



Massachusetts Tax Revenue Forecasts for FY 2011 and FY 2012

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December 14, 2010

The Beacon Hill Institute at Suffolk University is pleased to offer its revenue forecast for Fiscal Year (FY) 2011 and FY 2012 at today's Consensus Revenue Hearing.¹ We divide our report into three sections, in which we provide (1) our latest forecast, (2) background information on the national and state economies and (3) a summary of the methodology used to provide our forecast.

(1) Current Forecast

BHI predicts that tax revenues will be:

- \$20.363 billion in FY 2011, an increase of 9.8% over FY 2010, and
- \$21.265 billion in FY 2012, an increase of 4.4% over FY 2011.

Our forecast accounts for revenue losses of \$46 million in FY 2011 and \$110 million for FY2012 attributable to the repeal of the sales tax on alcohol mandated by the voters November 2, 2010.²

¹ The staff of the Beacon Hill Institute at Suffolk University, including Paul Bachman, Frank Conte, Eli Cutler and David G. Tuerck, assisted in the preparation of this report at the request of the Senate and House Committee Chairmen of the Joint Ways and Means Committees. The authors would also like to thank Research Economist Michael Head and Fall Interns Jesse Dalton and Charlotte Qiongyu Hu of Boston University and Taylor Lewis of Suffolk University.

² Massachusetts Department of Revenue estimates.



(2) Background on the National and State Economies

The U.S. Economy

According to the National Bureau of Economic Research, the recession ended in June 2009. Real Gross Domestic Product (GDP) grew by 5.0% in the fourth quarter of 2009. However, real GDP growth for the first, second and third quarters of 2010 was 3.7%, 1.7% and 2.5%, respectively.³ We expect growth to continue to be sluggish but positive over the next few quarters. *The Wall Street Journal* Economic Forecasting Survey for November 2010 estimates that the economy will grow by 2.9% in calendar year 2011.⁴ The latest *Economist* poll of forecasters is more optimistic calling for 3.2% growth in 2011.⁵

Third quarter growth was propelled by personal consumption expenditures, private inventory investment, nonresidential fixed investment, international trade and federal government spending. The housing sector continued to contract – the result of a negative contribution from residential fixed investment.⁶

The employment picture remains grim. Despite expansive monetary and fiscal policies, the national unemployment rate has remained above 9.0% since May 2009. The employment situation for November indicates that 15.1 million workers, or 9.8% of the workforce, are unemployed. Of these workers, 41.8% have been unemployed for 27 weeks or more. Additionally, 2.5 million people, according to the Bureau of Labor Statistics *Household Survey*, were no longer in the workforce but would be willing to work if offered a job. The number of these “marginally connected” workers has risen by 2.3 million over last year. The BLS classifies 1.3 million people as discouraged workers.⁷

Non-farm employment increased by only 39,000 in November. This was a dramatic drop from the 172,000 new jobs in October 2010. Private sector payroll employment rose by 50,000 for the month. U.S. non-farm payrolls have increased by only 842,000 since November 2009, with private employers hiring 1.09 million workers in the same period.

While these figures are mildly encouraging, the labor market is not creating enough jobs. The increased productivity of the last few quarters is a sign that employers may be ready to hire permanent employees, but that scenario has yet to materialize. In addition, an aggressive regulatory regime and the new health care law contribute to uncertainty and, as a result, inhibit

³ U.S. Department of Commerce, Bureau of Economic Analysis, “Gross Domestic Product,” <http://bea.gov/national/xls/gdpchg.xls>, November 23, 2010 (accessed November 28, 2010).

⁴ *Wall Street Journal*, “Economic Forecasting Survey,” November 2010 <http://tinyurl.com/23x8nep>, (accessed December 9, 2010).

⁵ The *Economist* poll of forecasters, December averages as published in the December 11, 2010 issue.

⁶ U.S. Department of Commerce, Bureau of Economic Analysis, “Gross Domestic Product: Third Quarter 2010,” http://bea.gov/newsreleases/national/gdp/2010/pdf/gdp3q10_2nd.pdf (accessed November 28, 2010).

⁷ U.S. Department of Labor, Bureau of Labor Statistics, “Employment Situation Summary: The Employment Situation – October 2010,” <http://www.bls.gov/news.release/empsit.nr0.htm> (accessed November 28, 2010).

employers from making the types of investments necessary to generate large-scale productive job creation.

