

POLICY BRIEF

March 2020

Estimating the shortfall in Massachusetts tax revenue

In mere weeks, Covid-19 has battered the stock market, disrupted businesses of all sizes, and transformed daily life across Massachusetts. Lawmakers should prepare for an equally dramatic collapse in state tax revenues.

Given the uncertain path of the pandemic, and the evolving policy response, precise estimates are difficult. However, using economic projections from a variety of sources, we find that:

- Over the next 15 months, the state could face a tax revenue shortfall of \$1.8 billion to \$3 billion.
- The decline in tax revenue will be immediate, beginning in March and resulting in a \$500 million to \$750 million shortfall before the end of the fiscal year on June 30.
- Even as revenues decline, emergency spending on urgent health needs and essential economic support is likely to increase, further straining the state budget.
- Federal infusions should help address this fiscal challenge. That includes heightened support for MassHealth along with several billion dollars in other Covid-related aid.
- Massachusetts could also draw on the state's rainy day fund, provided such withdrawals are calibrated to ensure adequate reserves across multiple years, including in scenarios where the economic decline proves especially severe.

This policy brief highlights the unprecedented pace of economic decline from Covid-19, estimates the impact on near-term tax revenues, and discusses some of the options lawmakers have for filling the widening budget hole.

The Economic Situation

One thing that distinguishes the Covid-19 crisis from previous economic downturns is the pace of decline. Never before has the stock market [dropped so quickly](#), or unemployment [risen so rapidly](#).

This sudden economic stoppage is an essential part of fighting off the pandemic. Shuttering businesses, canceling large gatherings, and requiring people to stay at home is a recipe for economic calamity, but it is also the best hope for slowing the spread of the disease — and hopefully making it possible to have a functioning economy again in the not-too-distant future.

Essential or not, however, this intense economic contraction will have a damaging effect on people's well-being, the survival of businesses, and the state budget.

Market analysts are suggesting that the next few months could be worse than the nadir of the Great Recession of 2007-2009. Whereas the worst single quarter of that downturn involved an 8.4 percent

contraction of the US economy — the sharpest since 1958 — Goldman Sachs, JP Morgan, and the Conference Board are projecting declines of 24-30 percent for the April-June period.¹

The Coming Revenue Falloff

Figuring out what all this means for the Massachusetts state budget is challenging but crucial. To this end, The Center for State Policy Analysis has developed a simple model based on the historically strong connection between Massachusetts tax revenues and national GDP.²

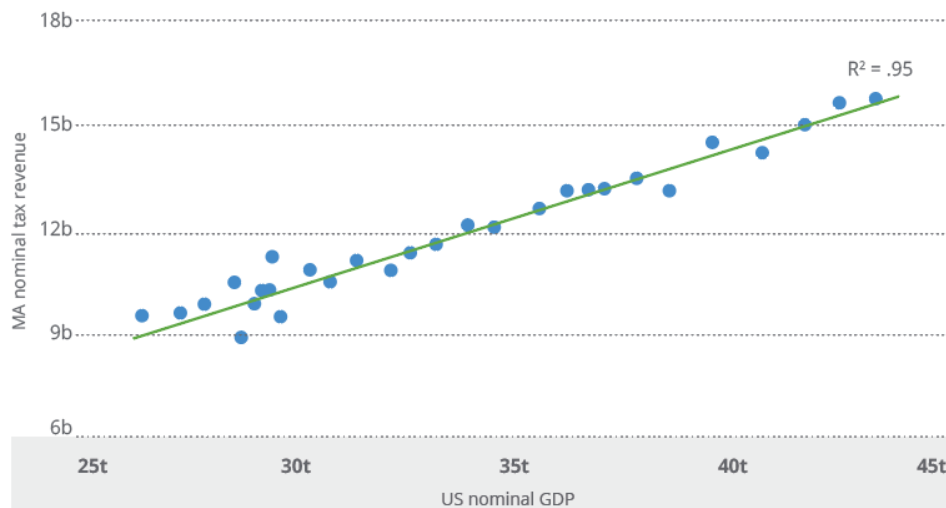
State tax revenues follow US GDP in a very tight and very regular way, as is clear from the scatterplot below, which compares GDP with Massachusetts tax revenues for every six-month period going back to 2006. Statistically, 95 percent of the variance in tax revenues is explained by changes in GDP.

Note in particular:

- There are no dramatic outliers, no dots far from the norm indicating that the relationship breaks down in turbulent times. Though it should be said that the largest variance is in 2008, when tax revenues fell further than the overall pattern would predict.
- The fact that this relationship holds for such high-level variables — i.e., total tax revenues and nationwide GDP — means it isn't necessary to delve into the impact on different kinds of taxes (capital gains, sales, withholding, etc.). Adding such second-order issues might allow for greater accuracy, but it would also require a host of additional assumptions, which could generate model overfitting problems.

Figure 1: US GDP strongly correlated with MA tax revenues

Comparing US GDP against Massachusetts tax revenues, every half-year since FY 2006



SOURCE: Bureau of Economic Analysis. Massachusetts Comptroller. Both datasets seasonally adjusted.

