The Beacon Hill Institute

Rolling Back the Sales Tax to 5%: A Win for Massachusetts

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TABLE OF CONTENTS

TABLE OF TABLES

Executive Summary

Under Initiative Petition 17-21, Massachusetts would reduce the state sales and use tax rate from 6.25% to 5% and make permanent the "Sales Tax Holiday" weekend in August.[1] The sales tax was raised from 5% to 6.25% in 2009.

The Massachusetts sales tax was born of broken promises. When adopted in 1966, Governor John Volpe promised that its passage would make it possible to reduce local property taxes. The legislature enacted it as a temporary tax, set to expire after two years. It neither resolved the problem of rising property taxes nor expired in two years.

The most recent increase in the tax rate came after a long string of budget crises. A rising sales tax, however, is a poor solution to state's budget problems. Unlike the income tax, which can be calibrated to tax residents in a more equitable fashion, the sales tax is inherently regressive. Also, the sales tax impinges particularly hard on Massachusetts retailers because of the proximity of retailers operating out of tax-free New Hampshire.

The Beacon Hill Institute for Public Policy (BHI) estimated the effects of rolling back the sales tax rate to 5% using our Massachusetts STAMP (State Tax Analysis Modeling Program).[2] We found that a reduction in the sales tax to 5% would produce a more competitive business environment, resulting in a growing economy that produces higher private employment, investment, and disposable income. It would create 9,654 jobs and increase inflation-adjusted disposable income by $362 million its first year in effect. The increase in economic activity would mitigate the loss in sales tax revenue. Wheres opponents of the Initiative Petition predict a revenue loss of $1.25 billion, we

[1] 17-20 An Initiative Petition for A Law Reducing the Burden of Sales and Use Taxes, Massachusetts Office of the Attorney General, Initiatives and Other Types of Ballot Measures, Petitions Filed, (April 2018), http://www.mass.gov/ago/government-resources/initiatives-and-other-ballot-questions/.
[2] For a description of the model see http://www.beaconhill.org/STAMP_Web_Brochure/STAMP_EconofSTAMP.html.

predict a loss of only $998 million when increases in revenue from other state taxes are taken into consideration.[3]

We also conducted a distributional analysis of the I.P. 17-21 to determine how the tax cut would reduce income inequality, long seen as particularly high in Massachusetts.[4] We determined that the fraction of household income saved by the tax cut is far larger for low-income households than it is for high-income households. The fraction of their income saved by households with annual incomes of $25,000 and less would be seven times the fraction saved by households with incomes of $100,000 and more.

Finally, we calculated the dedicated revenue due to the MBTA under the tax cut. If we ignore the expansionary effects of the tax cut on the sales tax base, we find that the dedicated revenue would not change at a 5% rate. However, if we account for the expansion of the sales tax base, then the dedicated revenue would increase by $6.760 million under the tax cut.

Introduction

The November 2018 Massachusetts ballot is slated to contain Initiative Petition 17-21, which would reduce the state sales and use tax rate to 5% and make permanent the "Sales Tax Holiday" weekend in August.[5]

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[3] Michael P. Norton, "Sales Tax Reduction Opponents Say Baker Should Outline Spending Cuts," *State House News Service*, May, 1 2018, https://ballotpedia.org/Massachusetts_Sales_Tax_Decrease_and_Tax-Free_Weekend_Initiative_(2018).

[4] See, for example, "Boston's income divide largest in US," *Boston Globe*, January 15, 2006, https://www.bostonglobe.com/business/2016/01/14/boston-tops-list-most-unequal-cities/FSHEoXBxYiWtXrA6OY7nsL/story.html.

[5] *17-20 An Initiative Petition for A Law Reducing the Burden of Sales and Use Taxes*, Massachusetts Office of the Attorney General, Initiatives and Other Types of Ballot Measures, Petitions Filed (April 2018), http://www.mass.gov/ago/government-resources/initiatives-and-other-ballot-questions/.

The proposition went to the Legislature for its approval, but because the Legislature did not act on the initiative by May 2, the Initiative proponents must collect and submit another 10,792 signatures to the Massachusetts Secretary of State by July 3. If the second round of signature collections is successful, the Initiative will appear on the November 6, 2018, statewide ballot.[6]

The state sales tax is relatively new to Massachusetts. State lawmakers instituted the first statewide sales tax on April 1, 1966, at a rate of 3%, making Massachusetts the 41st state to enact a sales tax. At the time, local property taxes in towns across the state were soaring.[7]

Recalling the situation, then state representative and former Governor Michael Dukakis said, "It was bad. Property taxes were really becoming a big burden especially to the elderly, people on fixed incomes and so on."[8] Dukakis opposed the sales tax at the time, saying he felt, "it hits low and moderate income people much harder than it does the wealthy."[9] He and other Democrats favored an increase in the state income tax.