Consumers have started to spend again. Retail sales have rebounded strongly, surging by 7.3% over the past 12 months. The National Retail Federation reported that 8.7% more shoppers visited stores this year and spent 6.4% more than a year ago. The research firm Coremetrics reports that sales from Thanksgiving Day through the following Saturday were up 14%.⁸

Forward-looking market indices have also rallied since the end of the recession. The Dow Jones Industrial Average has risen by 5.5% and the NASDAQ index by 8.9% over last year.⁹ The Case-Shiller 20-City Composite Home Price Index returned to its 2003 level in August, although it dipped recently in the third quarter of 2010.¹⁰

Although the economy has continued to grow through 2010, it is unclear how much of its growth is supported by strengthened fundamentals and how much is driven by loose monetary policy. The Federal Reserve has held short-term interest rates to near zero since December 2008. In November 2010, the Federal Reserve began a second round of quantitative easing aimed at lowering long-term interest rates through the purchase of \$600 billion worth of treasury bonds. Markets had been anticipating this action since August.

The Massachusetts Economy

Through 2010, growth in Massachusetts has been robust. Real gross state product grew at annual rates of 6.0% in the first quarter of 2010 and 4.7% in the second quarter. The New England Economic Partnership (NEEP) expects this growth to slow to a 3.0% rate through March 2011.¹¹

The state unemployment rate peaked in January 2010 at 9.5% and has steadily declined. The preliminary report for October suggests an unemployment rate of 8.1%, or 282,900 persons. Employment figures continue to rise — corresponding to the decrease in unemployment. Massachusetts added 12,531 jobs in October and has posted moderate gains in nearly every month this year.¹² The state has added 46,758 jobs since November of 2009, which is 5.6% of all

⁸ First Trust Advisors L.P., “Monday Morning Outlook: It’s a Self-Sustaining Recovery,” <http://www.ftportfolios.com/Commentary/EconomicResearch/2010/11/29/its-a-self-sustaining-recovery> (accessed November 29, 2010).

⁹ Mondovisione, “November 2010 “Market’s Measure” Preliminary Report,” <http://www.mondovisione.com/index.cfm?section=news&action=detail&id=94451> (accessed November 29, 2010).

¹⁰ The McGraw-Hill Companies, Standard & Poor’s, “Broad-based Declines in Home Prices in the 3rd Quarter of 2010 According to the S&P Case/Shiller Home Price Indices,” <http://www.standardandpoors.com/indices/sp-case-shiller-home-price-indices/en/us/?indexId=spusa-> (accessed November 29, 2010).

¹¹ New England Economic Partnership, “Massachusetts Economic Outlook: November 2010,” <http://neecon.org/documents/MAOutlook2010q3-2014q4.doc> (accessed November 30, 2010).

¹² U.S. Department of Labor, Bureau of Labor Statistics, “Economy at a Glance: Massachusetts” <http://www.bls.gov/eag/eag.ma.htm> (accessed November 30, 2010).



the jobs created in the entire country over the same period. This is remarkable since the Massachusetts economy comprises only 2.8% of the nation's economy.

The Boston area leads the way in terms of reducing the state unemployment rate, with its own rate dropping by 1.2 percentage points from 8.5% to 7.3% from September 2009 to September 2010. The metropolitan region with the highest unemployment rate in the state, New Bedford, saw a reduction in unemployment from 12.2% to 11.1% over the same period.¹³ Recent reports point to an improving employment picture in Eastern Massachusetts since October 2009.¹⁴ According to Manpower's *Employment Outlook Survey*, 14% of the firms in the Northeast (New England, Pennsylvania, New Jersey and New York) surveyed intend to add workers in the first quarter of calendar year 2011.¹⁵ These developments are slightly offset, however, by high profile layoffs. Last week Framingham-based TJX, a leading retail company, announced the closings of its A.J. Wright stores both here and across the United States, a move that will cause 1,400 workers to be laid off in Massachusetts alone.¹⁶ Earlier this month, State Street Bank announced that it would cut 400 local jobs.¹⁷

There are solid reasons for Massachusetts' better-than-average performance. The state's strong mix of human capital and technology serves to buffer the Commonwealth from the harsh edges of a real-estate-driven recession. Massachusetts topped the Kauffman Foundation's "Information Technology & Innovation State New Economy Index" for 2010. This index assesses how state economies are best positioned to thrive in the global market, focusing on knowledge-based jobs, globalization, economic dynamism, transformation to a digital economy, and technological innovation capacity.¹⁸ And the state continues to perform well according to our own *State Competitiveness Index*, although this year it dropped to third behind North Dakota and Colorado, the latter a long-time high-tech competitor to the Bay State.

