



Massachusetts Tax Revenue Forecasts for FY 2022 and FY 2023

The Beacon Hill Institute for Public Policy Research

165 Main Street, Medway, MA 021053

www.beaconhill.org

855-244-4550

bhi@beaconhill.org

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The Beacon Hill Institute is pleased to offer its updated revenue forecast for Fiscal Year (FY) 2022 and FY 2023.¹ We divide our report into three sections: (1) a summary of our latest forecast, (2) background information on the national and state economies, and (3) an overview of the methodology used to provide our projections.

(1) Current Forecast

BHI predicts that tax revenues will be:

- **\$36.109 billion in FY 2022, 5.8% above FY 2021, and**
- **\$37.047 billion in FY 2023, 2.6% above FY 2022.**

The 5.8 percent increase in FY 2022 tax revenues reflects the state's resiliency in its continued recovery from the pandemic-induced recession.² We assume there to be no economic setback resulting from the recent surge in COVID-19 cases. BHI projects that state revenues will increase by 2.6 percent in FY 2023, driven by strong business activity and job growth.

¹ Prepared by the staff of the Beacon Hill Institute, including William F. Burke, Frank Conte and David G. Tuerck.

² Based on BHI calculations.

(2) Summary of National and State Economies

(2a) The US Economy

The US economy rebounded in 2021 as states lifted restrictions and businesses reopened. However, with the recent surge in cases nationwide, combined with other risk factors, national economic growth could slow down from its torrid pace earlier in the year. Recent weeks have seen COVID-19 cases increase due to the spread of the Omicron variant. Moreover, the country faces widespread supply chain disruptions leading to elevated price levels. Meanwhile, inflation is no longer considered transitory.

The US unemployment rate stands at 4.2 percent as of November, down from its recession high of 14.7 percent in April of 2020.³

According to the Bureau of Economic Analysis (BEA), US real gross domestic product (GDP) increased 2.1 percent in the third quarter of 2021, down from 6.7 percent in the previous quarter.⁴ The slowdown in economic growth reflects an increase in new business restrictions and delays because of increasing COVID-19 cases. Positive contributions came from increases in "private inventory investment, PCE, state and local government spending, and nonresidential fixed investment that were partly offset by decreases in residential fixed investment, federal government spending, and exports."

In October, US personal income increased by \$93.4 billion (0.5 percent).⁵ Disposable personal income (DPI) decreased \$63.0 billion (0.3 percent) and personal consumption expenditures (PCE) increased \$214.3 billion (1.3 percent). As of November 2021, the annual inflation rate is 6.8 percent, the largest annual increase since June 1982.⁶

According to the IHS Markit US Composite PMI, US output growth slowed down slightly in December from the previous month. IHS Markit reported that the continued increase in output represented "a strong rise in private sector business activity."⁷

In November, the number of unemployed persons fell by 542,000 people to 6.9 million. Total nonfarm payrolls increased by 210,000. Professional and Business services lead the way, rising by 90,000 jobs from the previous month. Other notable increases were in the transportation and warehousing, construction, manufacturing, and financial activities sectors. The retail trade sector continues to struggle, declining by 20,000 jobs from the previous month. Heavy losses occurred in general merchandise stores (20,000 jobs) and clothing accessories stores (18,000 jobs). Overall, employment in the retail trade sector has declined by 176,000 since February 2020.⁸

For October 2021, the *Wall Street Journal Economic Forecasting Survey* predicts economic growth of 5.2 percent, 3.6 percent, and 2.2 percent for CY 2021, 2022, and 2023, respectively.⁹ The economists in the

³ Bureau of Labor Statistics, The Employment Situation (December 2021), <https://www.bls.gov/news.release/empsit.nr0.htm>

⁴ Bureau of Economic Analysis, Gross Domestic Product (December 2021), <https://www.bea.gov/news/2021/gross-domestic-product-3rd-quarter-2021-second-estimate-corporate-profits-3rd-quarter>

⁵ Bureau of Economic Analysis, Personal Income and Outlays (December 2021), <https://www.bea.gov/news/2021/personal-income-and-outlays-october-2021>

⁶ Ibid.

⁷ IHS Markit PMI (December 2021), <https://www.markiteconomics.com/Public/Home/PressRelease/f63974aa5288481688b386caf47905e1>

⁸ Ibid.

⁹ Wall Street Journal, Economic Forecasting Survey, <https://www.wsj.com/graphics/econsurvey/>

survey also predicted that the unemployment rate would be 4.6 percent, 3.9 percent, and 3.6 percent at the end of 2021, 2022, and 2023, respectively. In its final estimate for CY 2021, the *Economist* predicts that US GDP will expand by 5.5 percent.¹⁰ In its annual *Monetary Report*, The Federal Reserve Bank reports a median estimate of an increase of 5.5 percent in 2021, 4.0 percent in 2022, and 2.2 percent in 2023.¹¹ The OECD projects economic growth of 5.6 percent, 3.7 percent, and 2.4 percent in 2021, 2022, and 2023, respectively. The OECD notes that "while price inflation is projected to moderate in some sectors as supply disruptions abate, higher wages, along with recent increases in housing rents and shipping rates, will lead to stronger overall consumer price growth than prior to the pandemic."¹²