Republican Governor John Volpe proposed the sales tax in order to provide state aid to cities and towns to help moderate local property tax rates. Volpe won passage of the sales tax measure on the seventh attempt.[10]

The Massachusetts sales tax is part of a long history of taxes that did not live up to the promises made by their sponsors. Initially, lawmakers enacted the sales tax as a

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[6] The Massachusetts Main Street Fairness Coalition, *Massachusetts Main Street Fairness Coalition Collects 95,123 Certified Signatures In Support of Sales Tax Reduction Ballot Initiative* (December 6, 2017), http://www.citationmachine.net/apa/cite-a-press/manual.

[7] Edward B. Herwick III, "Tracing the Origins of the Massachusetts Sales Tax," WGBH News, The Curiosity Desk, (January 16, 2018), https://news.wgbh.org/2018/01/16/local-news/tracing-origin-massachusetts-sales-tax.

[8] Ibid.

[9] Ibid.

[10] Ibid.

temporary measure, set to expire in 1968. However, a ballot initiative to rescind the new sales tax failed by a 3 to 1 margin and emboldened lawmakers to make the tax permanent. According to Dukakis, "Volpe, to his credit, made that argument that there would be significant reductions in property taxes and people bought it."[11] As it happened, property taxes continued to skyrocket throughout the next decade, until the passage of Proposition 2½ in 1980, which limited property tax increases to 2.5% per year.

Taxes have a way of sticking around long past their expiration date. The most infamous "temporary" tax in U.S. history is the federal telephone excise tax of 3%, levied on long-distance telephone calls in 1898 to fund the Spanish American War. The tax was finally repealed on July 31, 2006, after more than a century following its adoption.[12]

The Massachusetts personal income tax has also undergone several increases. In 1989, the Massachusetts legislature "temporally" increased the personal income tax rate from 5% to 5.75% due to falling revenue, resulting in part from the savings and loan crisis. It was indeed temporary, with another increase the following year to 6.25%. Thanks to a sunset clause on that increase, the rate was reduced to 5.95% in 1992 and has fallen over the years to 5.10%, where it stands today.[13]

Despite his initial opposition, Dukakis learned to love the sales tax when he became Governor in 1975. To address one of many state budget crises, Dukakis raised the sales tax rate to 5%, a whopping 67% increase, where it stayed until another budget crises erupted more than three decades later.[14]

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[11] Herwick.
[12] Jonathan Williams, "The Spanish American War Tax (1898 – 2006)?" The Tax Foundation, (June 29, 2006) https://taxfoundation.org/spanish-american-war-tax-1898-2006/.
[13] Citizens for Limited Taxation. *Tax Cuts of the '90s*, http://cltg.org/tax_cuts.htm.
[14] Herwick.

On August 1st, 2009 Governor Deval Patrick presided over a 25% increase in the state sales and use tax, from 5% to 6.25%. The increase was in response to falling state revenue during the "Great Recession."

Arguments For and Against Rolling Back the Sales Taxes

Supporters of the IP 17-21 argue that a reduction in the state sales tax will speed the states economic recovery while forcing a bloated state government to cut back on spending. They point out that many Massachusetts residents cross the border into New Hampshire to go shopping tax-free.[15]

Opponents insist that public services are already stretched and that a reduction of this magnitude is impossible without harming public priorities such as education, infrastructure, and healthcare. Many Massachusettes residents are also opposed to reducing the sales tax on the ground that it would reduce funding for the MBTA. The AFL-CIO Legislative Director John Drinkwater commented that the reduction in the sales tax will "create a 1.2 billion dollar hole in a state budget that is in need of more revenue, not less, in order to make needed investments in education, infrastructure, health care and human services."[16]

But higher taxes, especially higher state sales taxes, do not simply produce revenue. Because a tax increase discourages the activities (work, investment, and consumption) on which the tax is imposed, it causes a shrinkage in economic activity.

[15] Mass.gov. (n.d.), *Sales and Use Tax*, https://www.mass.gov/guides/sales-and-use-tax.
[16] Machado, E., "Sales tax reduction ballot question met with opposition from labor and transportation groups" (February 2, 2018), http://www.wwlp.com/news/state-politics/sales-tax-reduction-ballot-question-met-with-opposition-from-labor-and-transportation-groups/1082430144.