The Commonwealth continues to enjoy the benefits of a diverse economy underpinned by human and venture capital and a reasonable tax regime. Job growth in the Commonwealth centers on the state's economy ability to hold onto – and increase – health care, information

¹³ See <http://www.beaconhill.org/EconomicIndicatorsProject/November2010Publication-Indicators.pdf>.

¹⁴ Matt Carroll and Kathy McCabe, "Job picture brightens by a shade," *Boston Globe*, December 12, 2010. http://www.boston.com/news/local/massachusetts/articles/2010/12/12/north_of_boston_unemployment_improves_by_a_shade/ (accessed December 12, 2010).

¹⁵ Manpower, Inc. "Manpower Employment Outlook Survey: United States," (December 2010):4, http://us.manpower.com/us/en/multimedia/MEOSQ1_2011_PreEmbargo.pdf (accessed December 12, 2010).

¹⁶ Thomas Grillo and Donna Goodison, "TJX to shutter A.J. Wright chain, cut 1,400 jobs in Massachusetts," *Boston Herald*, December 10, 2010, http://www.bostonherald.com/business/general/view.bg?articleid=1302219&utm_source=Enews&utm_medium=email&utm_campaign=SitewideUpdate_DATE_12-10-2010--16.15 (accessed December 12, 2010).

¹⁷ Beth Healey, "State Street to cut 400 Mass. jobs," December 1, 2010, *Boston Globe*, http://www.boston.com/jobs/news/articles/2010/12/01/state_street_to_eliminate_400_mass_jobs/ (accessed December 12, 2010).

¹⁸ The Information Technology & Innovation Foundation, The Kauffman Foundation, "The 2010 State New Economy Index," (November 2010) http://www.kauffman.org/uploadedfiles/snei_2010_report.pdf (accessed November 30, 2010).

technology and professional business service jobs. The construction sector also showed some improvement since October 2009.

We expect continued growth and expanding employment through 2011. The state enjoys the relative stability of large health and education industries and demand for the state's technology products and exports should continue.

(3) Methodology

On November 2, Massachusetts voters repealed the sales tax extension to alcoholic beverages purchased in stores effective January 1, 2010. The Massachusetts Department of Revenue estimates that the repeal will reduce revenues by \$46 million in FY 2011 and \$110 million in FY 2012. 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 FY 2012. Table 1 shows the forecasts by year and by major tax.

For the first 5 months of FY 2011(July 2010 through November 2010) tax revenues have grown at 10.2% over the first five months of FY 2010, led by a 100.9% increase in corporate income tax revenues, a 12.7% increase in sales tax revenues and a 7.5% increase in personal incomes tax revenues. We see this trend continuing for the rest of the fiscal year, with personal income tax revenues increasing by 10.2%, sales tax revenues by 7.1% and corporate income tax revenues by 27.4%. For the full FY 2011 we expect total tax revenues to increase by 9.8% over FY 2010.

For FY 2012, we forecast a 4.4 % increase in tax revenues over FY 2011. Personal income tax revenues will increase by 6.0% and sales tax revenues will increase by 4.1%. Corporate income tax revenues will fall by 8.5%. But this decline follows a surge of 27.4% in FY 2011. Meanwhile business excise tax revenues will rise by 39.6%. Other tax revenues will increase by 6.2%.

Alcohol, cigarettes and other taxes will be the lagging sources of tax revenue for FY 2011, down 0.5%. But these will rebound in FY 2012 by 3.2%.

