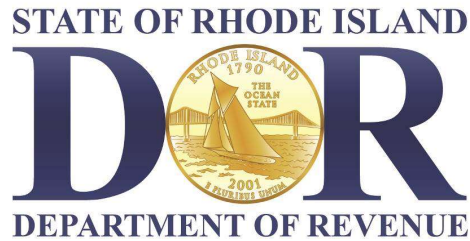


STATE OF RHODE ISLAND  
GOVERNOR DANIEL J. MCKEE



Office of Revenue Analysis

State of Rhode Island Revenue Assessment Report  
FY 2025 Methodology and Law Changes

**Methodology Used to Estimate Expected Monthly and Year-to-Date FY 2025 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.<sup>1</sup> 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:<sup>2</sup>

- 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 ( $\alpha$ ) 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 ( $\alpha$ ), which is the weight for the most recent year. The calculation of alpha by Excel Solver was subject to

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<sup>1</sup> 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.

<sup>2</sup> 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  $\alpha$  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:

<b>Fiscal Year</b>	<b>3-year Moving Average, Equal Weights</b>	<b>5-year Moving Average, Equal Weights</b>	<b>10-year Moving Average, Equal Weights</b>	<b>5-year Moving Average, Exponentially Declining Weights Starting with <math>\alpha=50\%</math></b>	<b>Solver Determined <math>\alpha</math>, Exponentially Declining Weights</b>
<b>2024</b>	33 $\frac{1}{3}$ %	20%	10%	50%	$\alpha$
<b>2023</b>	33 $\frac{1}{3}$ %	20%	10%	25%	$\alpha(1-\alpha)$
<b>2022</b>	33 $\frac{1}{3}$ %	20%	10%	12.5%	$\alpha(1-\alpha)^2$
<b>2021</b>	n/a	20%	10%	6.25%	$\alpha(1-\alpha)^3$
<b>2020</b>	n/a	20%	10%	6.25%	1-sum of others
<b>2019</b>	n/a	n/a	10%	n/a	n/a
<b>2018</b>	n/a	n/a	10%	n/a	n/a
<b>2017</b>	n/a	n/a	10%	n/a	n/a
<b>2016</b>	n/a	n/a	10%	n/a	n/a
<b>2015</b>	n/a	n/a	10%	n/a	n/a

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

<b>Best Fit Model</b>	<b>Revenue Items</b>
3-year moving average equal weight	Personal income tax: estimated payments
4-year moving average equal weight	Lottery transfer: on-site sports betting and remote sports betting <sup>3</sup>
5-year moving average equal weight	Personal income tax: final payments and withholding payments (see below for more detail on withholding payments) Health care provider assessment Sales and use tax Cigarette excise tax Racing and athletics tax Realty transfer tax

<sup>3</sup> ORA used a 4-year average from FY 2021 – FY 2024 for on-site and remote sports betting due to limited historical data.

<b>Best Fit Model</b>	<b>Revenue Items</b>
	Lottery transfer: combined games and video lottery terminals <sup>4</sup>
5-year moving average exponentially declining weights ( $\alpha = 50\%$ )	Personal income tax: refunds and adjustments Other tobacco products excise tax Alcohol excise tax Departmental receipts
5-year moving average exponentially declining weights ( $\alpha$ determined by Excel Solver)	Business corporation tax Public utilities gross earnings tax Financial institutions tax Insurance company gross premiums taxes Bank deposits tax Lottery transfer: table games <sup>5</sup>
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 three, five, or ten fiscal years.<sup>6</sup> The results were added to obtain a single monthly percentage of expected revenue. These percentages were then applied to the enacted FY 2025 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 2025 revenue estimate for each revenue item.

For FY 2025 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 (PTE) payments. ORA then added the PTE 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 2025 personal income tax final payments expected revenues, which include estimated PTE payments. The monthly distribution of estimated PTE payments was determined through a 4-year moving average equally weighted.