Conversely, a tax reduction, while it does reduce government revenue, also incentivizes households to work, invest and consume.

Tax-Free Sales from the Internet and Tax-Free NewHampshire

Massachusetts bricks and mortar retailers, particularly those located in the northern part of the state, have had to battle competition from tax-free New Hampshire for decades. The migration of retail sales to online retailers without a presence in Massachusetts has exacerbated the problem. Many national retailers and small "mom-n-pop" retailers are losing this two-front war and closing up shop.[17]

Table 2 displays data from the U.S. Census Bureau for three counties in Massachusetts that border New Hampshire and three counties in New Hampshire counties that border Massachusetts.[18]

Table 1: Retails Sales for Massachusetts and New Hampshire Border Counties

New Hampshire	Retail sales ($1,000s)	Population (2017)	Per capita retail sales ($)
Cheshire	1,692,504	75,960	22,282
Hillsboro	7,724,727	409,967	18,842
Rockingham	6,764,542	306,363	22,080
Massachusetts			
Worcester	10,916,535	826,116	13,214
Middlesex	21,344,600	1,602,947	13,316
Essex	10,037,894	785,205	12,784

The first two columns display retail sales and population for each county, respectfully. The third column displays the per capita retail sales for each county. Retail sales in the

[17] Mike Carraggi, "17 Massachusetts Retailers On Verge Of Bankruptcy, New Moody's Report Says" (June 14, 2017), https://patch.com/massachusetts/boston/17-massachusetts-retailers-verge-bankruptcy-new-moodys-report-says.

[18] U.S. Census Bureau, Quick Facts, https://www.census.gov/quickfacts/fact/table/US/PST045217.

New Hampshire counties are nearly double those in the Massachusetts counties. Retailers in the New Hampshire counties enjoy a tremendous cost advantage over their Massachusetts based counterparts due to the absence of a New Hampshire sales tax.

There exists a substantial academic literature that shows a significant impact on retail sales of a state or local sales tax. A study by Brian Baugh of the University of Nebraska – Lincoln, Itzhak Ben-David of Ohio State University, and Hoonsuk Park of Nanyang Technological University estimates the effect of imposing a tax on online retail sales. The authors use transaction data from states that recently imposed the sales tax on purchases from Amazon.com. The study finds that after the states imposed the sales tax an Amazon sales, its sales to households living in those state fell by 9.4%, "implying elasticities ranging from –1.2 to –1.4."[19] In other words, Amazon sales fall by 1.2%- 1.4% for each percentage point in tax its customers have to pay on products ordered from Amazon.[20]

A study by Austan Goolsbee in the *Quarterly Journal of Economics* uses individual survey data from Forrester Research to estimate the impact of sales tax rates on the likelihood that individual consumers purchase online. He finds that sales tax rates have a positive and statistically significant impact on the amount of spending the consumer does online, and concludes that taxing internet sales could reduce the number of online buyers by 24% and spending by more than 30%.[21]

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[19] Brian Baugh, Itzhak Ben-David, Hoonsuk Park, "Can Taxes Shape an Industry? Evidence from the Implementation of the 'Amazon Tax,'" Ohio State University, Fisher College of Business Working Series, (January 2018), http://ssrn.com/abstract=2422403.

[20] Ibid.

[21] Austan Goolsbee, "In a World Without Borders: The Impact of Taxes on Internet Commerce," *Quarterly Journal of Economics*, Volume 115, Issue 2 (May 1, 2000), pp. 561–576, http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.337.646&rep=rep1&type=pdf.

Studies of cross-border tax differentials found ample evidence that state sales tax rates alter the pattern of retail sales in areas near the state borders. A study by Michael J. Walsh and Jonathan D. Jones in the *National Tax Journal* showed this effect.

Walsh and Jones pooled a sample of annual time-series and cross-sectional data over 1979 - 1984 to calculate "the sensitivity of per capita grocery store sales in 46 West Virginia counties to changes in state sales tax rates." From 1980 – 1982, West Virginia phased-out the state sales tax on retail sales of food sold in grocery stores by cutting the tax one-percentage point per year. Virginia is the only state that borders West Virginia and levies a sales tax on food sold in grocery stores and Virginia did not change the tax rate during this period. This circumstance allowed for a natural way to test cross-border effects of sales tax changes.