Table 1					
Economic Forecasts for Massachusetts, FY2011 through FY2012					
CY	Actual 2008	Actual 2009	Forecast 2010	Forecast 2011	Forecast 2012
US economy (calendar year)¹					
Personal income (\$ billion)	11,362	11,144	11,241	11,548	12,105
<i>% change</i>	0.7	-1.9	0.9	2.7	4.8
Employment (millions)	136.8	130.9	130.3	131.5	134.3
<i>% change</i>	(0.6)	(4.3)	-0.5	0.9	2.1
Unemployment rate, %	5.8	9.3	9.7	9.5	8.6
Massachusetts (calendar year end)¹					
Real Gross State Product	312	303	314	326	342
<i>% change.</i>	1.9	-3.1	3.8	3.8	5.0
Real Personal income (\$ billion)	305	301	303	311	324
<i>% change</i>	-0.1	-1.5	0.8	2.4	4.3
Employment ('000)	3,290	3,174	3,172	3,200	3,258
<i>% change</i>	0.3	-3.5	-0.1	0.9	1.8
Unemployment rate, %	5.3	8.4	8.5	7.9	7.3
BHI forecast, MA taxes, (fiscal year)					
Personal income tax (\$ million)	12,484	10,584	10,110	11,144	11,810
<i>% change</i>	8.8	(15.2)	(4.5)	10.2	6.0
Sales Tax	4,087	3,869	4,612	4,940	5,141
<i>% change</i>	0.5	(5.3)	19.2	7.1	4.1
Corporation Excise	1,512	1,549	1,600	2,039	1,866
<i>% change</i>	(15.8)	2.4	3.3	27.4	(8.5)
Business Excises	1,037	550	520	576	804
<i>% change</i>	52.3	(46.9)	(5.6)	10.9	39.6
Motor Fuels	673	654	655	672	685
<i>% change</i>	(0.5)	(2.8)	0.2	2.6	1.9
Alcohol, Cigarettes and Other Taxes	1,087	1,053	1,047	1,037	1,070
<i>% change</i>	(2.7)	(3.0)	(0.6)	(0.5)	3.2
Effect of Tax Law Change				(46)	(110)
Total Taxes	20,879	18,259	18,544	20,363	21,265
<i>% change</i>	5.8	(12.5)	1.6	9.8	4.4

Notes: ¹ From New England Economic Partnership, *Fall Economic Outlook*, November 2010.

We prepared tax revenue forecasts for eleven categories for every month through June 2012. 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 June 2012.

2. For each tax series, we estimated a regression equation that extrapolates from historical data to predict the future. For estimated and withheld income taxes and motor fuels tax, we included personal income as an independent variable. We used dummy variables 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 the 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. The details are given in Table 2.

Table 2									
Revenue forecasts, disaggregated, for FY 11 and FY 12, including technical estimation details									
	FY10	FY11	FY12	% change		AR	MA	Variables/Dummies	Dates
				FY11	FY12				
Income tax									
Estimated payments	1,959	2,118	2,441	8.1	15.3	12	1,4,12	PI	79:6-11:10
Tax Withheld	8,863	9,272	9,724	4.6	4.9	1,12	1,12	01:1,02:1,PI	79:6-11:10
Returns & Bills	1,261	1,673	1,627	32.7	-2.7	12,23	1,12	(R & B)-12	79:6-11:10
Refunds	-1,974	-1,919	-1,982	-2.8	3.3	1,11,12	1		79:6-11:10
Income Net	10,110	11,144	11,810	10.2	6.0				
Sales & Use taxes	4,612	4,940	5,141	7.1	4.1	1,3,12	1,12		79:6-11:10
Corporation Excise	1,600	2,039	1,866	27.4	-8.5	3,12	1,12		79:6-11:10
Business Excises	520	576	804	10.8	39.6	3,12	1,12		79:6-11:10
Alcohol Beverages	71	73	73	2.8	0.0	1,2,7,12	1,12		79:6-11:10
Cigarettes	456	449	450	-1.5	0.2	12	12	83:7, 93:1, 96:10, 02:8, 08:7	79:6-11:10
Motor Fuels	655	672	685	2.6	1.9	1,12	12	PI, C	79:6-11:10
Other taxes	520	515	547	(1.0)	6.2	1,12,18	1,12		79:6-11:10
Effects of Tax Law Changes		(46)	(110)						
Total Taxes	18,544	20,363	21,265	9.8%	4.4%				
<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." (R & B)-12 refers to the returns & Bills data lagged by 12 months. PI refers to Personal Income and C, a constant variable. Our numbers have been adjusted to reflect the revenue decrease due to the repeal of the sales tax on alcoholic beverages.									

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 2010 and the BHI

projections for FY 2011 and FY 2012. 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.¹⁹



¹⁹ A complete breakdown of revenue forecasts by month and by the eleven tax headings is available on request.