Table 1
Economic Forecasts for the United States, CY 2021 through 2023

Forecasters	Date of Forecast	Forecast Years		
		2021	2022	2023
Federal Reserve Bank (Median)	December 2021	5.5%	4.0%	2.2%
OECD	December 2021	5.6%	3.7%	2.4%
Wall Street Journal Survey (Avg)	October 2021	5.2%	3.6%	2.2%

The number of people looking for jobs has increased as people holdout out of job opportunities to seek higher pay and better working prospects. According to the BLS, the number of job openings increased to 11 million, up 431,000 from the previous month, on the last business day of October. The number of job openings increased by over 4 million from October of 2020. The job openings rate remained little changed from the previous month at 6.9 percent, but up from 4.5 percent from the last year. Hires were little changed at 6.5 million while total separations fell to 5.9 million. Within separations, the quit rate decreased to 2.8 percent, while the layoffs and discharges rate was unchanged at .9 percent. The numbers show that workers are becoming more comfortable in quitting their jobs for other prospects, representing a strong labor market.

(2b) The Massachusetts Economy

The Massachusetts economy has continued its recovery from the trough of last year's economic contraction. However, the state's ongoing recovery faces several potential concerns, including soaring inflation, a rise in COVID-19 cases resulting from the Omicron variant, and uncertainty surrounding its labor market. Regarding the recent increase in new COVID-19 cases, Massachusetts had over 35,000 cases in the last week.¹³

¹⁰ *The Economist* Economic and financial indicators (Updated December 18, 2021) <https://www.economist.com/economic-and-financial-indicators/2021/12/16/economic-and-financial-indicators>

¹¹ Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents under their individual assessments of projected appropriate monetary policy" (December 15, 2021) <https://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20211215.pdf>

¹² OECD, United States Economic Forecast Summary (December 15, 2021) <http://www.oecd.org/economy/united-states-economic-snapshot/>.

¹³ United States COVID-19 Cases and Deaths by State, <https://www.cdc.gov/covid-data-tracker/#cases>

In the second quarter of 2021, the BEA estimated that Massachusetts real GDP was \$524.324 billion.¹⁴ The BEA estimates that GDP increased 6.7 percent, to \$514.307 billion, in the second quarter of 2021.¹⁵

In November, the Massachusetts unemployment rate increased to 5.4 percent, up from 5.3 percent in October, tied for 38th amongst the nation.¹⁶ The BLS estimated that Massachusetts added 14,100 jobs in November.¹⁷ Massachusetts has gained 519,500 jobs since April of 2020.¹⁸ The Massachusetts Labor Force Participation rate increased to 66.3 percent in November, up .3% in the previous month.¹⁹

The latest Department of Labor Unemployment Insurance Weekly Claims report noted that workers in Massachusetts filed 7,380 unemployment claims in the week ending December 11.²⁰ In the previous week, unemployment claims in the state totaled 7,799.²¹ Massachusetts had the 9th highest insured unemployment rate in the country in the week ending November 27.²²

In its most recent Beige Book, the Federal Reserve Bank reported that economic activity in New England "expanded at a modest pace on balance, but results were somewhat mixed." ²³ The report noted that restaurant sales rebounded in September after slowing in the previous month. Manufacturing, one of the smallest sectors, saw moderate growth in the third quarter, while staffing firms incurred significant revenue gains. However, "labor markets remained very tight, and wage increases ranged from moderate to very strong. Hiring advanced at a modest pace on average but increased churn— attributed in some cases to vaccine mandates—put a drag on headcounts." While the retail and tourism industries faced weakness in August due to the spread of the Delta variant, sales rebounded in September and October.

The TD Economics State Economic Forecast projects that the Massachusetts economy will grow 5.5% in 2021 and 4.3% in 2022.²⁴ According to the report, "a concentration of new-economy industries, including a bustling tech sector, will continue to propel growth in Massachusetts." Furthermore, the report adds that while the leisure and hospitality industries are experiencing new concerns regarding the Omicron variant, the state's high vaccination rate should allow for a lesser disruption. The state's real estate market has also shown signs of slowing down from its torrid pace, with growth finally falling below double digits.

The Bay State's share of US imports has declined in consecutive years. As a percentage of the national total, Massachusetts exports declined between 2019 and 2020 by 4.7 percent.²⁵ Trade with two of its three largest partners, Canada, and the United Kingdom, fell, according to the US Census. However, trade with China, the state's second largest partner, increased by 12.7 percent between 2019 and 2020.

¹⁴ Massachusetts Gross Domestic Product (December 2021),

<https://apps.bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1>

¹⁵ Ibid.

¹⁶ Bureau of Labor Statistics, "Massachusetts Economy" (December 2021) <https://www.bls.gov/eag/eag.ma.htm>

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Federal Reserve Bank of St. Louis, Labor Force Participation Rate (December 2021) <https://fred.stlouisfed.org/series/LBSSA25>

²⁰ U.S. Department of Labor, "Unemployment Insurance Weekly Claims Data – Report" (December 16, 2021)

<https://www.dol.gov/ui/data.pdf>

²¹ Ibid.