The study showed that "as the sales tax is phased out, increases in grocery store sales are more rapid in those West Virginia counties which border neighboring states (Kentucky, Maryland, Ohio, Pennsylvania, and Virginia) than among interior counties." They also showed that for border counties in West Virginia, "each 1 percent drop in the sales tax rate implies an approximately 1 percent decrease in the after-tax price, which increases grocery store sales by about 5.9 percent." The authors conclude that "sales tax differentials are an effective incentive for consumers to cross state borders to take advantage of lower after-tax prices in low tax regions if they are near the border." [22]

A study by Mikesell examined retail sales in 173 Standard Metropolitan Statistical Areas and found that a one-percentage-point increase in the central-city tax rate relative to the suburban tax rate implied a 1.7% to 11% reduction in central-city per capita sales.

[22] Michael J. Walsh, and Jonathan D. Jones, "More Evidence On The 'Border Tax' Effect: The Case of West Virginia, 1979-84," *National Tax Journal* Vol. 41, pp.261-165, https://ntanet.org/NTJ/41/2/ntj-v41n02p261-65-more-evidence-border-tax.pdf?v=%CE%B1.

He also found that a larger central-city area implied slightly lower per capita sales in the central city.[23]

Another study by Mikesell compared per capita sales in Illinois counties that border other states with sales in interior Illinois counties for several classes of goods. He concluded that both total sales and grocery sales were lower among border counties because Illinois sales tax rates exceeded those of its neighbors.[24]

A study by Fisher found that food sales in the District of Columbia declined 17% for each percentage point increase in the differential of the D.C. sales tax rate compared to its neighbors.[25]

William Fox studied sales in counties on both sides of state borders in three urban areas in Tennessee. He found that a one-percentage point difference in sales tax rate implied a 1% to 4% reduction in sales in the high tax jurisdiction.[26]

Another study by Mikesell and Zorn (1986) examined changes in taxable sales due to a one-half percentage point sales tax increase temporarily adopted by a single small town in Mississippi. They concluded that each 1 percentage point of tax-rate differential lowered sales in the town by 3%. This resulted from lower sales per vendor, not from a reduction in the number of vendors.[27]

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[23] John L. Mikesell, "Central Cities and Sales Tax Rate Differentials: The Border City Problem," *National Tax Journal*, Vol. 23, 1970, pp. 206-214, http://www.jstor.org/stable/41791715?seq=1#page_scan_tab_contents.
[24] John L. Mikesell, "Sales Taxation and the Border County Problem," *Quarterly Review of Economics and Business*, Vol 11, 1971, pp. 23-29.
[25] Ronald C. Fisher., "Local Sales Taxes: Tax Rate Differentials, Sales loss, and Revenue Estimation," *Public Finance Quarterly*, Vol 8, 1980, pp.171-188, http://journals.sagepub.com/doi/pdf/10.1177/109114218000800203.
[26] William F. Fox, "Tax Structure and the Location of Economic Activity Along State Borders," *National Tax Jour*nal, Vol. 39, 1986, pp. 387-401, http://www.jstor.org/stable/41788622?seq=1#page_scan_tab_contents.
[27] John L. Mikesell and Kurt C. Zorn, "Impact of the Sales Tax Rate On Its Base: Evidence from a Small Town," *Public Finance Quarterly*, Vol 14, No. 3, 1986, pp. 329-338, http://journals.sagepub.com/doi/pdf/10.1177/109114218601400305.

The Fiscal and Economic Effects of a 5% Sales Tax

The Massachusetts sales and use tax is levied on the costs of final goods and services sold in the state, irrespective of where these goods originated. The sales tax does not fall on the goods or services that were produced in the state but sold outside the state.

The sales tax increases the cost of buying goods in the state, as opposed to buying them from tax-free vendors in New Hampshire and on the Internet. As a result, the sales tax reduces the quantity of goods purchased in the state as in-state goods become more expensive for both residents and visitors, causing the quantity of goods subject to the sales tax sold in the state to decrease. Thus, any changes to the sales and use tax would affect the level of consumption in the state economy and industries related to the retail sales sector.

To estimate the economic effects of tax policy changes, BHI has developed a Computable General Equilibrium (CGE) model. The purpose of the BHI model, called STAMP (State Tax Analysis Modeling Program), is to identify the economic effects of tax changes on a state's economy.[28] Using the STAMP model, we find that a reduction in the state sales and use tax from 6.25% to 5% would produce a more competitive business environment, resulting in a growing economy that produces higher employment, disposable income, and investment.

