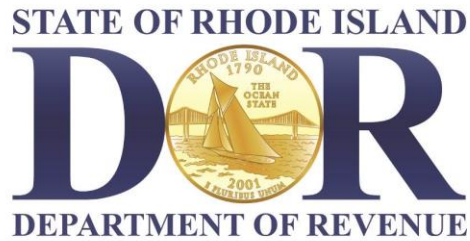


STATE OF RHODE ISLAND
GOVERNOR DANIEL J. MCKEE



Office of Revenue Analysis

State of Rhode Island Revenue Assessment Report
FY 2023 Methodology and Law Changes

Methodology Used to Estimate Expected Monthly and Year-to-Date FY 2023 Revenues

To determine the expected monthly and fiscal year-to-date revenues for the fiscal year, the Office of Revenue Analysis (ORA) first calculated, for each revenue item and fiscal year, the percentage of total fiscal year revenues that each month in the fiscal year comprised. ORA then took the historical revenue data and used different weighting methods to calculate moving averages to find the method that preformed the “best” in predicting the monthly distribution of the historical data. The best method was determined by calculating the standard error for each weighting method.¹ The weighting method that minimized the standard error for the revenue stream was selected. By undertaking this analysis, ORA was able to choose the weighting methodology that most accurately distributes total revenue over the months using history as a guide.

The methods tested included, but were not limited to:²

- A three-year moving average of the monthly share of total revenue, in which each year is weighted equally (i.e., 33⅓% per year).
- A five-year moving average of the monthly share of total revenue, in which each year is weighted equally (i.e., 20% per year).
- A five-year moving average of the monthly share of total revenue, in which each year is weighted using an exponentially decreasing order, with the most recent year (α) weighted at 50%, followed by 25% for the second most recent year, 12.5% for the third most recent year, and 6.25% each for the fourth and fifth most recent years.
- Lastly, a five-year moving average of the monthly share of total revenue, in which the Microsoft Excel Solver add-in program was used to determine alpha (α), which is the weight for the most recent year. The calculation of alpha by Excel Solver was subject to

¹ The standard error was measured as the root mean squared error (RMSE) of the weighting method divided by the average revenue value across all months of history. This statistic measures the average “miss” for each monthly prediction.

² A ten-year moving average, in which each year is weighted equally, was also tested for the estate and transfer tax.

the following constraints: Minimize the sum of squared errors; the value of α must be greater than zero and less than one; and the weight of each year must be lower than the previous year's weight. The weights of the subsequent years were calculated according to the following equations:

- The weight of the second year = $\alpha(1-\alpha)$;
- The weight of the third year = $\alpha(1-\alpha)^2$;
- The weight of the fourth year = $\alpha(1-\alpha)^3$; and
- The weight of the fifth year = $1-(\alpha + \alpha(1-\alpha) + \alpha(1-\alpha)^2 + \alpha(1-\alpha)^3)$.

A table depicting the weights used in each method tested is below:

Fiscal Year	3-year Moving Average, Equal Weights	5-year Moving Average, Equal Weights	10-year Moving Average, Equal Weights	5-year Moving Average, Exponentially Declining Weights Starting with $\alpha=50\%$	Solver Determined α, Exponentially Declining Weights
2022	33 $\frac{1}{3}$ %	20%	10%	50%	α
2021	33 $\frac{1}{3}$ %	20%	10%	25%	$\alpha(1-\alpha)$
2020	33 $\frac{1}{3}$ %	20%	10%	12.5%	$\alpha(1-\alpha)^2$
2019	n/a	20%	10%	6.25%	$\alpha(1-\alpha)^3$
2018	n/a	20%	10%	6.25%	1-sum of others
2017	n/a	n/a	10%	n/a	n/a
2016	n/a	n/a	10%	n/a	n/a
2015	n/a	n/a	10%	n/a	n/a
2014	n/a	n/a	10%	n/a	n/a
2013	n/a	n/a	10%	n/a	n/a

After testing, the best fit models for each revenue item were determined as follows:

Best Fit Model	Revenue Items
5-Year Moving Average Equal Weight	Personal Income Tax: All Components Health Care Provider Assessment Sales and Use Tax Motor Vehicle License Fees Cigarette Excise Tax Racing and Athletics Tax Lottery Transfer ³
5-Year Moving Average Exponentially Declining Weights ($\alpha = 50\%$)	Financial Institutions Tax Bank Deposits Tax Other Tobacco Products Excise Tax Alcohol Excise Tax

³ ORA used a three-year (FY 2020 – FY 2022) moving average with equal weights for on-site and remote sports betting.

