From New England Economic Partnership, *Fall Economic Outlook*, November 2008. * BHI estimate

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 were determined initially by examining the autocorrelation and partial correlation coefficients in the correlogram and fine-tuned after examining the structure of the equation residuals.

Table 3 provides the BHI revenue forecast in detail. The left side of the table contains the revenues and the percentage increase from the previous year broken out into the individual tax categories – the actual revenues for FY 2008 and the BHI projections for FY 2009 and FY 2010. The right side of the table provides the model specification used to forecast each tax and the timeframe for each data series used in the model.¹⁰

Table 3									
Revenue forecasts, disaggregated, for FY09 and FY10, including technical estimation details									
	FY08	FY09	FY10	% change		AR	MA	Vars/Dummies	Dates
				FY09	FY10				
Income tax									
Estimated payments	2,940	2,458	2,132	-16.4%	-13.3%	12	1,4,12		79:6-09:04
Tax Withheld	9,056	8,936	9,053	-1.3%	1.3%	1,12	1,12	01:1,02:1,FY02	79:6-09:04
Returns & Bills	2,265	1,758	2,072	-22.4%	17.9%	12	1,12		79:6-09:04
Refunds	1,777	2,117	2,250	19.1%	6.3%	1,11,12	1		79:6-09:04
Income Net	12,484	11,035	11,008	-11.6%	-0.3%				
Sales & Use taxes									
Sales & Use taxes	4,087	3,886	3,857	-4.9%	-0.7%	1,3,12	1,12		79:6-09:04
Corporation Excise	1,512	1,534	1,525	1.5%	-0.6%	1,12	3,12		79:6-09:04
Business Excises	1,037	656	847	-36.8%	29.2%	12, 27	1,12		79:6-09:04
Alcohol Beverages	71	71	73	0.2%	2.1%	1,2,7,12	1,12		79:6-09:04
Cigarettes	437	460	458	5.2%	-0.4%	12	12	83:7, 93:1, 96:10, 02:8, 08:7,FY02	79:6-09:04
Motor Fuels	673	659	681	-2.0%	3.3%	1,12	12	90:9, PI, C	79:6-09:04
Other taxes	468	544	539	16.2%	-0.8%	12,18	1,12	FY02	79:6-09:04
Effects of Tax Law Changes									
Total Taxes	20,768	18,844	8,987	-9.3%	0.8%				
<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.									

¹⁰ A complete breakdown of revenue forecasts by month and by the 11 tax headings is available on request.