Table 1 shows that lowering the sales tax to 5% in the first year would increase investment by $445 million, disposable income by $362 million, and private employment by 9,654 jobs.

STAMP calculates the dynamic revenue effects, as opposed to static effects, of a tax change. Static estimates assume that there is no change in underlying economic activity

[28] For a description of the model see www.beaconhill.org.

in response to a change in tax law. For example, a static estimate of a cut in the sales tax from 6.25% to 5%, would cause revenues to fall by 20% (= (6.25 - 5)/6.25). A dynamic estimate would show a smaller drop in revenue because it would capture the positive effect on the tax base of the cut in the tax rate. One of the principal purposes of STAMP is to capture such dynamic effects.

Table 2: Fiscal & Economic Effects of Initiative Petition 17-21

Variable	2019	2020	2021	2022
Dynamic Sales tax revenue loss ($, mil.)	(1,269)	(1,367)	(1,427)	(1,491)
Revenue Changes for Other State Taxes ($, mil.)	271	283	291	300
Total Dynamic Revenue Change ($, mil.)	(998)	(1,084)	(1,136)	(1,191)
Private Employment (jobs)	9,654	9,582	10,071	10,451
Investment ($, mil.)	445	453	466	474
Disposable Income, real ($, mil.)	362	371	385	394
Taxable Retail Sales ($, mil.)	929	996	1,036	1,077

The lower tax rate would reduce sales tax revenues by $1.269 billion in 2019. However, the positive economic effects of the sales tax rollback would boost other tax revenues, such as the personal and corporate income taxes. Other state taxes would increase by $271 million in 2019, resulting in state tax revenues falling by a total of $998 million in 2019. This is as opposed to the $1.25 billion static loss claimed by opponents.

As time passes, the economic effects of the sales tax cut would produce modestly larger economic effects. By 2022, investment would increase by $474 million, disposable income by $394 million, private employment by 10,451 jobs.

In 2022, the tax cut would reduce sales tax revenue by $1.491 billion. Other tax revenues would increase by $300 million. In total, the state would lose $1.191 billion in tax revenue.

The difference between the static effect and dynamic effect on sales tax revenues allows us to calculate the retail sales increase (tax base expansion) due to the rollback.

We estimate that the sales tax rollback would increase taxable retail sales by $929 million, or 0.88% in 2019. Over time, the effects of the sales tax rollback would increase retail sales by $1,077 billion, or by 0.87% by 2022.

If we assume that the entire 1.25 percentage-point reduction flows through to a 1.25% reduction in retail sales prices, then our estimate implies a -.704 tax price elasticity of demand. In other words, a 1% reduction in the tax price leads to a .704% increase in the volume of retail sales. This result is well within the range found in the academic literature from the previous section. Moreover, since the sales tax rollback would affect both online sales and cross-border sales from New Hampshire, the elasticity is rather conservative, since the literature usually looks at either the effect of sales tax changes on cross-border or online sales, not both.

The Progressive Nature of the Sales Tax Reduction

The Massachusetts sales tax is levied at a flat rate of 6.25%, meaning that every taxpayer pays the same amount of tax on taxable items. At first glance, a regressive tax seems fair because everyone, regardless of income level, pays the same dollar amount. But in reality, it affects households differently. Lower income earners bear a heavier burden from the regressive sales tax because it takes a larger percentage of income from low-income taxpayers than from high-income taxpayers.[29]

Unlike an income tax, which generally applies to most income, the sales tax applies only to income that is spent on goods and a few services. As a result, sales taxes also indirectly affect savings. Higher income families are able to save a much larger share of their incomes than middle-income families. The lower income families rarely save at all

[29] See https://apps.irs.gov/app/understandingTaxes/teacher/whys_thm03_les02.jsp.

so any extra taxes hurt these families the most, making the sales tax again inherently regressive.