Best Fit Model	Revenue Items
	Realty Transfer Tax Departmental Receipts
5-Year Moving Average Exponentially Declining Weights (α determined by Excel Solver)	Business Corporation Tax Public Utilities Gross Earnings Tax Insurance Company Gross Premiums Taxes
10-Year Moving Average Equal Weight	Estate and Transfer Tax

ORA then applied the weights associated with the best fit model for each revenue item to the percentage of adjusted revenues that occurred in a given month over the previous five fiscal years, except for estate and transfer taxes for which the previous ten fiscal years were used.⁴ The results were added to obtain a single monthly percentage of expected revenue. These percentages were then applied to the enacted FY 2023 revenue estimate for each revenue item. For the fiscal year-to-date estimates, the monthly percentages were summed and then applied to the enacted FY 2023 revenue estimate for each revenue item.

For FY 2023 monthly and fiscal year-to-date expected personal income tax final payment revenues, the expected revenues were determined using the above methodology for all revenues except for the pass-through entity payments. ORA then added the estimated pass-through entity payments to realized personal income tax final payments to yield adjusted personal income tax final payments revenues. The adjusted personal income tax final payments are then compared to the enacted FY 2023 personal income tax final payments expected revenues, which include estimated pass-through entity payments.

⁴ The previous five fiscal years are FY 2018 through FY 2022, and the previous ten fiscal years are FY 2013 through FY 2022.

Law Changes Enacted in the 2022 Session That Impact General Revenues

In the 2022 session, the General Assembly enacted several changes to the state's general laws that impact general revenues. These changes can be categorized as follows: (1) changes that impact FY 2023 general revenues that will be realized through the accrual and (2) changes that impact FY 2023 general revenues that will be realized through monthly revenue flows. The changes in state law that impact monthly revenue flows will generally exhibit seasonality in the receipt of the revenue. The Office of Revenue Analysis (ORA) attempts to model the seasonality in such revenue flows in order to better align the expected receipt of revenues with the actual receipt of revenues. A more specific discussion of these items is provided below.

Revenue Changes That Will Be Realized Through Accruals

Personal Income Tax Final Payments

The 2022 General Assembly enacted legislation for adding new modifications decreasing a taxpayer's federal adjusted gross income (AGI) for the calculation of the Rhode Island personal income tax. This modification subtracts from federal AGI any amount of military pension income. For FY 2023, the impact of this change is estimated to be \$(3,073,908). The General Assembly also enacted an increase to the pension and annuities decreasing modification from a maximum of \$15,000 to \$20,000, with an expected revenue impact of \$(1,565,283). Both of these revenue items are effective for tax years beginning on or after January 1, 2023. As TY 2023 returns are not filed until FY 2024, these enacted changes will impact revenues through the accrual only.

Revenue Changes That Will Be Realized Through Monthly Revenue Flows

Personal Income Tax Refunds and Adjustments

The 2022 General Assembly enacted legislation to provide a child tax rebate of \$250 per child up to three children for Rhode Island resident filers with a federal adjusted gross income (AGI) of up to \$100,000 for individual filers or \$200,000 for joint filers. These rebates are expected to impact revenue flows for refunds and adjustments in October 2022 through December 2022 for a total estimated impact of \$(43,800,000).

Also impacted refunds and adjustments is enacted legislation that increases the top income threshold for the property tax relief credit from \$30,000 to \$35,000 and increases the credit to \$600, effective January 1, 2022. For FY 2023, the impact of this change is estimated to be \$(3,694,591) and is expected to impact monthly revenue flows primarily in February through June.

Insurance Company Gross Premiums Tax

The 2022 General Assembly enacted initiatives that will impact the monthly revenue flows for insurance company gross premiums tax for health insurers. Included in the Governor's Recommended Budget were initiatives to extend Medicaid postpartum coverage from 60 days to 12 months postpartum, regardless of immigration status, and to extend Medicaid coverage to children who would otherwise be ineligible due to immigration status. These initiatives are expected to increase insurance company gross premiums tax revenues by \$103,500 and \$25,942, respectively. Also included in the Governor's Recommended Budget was a nursing home rate

adjustment, increasing the rate from 1.9% to 3.0%, and has an expected revenue impact of \$16,232. These three initiatives have an effective date of October 1, 2022, and the revenue changes are expected to impact the monthly revenue flows for insurance company gross premiums taxes paid by health insurers in October 2022 through June 2023.