²² Ibid.

²³ Federal Reserve, Beige Book (December 1, 2021), https://www.federalreserve.gov/monetarypolicy/files/BeigeBook_20211201.pdf

²⁴ TD Economics, State Economic Forecast (December 2021), <https://economics.td.com/state-economic-forecast>

²⁵ United States Census Bureau, State Exports from Massachusetts (December 2021), <https://www.census.gov/foreign-trade/statistics/state/data/ma.html>.

(3) Methodology

For FY 2023, we estimate a 2.6 percent increase in state tax revenues from projected FY 2022 tax revenues. Net personal income tax revenues will increase by 2.4 percent. Corporate income tax revenues will increase by 9.8 percent, and business excise tax revenues will increase by 5.7 percent. Business excise taxes remain the most difficult to forecast. Sales tax revenues will increase by 1.5 percent. Other tax revenues will fall by 1.0 percent, and alcohol taxes will increase by 3.1 percent. Motor fuels taxes will fall by 2.0 percent, and cigarette taxes will fall by 3.5 percent.

We prepared tax revenue forecasts for 11 categories every month through June 2023. Three steps were needed to develop these forecasts.

1. We used national personal income and real gross domestic product projections to derive month-by-month growth rates of personal income and real gross domestic product for Massachusetts, allowing us to project personal income and real gross domestic product monthly through June 2023. Information on both metrics in Massachusetts is available quarterly. Monthly estimates for personal income were obtained by interpolation.
2. We estimated a regression equation that extrapolates from historical data to predict the future for each tax series. For estimated and withheld income taxes and other taxes, we included personal income and MA real gross domestic product as an independent variable. We used dummy variables to represent the effect of significant changes in the tax code.
3. In estimating the regressions, we paid particular attention to the structure of the errors to pick up the effects of seasonal, quarterly, and monthly variations in tax collections. This procedure 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 then fine-tuning after reviewing the structure of the equation residuals. The details are given in Table 3.

The left side of the table contains the revenues and the percentage increases from the previous year broken out into the individual tax categories – the actual revenues for FY 2021 and the BHI projections for FY 2022 and FY 2023. 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.²⁶

²⁶ A complete breakdown of revenue forecasts by month and by the eleven tax headings is available upon request.

Table 3
Revenue forecasts, disaggregated, for FY2022 and FY2023, including technical estimation details

	FY21	FY22	FY23	FY21	FY22	FY23	AR	MA	Vars/Dummies	Dates
Income tax										
Estimated payments	2,941	3,199	3,289	25.2%	8.7%	2.8%	1,2,4,5,12	3	PI, MA GDP	79:6-20:11
Tax Withheld	14,719	15,242	15,587	7.2%	3.6%	2.2%	1,2,3,9,10,12	12	PI, MA GDP	79:6-20:11
Returns & Bills	3,659	3,846	3,827	20.0%	5.1%	-5%	12	1,12	PI, MA GDP	79:6-20:11
Refunds	1,727	1,797	1,732	-2.8%	4.0%	3.6%	1,2,12	3,12	PI, MA GDP	79:6-20:11
Income Net	19,593	20,489	20,972	12.9%	4.6%	2.4%				
Sales & Use taxes										
Sales & Use taxes	7,834	8,556	8,684	15.0%	9.2%	1.5%	1,12	1,3,12,13	PI, MA GDP	79:6-20:11
Corporation Excise	3,590	3,458	3,796	43.6%	-3.7%	9.8%	12	1,3,12	CIT(-3)	79:6-20:11
Business Excises	525	561	593	23.7%	6.9%	5.7%	3,12	1,3,12	BUSEXC(-4)	79:6-20:11
Alcohol Beverages	93	94	97	5.8%	1.8%	3.1%	1,12	1,3,12	PI, MA GDP	79:6-20:11
Cigarettes	316	311	300	-24.1%	-1.5%	-3.5%	1, 12	1,24	83:7, 93:1, 96:10, 02:8, 08:7	79:6-20:11
Motor Fuels	662	720	706	-6.4%	8.8%	-2.0%	1,12	1,2,12	PI, MA GDP	79:6-20:11
Other taxes	1,524	1,918	1,899	17.1%	25.8%	-1.0%	1,12	2,12	PI, MA GDP	79:6-20:11
Effect of Tax Law Changes										
Total Taxes	34,137	36,109	37,047	15.3%	5.8%	2.6%				
<p>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 a period of data used in regression estimates." (PIEST)-12 refers to the income tax estimated payments data lagged by 12 months. PI refers to Personal Income, and MA GDP is Massachusetts Real Gross Domestic Product.</p>										

The Beacon Hill Institute for Public Policy Research focuses on federal, state, and local economic policies affecting citizens and businesses. The Institute conducts research and educational programs to provide timely, concise, and readable analyses that help voters, policymakers, and opinion leaders understand today's leading public policy issues.

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