The academic literature supports the contention that sales taxes are regressive relative to income taxes. Donald Phares produced one of the most comprehensive studies of the distributional effects of state sales taxes. He found that the sales tax was consistently regressive.[30]

Jorge Barro of Rice University accesses the distributional impacts of state and local taxes using a Heterogenous-Agent model of a representative state. He found that "relative to income, the sales tax is regressive."[31] However, a study of the Canadian tax system finds that the regressivity of sales tax is less clear.[32]

The Massachusetts sales tax laws exempt numerous items from the tax base in an attempt to alleviate the regressivity of the tax. The two largest exemptions, in terms of impact on tax revenue are sales of "food for human consumption" (other than restaurant meals or food purchased with food stamps) and clothing items priced at $175 or less (excluding athletic or protective footwear). According to the Massachusetts Tax Expenditure Budget for the fiscal year (FY) 2019, these two exemptions will combine to reduce sales tax revenues by $1.059 billion. We estimate the total sales tax base in 2019

[30] Donald Phares, "Who Pays State and Local Taxes?" Cambridge, Mass.: Oelgeschlager, Gunn and Hain 1980, https://www.amazon.com/Who-Pays-State-Local-Taxes/dp/0899460267.
[31] Jorge Barro, "Distributional Impacts of State and Local Tax Policy in a Heterogeneous-Agent Model," Rice University, (October 11, 2017) http://www.jorgebarro.com/uploads/9/2/1/6/9216392/state_tax_model.pdf.
[32] Richard M. Bird and Michael Smart, "Finances of the Nation: Taxing Consumption in Canada: Rates, Revenues, and Redistribution" (February 1, 2017), *Canadian Tax Journal*, 2016, Vol. 64, No. 2, p. 417 and Rotman School of Management Working Paper No. 2909918, https://ssrn.com/abstract=2909918.

will be $105.28 and thus, these exemptions reduce the base by a little under $17 billion, or a little over 16%.[33]

Exempt products with large revenue effects include medical and dental devices ($560 million), residential electricity ($336 million), containers ($205 million), piped and bottled gas ($183.3 million) residential heating fuel ($77 million), water ($54 million) and textbooks ($54.5 million). Other exempt products with small revenue effects include newspapers and magazines, admission tickets, resales, out-of-state delivery, and drop shipments.[34]

BHI estimated the distributional effects on the I.P. 17-21 on Massachusetts households divided into 7 income categories. We used Massachusetts data for household demand from IMPLAN Group. IMPLAN contains data on household demand for commodities divided into 515 industries. We used the Massachusetts Tax Expenditure Budget for the FY2019 to remove exempt products and industries. For example, we removed all food items except those in the full-service, limited-service restaurant, industries and all other food and drinking places.

Next, we account for taxable business-to-business sales by adjusting the sales tax base to match the base that would produce sales tax revenue equal to the BHI projected revenue for the FY2019. We used the industry inflators within the IMPLAN data to inflate the data. The underlying assumption is that businesses pass the full value of any sales tax they pay on to their customers. The final sales tax base is $105.28 billion for 2019. Table 2 displays the results.

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[33] Massachusetts Executive Office of Administration and Finance, *Massachusetts Tax Expenditure Budget, Fiscal Year 2019*, (January 2018), https://www.mass.gov/files/documents/2018/02/12/teb2019.pdf.
[34] Mass.gov. (n.d.), "Sales and Use Tax," https://www.mass.gov/guides/sales-and-use-tax.

With a reduction in the sales tax, all taxed products in the state will cost less, leading to an increase in demand. This increase allows MA residents to continue their normal shopping demands without sacrificing a vital portion of their income.

The first three rows of Table 3 show the aggregate amount of sales tax paid by households in each income group under the 6.25% rate, a 5% rate and the difference between the two respectively. For example, the income group earning between $50,000 and $75,000 per year (a proxy for median income) pays $881.330 million in sales tax under the 6.25% rate and $701.93 million under a 5% rate, for a tax cut of $175.482 million. The fourth row contains the number of households in each income category.

The next set of rows display the result of dividing each of the first three rows in Table 3 by the number of households to obtain an average tax paid per household under each sales tax rate and the difference between the two. Looking at the income group earning $50,000 and $75,000 per year, each household pays an average of $2,048 in sales tax under the 6.25% rate and $1,638 under the 5% rate annually, for an average savings of $410 per household per year.

The final two rows of Table 2 contain average income for each household group and the sales tax savings under a 5% rate as a percentage of that income respectfully. Once again, looking at income group earning $50,000 and $75,000 per year, on average the households in this category earns $63,044 per year and the sales tax cut of $410 represents 0.6% of the annual income.

Focusing on the last row of Table 2, we see that the sales tax cut represents 0.3% to 5.8% of their income. The sales tax cut represents a larger percentage of income for the lowest bracket (5.8%) and steadily declines as income rises. The sales tax cut represents 3.3% for the second lowest income category and drops below 1% when income reaches

$35,000 to $50,000. Finally, families in the highest income bracket which earn an annual average of $324,587, the tax saves them $1,003 but represents only 0.3% of their income.