Figure 2 uses this tight correlation between US GDP and state tax revenues to project the potential tax shortfall in FY 2020 and FY 2021, building off economic forecasts from Goldman Sachs, JP Morgan, and the Conference Board.³ As these forecasts only extend through December 2020, cSPA's model assumes a relatively robust recovery in the period from January-June 2021, with catch-up GDP growth of 4 percent.

Small differences in the underlying assumptions can translate into big differences in outcomes, particularly when it comes to the timing of any recovery. An economic turnaround in the fall would leave the FY 2021 budget in substantially better shape, whereas waiting for a winter recovery creates a deeper hole.⁴

Figure 2: GDP and Tax Revenue Projections

Using GDP projections from various sources to estimate tax revenue shortfalls in FY 2020 and FY 2021

	GDP Growth Jan-Jun 2020	GDP Growth Jul-Dec 2020	Catch-Up Growth Jan-Jun 2021*	Tax Shortfall FY 2020	Tax Shortfall FY 2021
Goldman Sachs	-8.9%	1.1%	4%	540m	1.2b
JP Morgan	-11.1%	-2.9%	4%	753m	2.3b
Conference Board	-9.6%	-6.3%	4%	608m	2.6b

SOURCE: Links to these sources can be found in endnote 1.

* The 4% catch-up growth estimate for Jan-Jun 2021 is from the Center for State Policy Analysis.

Challenges for Lawmakers

When revenues drop below expectations, the state has to compensate: either by raising taxes, cutting spending, or drawing money from the rainy day fund. Lingering deficits are not permitted.

The federal government is poised to help in a variety of ways, including but not limited to: increased funding for MassHealth, an education stabilization fund to help states support schools and colleges, and [an estimated \\$2.7 billion](#) in Covid-related aid to Massachusetts (and the city of Boston).

While this federal aid should provide a substantial cushion, a lot depends on how the Covid crisis affects the spending side of the Massachusetts budget. In one dire week, New York [committed \\$600 million](#) to purchase desperately needed medical supplies. How much will Massachusetts have to spend on direct health outlays as the ultimate scale and cost of Covid preparations expand?

Beyond the week-by-week needs, there are also longer-term spending implications. Some issues that seem marginal in the midst of a public health crisis may emerge as urgent in FY 2021. Among them:

- *The November election*, which could require a wholesale rethinking of how we vote in Massachusetts (possibly by expanding vote-by-mail).
- *Support for cities and towns*, which rely heavily on state funding via local aid and education support.
- *Broadband equality*, if e-learning becomes a longer-term norm and poorer (or more rural) communities find themselves with limited access to education.
- *Small colleges*, which were already under intense financial pressure and which may not be able to survive another empty semester.
- *Transit systems and roadways*, where a lack of toll-paying drivers and fare-paying riders risks setting off a vicious circle of declining revenue leading to reduced investment.
- *The unemployment insurance trust fund*, which is likely to be strained by the surge in unemployment and will eventually need to be replenished by employers.

On the other hand, there could also be savings opportunities in these trying times — areas where state spending is currently unnecessary or infeasible. As an example, the pause in many elective medical procedures might generate short-term savings for the state.

If such savings don't materialize, and federal aid isn't sufficient to balance the state budget, a withdrawal from the rainy day fund could also make sense, since fighting off a sudden — and temporary — downturn is the main rationale for this account. The scale of any withdrawal, however, has to ensure adequate reserves for the following year. And when making this determination, it's important to consider "worst-case" scenarios for future needs.

In the near term, lawmakers should consider: 1) a new revenue estimate for FY 2021, given how much has changed since the current estimate was developed in January, and 2) a process for updating this estimate as the potential timing of a recovery becomes clearer.

Conclusion

No one really knows how effectively we're bending the curve on this pandemic, how far-reaching the economic damage will be — or when we might find some new normalcy. But one thing that seems increasingly certain is that the state will likely face a dramatic drop-off in revenues, potentially amounting to between \$1.8 and \$3 billion before the end of FY 2021.

The Center for State Policy Analysis is ready to provide non-partisan assessments of future legislative plans and proposals as lawmakers set spending patterns and priorities for these shifting fiscal circumstances.

cSPA is a research organization located at Tisch College, Tufts University, dedicated to providing timely research on live legislative issues. For more information on this memo or cSPA, contact Evan Horowitz, Executive Director, at 646.714.2442 or evan.horowitz@tufts.edu.

¹ These are annualized numbers — which is the norm when discussing GDP growth. Details of these estimates are available at: Goldman Sachs: <https://www.goldmansachs.com/insights/pages/us-daily-20-march-2020.html>
JP Morgan: <https://www.bloomberg.com/news/articles/2020-03-26/jpmorgan-sees-2q-u-s-gdp-contracting-25-with-pain-in-store>
The Conference Board: <https://www.conference-board.org/data/usforecast.cfm>

² One virtue of this approach is that you get a well-founded estimate with very few assumptions — at a time when standard economic assumptions are being strained by novel circumstance.

³ Shortfalls are calculated relative to the revised FY 2020 benchmark of \$30.289b and the FY 2021 consensus revenue estimate of \$31.151b.

⁴ One wrinkle is the state's decision to defer Tax Day from April 15 to July 15. Doing so will provide a breather for some filers but will also push hundreds of millions of dollars of tax receipts into next fiscal year. That shift can be offset through various accounting and short-term borrowing plans, and isn't reflected in the estimates below.