Additionally, there were several initiatives enacted in the 2022 session that were effective July 1, 2022. Included in these initiatives are the following rate increases along with their expected revenue increases: Meals on Wheels, \$2,612; Medicaid hospital, \$244,429; Medicaid pediatric provider, \$105,600; Medicaid early intervention, \$80,000; and the Personal Choice program, \$58,151. Further, there were initiatives to expand the Medicaid home health eligibility and to increase coverage for palliative care, add coverage to biomarker testing, and to increase rates for antepartum, delivery, and postpartum care. These initiatives are expected to increase revenues by \$57,104 and \$289,895, respectively. All of the above initiatives are expected to be realized in the period of July 2022 through June 2023 in accordance with the monthly flow of revenues of all other insurance company gross premiums taxes paid by health insurers during this period.

Health Care Provider Assessment

The increase in the nursing home rate noted under insurance company gross premiums tax is projected to increase health care provider assessment revenues by \$133,314. The initiative has an effective date of July 1, 2021, and the increased revenues are expected to be realized in accordance with the monthly flow of health care provider assessment revenues.

Sales and Use Tax

Legislation was enacted in the 2022 session that provides three new sales and use tax exemptions for the trade-in value of motorcycles, funeral items (burial containers, urn liners, urn vaults, grave liners, grave vaults, burial tent setups, and prayer cards), and breast pumps (including breast pump collection and storage supplies), effective October 1, 2022. The expected revenue impact of these new exemptions is \$(149,514), \$(115,734), and \$(58,328), respectively. The motorcycle trade-in exemption is expected to impact revenues from October through June, and the funeral items and breast pump exemptions are expected to impact revenue flows from November through June.

Departmental Receipts

The 2022 General Assembly passed legislation enacting several law changes that impact the FY 2023 revenue flows for departmental receipts.

There are several new or increased regulatory fees under the Department of Environmental Management (DEM). The fee increases and their expected revenue impacts are as follows: air minor source permit fee from \$1,271 to \$2,500, \$39,328; air general permit fee from \$1,271 to \$2,500, \$70,053; fresh wetlands preliminary determination fee from \$1,000 to \$1,070, \$15,470; water quality certification fee from \$400 to \$428, \$672; onsite wastewater treatment system new building fee from \$1,000 to \$1,070, \$42,770; onsite wastewater treatment system variance fee from \$300 to \$321, \$1,008; onsite wastewater treatment system repairs fee from \$500 to \$535, \$48,615; and underground injection control fee from \$400 to \$428, \$2,296. These DEM fee increases are expected to impact revenue flows from July 2022 through June 2023. The new fees and their expected revenue impact are as follows: site remediation fee of \$500, \$27,000; leaking

underground storage tank fee of \$500, \$20,000; resubmission fee of \$1,000, \$50,000, and an annual compliance fee of \$500, \$250,000. These new fees are expected to impact revenue flows from January 2023 through June 2023. One fee increase is expected to impact revenue flows from January through June 2023, general Rhode Island pollutant discharge elimination system permit fee will increase from \$400 to \$600 and has an estimated revenue impact of \$7,000.

Also, during the 2022 session, legislation was enacted to allow judges to waive court costs for individuals who are determined to be unable to pay. Additionally, legislation was enacted to reduce court fees related to marijuana conviction expungement. These judiciary-related initiatives are expected to reduce departmental receipts by \$(305,652) and \$(362,048), respectively, beginning on July 1, 2022.

The 2022 General Assembly enacted legislation that exempts registered vehicles for the fee associated with the reissuance of the state's motor vehicle license plate. The estimated revenue impact of this motor vehicle plate exemption is \$(2,914,175) and is expected from October 2022 through June 2023.

Effective November 1, 2022, enacted legislation institutes a new registration fee for cottage food manufacturers using home kitchens to make food products for retail sales with sales limited to \$50,000. The revenue impact of this new fee is expected to be \$12,610 received evenly in the months of November 2022 through June 2023.

The 2021 General Assembly approved the Governor's proposal to decrease the interest rate for late payments on certain taxes, effective January 1, 2023. The projected revenue impact of \$(2,485,363) is anticipated to be realized in the months of April and June 2023 when the transfers to the departmental receipts interest on overdue taxes account will occur for taxes due after January 1, 2023.

Lottery Transfer

Legislation was enacted in the 2022 session to raise the prize cap for the payment of prize awards. This is expected to increase lottery transfer revenues by \$488,985. This enacted change is expected to impact monthly revenue flows in August 2022 through June 2023 in accordance with the monthly flow of revenues of all lottery transfer revenues during this period.