The results in Table 2 confirm that cutting the sales tax to 5% would benefit lower-income households more than higher-income households and would be a progressive change to the Massachusetts tax code.

Table 3: Distributional Results of I.P. 17-21 on Massachusetts Households by Income Brackets

Household Income Categories									
($ 000s)	Under 10	10-15	15-25	25-35	35-50	50-75	75-100k	100-150	150 and Up
Total Sales Tax Payments ($ million)									
Tax at 6.25%	152.728	105.691	281.560	302.877	457.698	881.330	877.413	1,502.805	2,004.297
Tax at 5%	122.182	84.553	225.248	242.301	366.159	705.064	701.930	1,202.244	1,603.438
Difference	30.545	21.138	56.312	60.575	91.539	176.266	175.482	300.561	400.859
# of Households	166,275	137,801	222,682	203,294	288,982	430,422	343,568	440,125	399,609
Tax Per Household ($)									
Tax at 6.25%	919	767	1,264	1,490	1,584	2,048	2,554	3,414	5,016
Tax at 5%	735	614	1,012	1,192	1,267	1,638	2,043	2,732	4,013
Difference	-184	-153	-253	-298	-317	-410	-511	-683	-1,003
Average Income ($)	3,188	4,603	12,837	23,283	37,706	63,044	92,686	137,751	324,587
Diff.% of Income	5.8	3.3	2.0	1.3	0.8	0.6	0.6	0.5	0.3

MBTA Funding Calculation

Since 2001, a penny of the state sales tax (excluding the tax on meals) has been dedicated to the funding MBTA. The current dedicated percentage of the sales tax revenue for the MBTA is 16% (1 cent of the 6.25 cents per dollar). One might worry that a reduction in the sales tax would reduce the MBTA's funding.

A report written by the Massachusetts Budget and Policy center earlier this year highlighted that revenues have fallen short of the original projections. In 2009, the state increased the sales tax rate from 5% to 6.25% but "total sales tax revenues nonetheless declined from their FY 1995 peak of 1.4% of total Massachusetts income to less than 1.2% anticipated for FY 2018." The MBTA sales tax transfers represented 0.23% of the state economy in FY 2001 but fell to 0.19% in FY 2018 (even including the $160 million addition that was folded into this sum). If the MBTA sales tax transfer had retained its same share of the economy since FY 2001, it would be $192.3 million higher today.[35]

Nevertheless, the MBTA funding would remain intact under a sales tax rate of 5%. As stated above, the MBTA gets a dedicated penny of the 6.25 cent sales tax levied for every dollar of taxable purchases regardless of the sales tax rate. If the rate were to fall to 5% then, the MBTA would receive 20% or 1/5 of the sales tax revenue. Presumably, if the sales tax rate were to fall to 1 %, the MBTA would receive 100% of the sales tax revenue.

In Table 3, we replicate the calculations in the "March 2018 Certification of MBTA Base Sales Tax Revenues and Dedicated Sales Tax Revenues for FY2019" from the Comptroller of the Commonwealth."[36] The top of Table 3, labeled "Calculation 1"

[35] MassBudget.com. (n.d.), "How Slow Sales Tax Growth Causes Funding Problems for the MBTA," http://massbudget.org/report_window.php?loc=MBTA_Sales_Tax_Explainer.html.

[36] Thomas G. Shack II, "March 2018 Certification of MBTA Base Sales Tax Revenues and Dedicated Sales Tax Revenues for FY2019," Comptroller of the Commonwealth, (March 5, 2018), http://www.macomptroller.info/comptroller/publications-and-reports/legislatively-mandated/mbta-certifications/march-2018-certification.pdf.

shows the calculation of the baseline revenue for the FY2019. The calculation uses either the Boston metropolitan area inflation rate for 2017 or the growth in sales tax revenues for 2017, whichever is less, to grow the FY2018 baseline revenue. The baseline MBTA revenue for 2019 is $ 1.32 billion.

The next section of Table 3 replicates "Calculation 2: Dedicated Sales Tax Revenue" from the same letter. This calculation uses the projected sales tax revenue for FY 2018, not including the meals tax revenue, or $5.368 million, and multiplies it by the 16% portion dedicated to the MBTA. The result is $858.880 million.

The calculation adds in $160 million per M.G.L. Chapter 10, Section 35T for total dedicated revenue of $1,018.880 million. Any shortfall between dedicated sales tax revenue and the base revenue would be made up by quarterly transfers from the General Fund, pursuant to the MOU and Chapter 10, Section 35T(b). Based on the calculations above, the FY2019 shortfall would be $13.187 million.

Now, were we to make the same calculations for a sales tax rate of 5% using static analysis, the dedicated revenue would be the same. The sales rate would fall by 20% ((6.25 -5 / 6.25) = 20%) and therefore the estimated sales tax revenue would fall by 20%, or $1,073.600 million. The projected sales tax revenue amount would fall to $4,294.400 million and the MBTA would receive 20%, or $858.880 million. Add in the $160 million for M.G.L. Chapter 10, Section 35T and we get $1,018.880 million, the same dedicated revenue as under the 6.25% sales tax rates.

However, the sales tax revenue loss would be less than the static analysis, as outlined in the economic effects section above. Therefore the MBTA dedicated revenue would rise slightly. Calculation 3 in Table 3 outlines the details.

The MA STAMP model estimates that sales tax revenues would fall by $1,269 million. If we assume that the meals tax portion of total sales tax revenue remains at its

Table 4: Effects of the Sales Tax Cut on MBTA Finances

Calculation No. 1 - Base Revenue:	
Change in inflation index for the Boston metropolitan area for the calendar year 2017	2.509%
Growth in gross sales tax revenue, for calendar year 2017	3.322%
Allowable base revenue	2.509%
Current fiscal year's base revenue (FY2018)	$1,006,806,769
Growth factor	2.509%
Upcoming fiscal year's base revenue (FY2019)	$1,032,067,551
Calculation No. 2 - Dedicated Sales Tax Revenue:	
Projected sales and use tax collections, exclusive of meals tax	$5,368,000,000
Percentage due to the MBTA	16%
16% of FY18 sales and use tax collections, exclusive of meals tax	$858,880,000
Plus $160 million per M.G.L. Chapter 10, Section 35T	$160,000,000
FY 2019 projected dedicated sales tax revenue	$1,018,880,000
FY2019 base revenue	$1,032,067,551
Difference, FY2019 dedicated minus base revenue	-$13,187,551
Calculation No. 3 - Dedicated Sales Tax Revenue with 5% rate:	
Dynamic revenue loss with sales tax cut to 5%	-$1,269,000,000
Meals tax portion	23.3%
Tax cut portion attributable to MBTA calculation	-$973,859,568
Projected sales and use tax collections, exclusive of meals tax	$4,394,140,432
Percentage due to the MBTA	20%
20% of FY19 sales and use tax collections, exclusive of meals tax	$878,828,086
Plus $160 million per M.G.L. Chapter 10, Section 35T	$160,000,000
FY 2019 projected dedicated sales tax revenue	$1,038,828,086
Difference, FY2019 dedicated minus base revenue	$6,760,536

historic average of 23.3%, then the sales tax revenue collections (excluding the meals tax) under a rate of 5% would fall to $4,394 million. The 20% portion dedicated to the MBTA would be $878.828 million, which is $19.948 million higher than under a sales tax rate of 6.25%. After the addition of the $160 million for M.G.L. Chapter 10, Section 35T, total MBTA dedicated revenue would be $1,038 million, or $6.761 million above baseline revenue from Calculation 1 in Table 3. In other words, the MBTA would gain $6.761 million in revenue under the sales tax rollback.

Conclusion

The state of Massachusetts levied a 3% statewide sales tax in 1966, when lawmakers promised it would be temporary and lead to lower property taxes. Both promises were broken. The sales tax became permanent and lawmakers increased the rate to 6.25% in 2009.

The sales tax rate is regressive in that it takes a larger portion of the income of low-income households than of the income of high-income households. Reducing the rate, therefore, would provide a relatively larger benefit to the poor than the rich and, in the process, reduce inequality.

The higher sales tax rate puts in-state retailers, generally small businesses, at a cost disadvantage to those in sales-tax-free New Hampshire or those that sell online. The disadvantage grows as shoppers continue to migrate to online providers.

If approved by the voters in November, the reduction in the state sales and use tax would boost the Massachusetts economy. The increased economic activity would lessen the loss of sales tax revenue by increasing the revenues from the personal and corporate income taxes.

The sales tax rollback would not only have little effect on the dedicated revenue stream to the MBTA, but the likely dynamic effects of the increase in economic activity would actually provide a modest increase.

Voters should keep these considerations in mind as well in deciding whether to support I.P. 17-21.

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