For FY 2025 personal income tax withholding payments, ORA adopted a methodology to account for the fact that some months have additional withholding tax due dates. Taxpayers file withholding payments on a monthly, quarterly, or weekly basis. ORA reviewed weekly withholding deposit data from FY 2020 through FY 2024. ORA calculated the percent of deposits for that week compared to the entire year and averaged that percentage across all five fiscal years. ORA then reviewed the CY 2024 withholding tax payment calendar<sup>7</sup> and constructed its own estimated CY 2025 withholding calendar (given that FY 2025 includes the first six months of CY 2025). ORA then looked at when the withholding for each payroll week was due to the state. For example, for CY 2024 payroll weeks 39 through 43 are due on October 3<sup>rd</sup>, 7<sup>th</sup>, 15<sup>th</sup>, 21<sup>st</sup>, and 28<sup>th</sup>,

<sup>4</sup> ORA used FY 2018 – FY 2019 and FY 2022 – FY 2024 for video lottery terminals due to closures related to the COVID-19 pandemic.

<sup>5</sup> ORA used FY 2017 – FY 2019 and FY 2022 – FY 2023 for table games due to closures related to the COVID-19 pandemic.

<sup>6</sup> The previous three fiscal years were FY 2021 – FY 2023, the previous five fiscal years were FY 2019 – FY 2023, and the previous ten fiscal years were FY 2014 – FY 2023.

<sup>7</sup> [https://tax.ri.gov/sites/g/files/xkqbur541/files/2023-11/WH\\_Calendar\\_2024\\_Final.pdf](https://tax.ri.gov/sites/g/files/xkqbur541/files/2023-11/WH_Calendar_2024_Final.pdf)

respectively. ORA's five-year average of deposits per week for those same weeks are 1.99%, 1.77%, 1.79%, 1.59%, and 1.75%, respectively. Those average deposit percentages were added together to generate the total share of withholding expected in October 2024, which is 8.88% (total differs due to rounding). This methodology allows for a larger share of expected payments in months with five withholding due dates for weekly filers (as opposed to the more common four due dates). For FY 2025, those months with five due dates are July 2024, October 2024, January 2025, and April 2025.

For electronic nicotine delivery systems (ENDS) tax, ORA used a 3-year average based on Massachusetts ENDS data from FY 2021 – FY 2023. Similarly, for iGaming, ORA used a 2-year average from Connecticut online gaming data from FY 2023 – FY 2024 to estimate expected revenues due to lack of historical data in Rhode Island.

### **Law Changes Enacted in the 2024 Session That Impact General Revenues**

In the 2024 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 2025 general revenues that will be realized through the accrual and (2) changes that impact FY 2025 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. 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**

The 2024 General Assembly enacted legislation to decrease the credit allowed from 100% to 90% to members of a pass-through entity (PTE) paying the elective PTE tax and to increase the pension modification from \$20,000 to \$50,000, both of which are expected to impact general revenues by \$8.6 million and \$(3.0) million in FY 2025. In addition, cannabis businesses are now allowed to deduct ordinary business expenses, which is expected to decrease revenue by \$(345,574) in FY 2025. The effective date for both of these items is on or after January 1, 2025. As TY 2025 returns are not filed until FY 2026, the PTE credit, pension modification, and cannabis business deduction changes will impact revenues through the accrual only.

#### ***Revenue Changes That Will Be Realized Through Monthly Revenue Flows***

##### **Personal Income Tax**

The 2024 General Assembly enacted legislation to enhance tax collection initiatives, including an expansion of the list of top tax delinquents to those who owe at least \$50,000, which are expected to yield \$3.6 million in revenue for FY 2025, effective October 2024.

##### **Business Corporations Tax**

The 2024 General Assembly enacted legislation to enhance tax collection initiatives, including an

expansion of the list of top tax delinquents to those who owe at least \$50,000, which are expected to yield \$2.1 million in revenue for FY 2025, effective October 2024. In addition, cannabis businesses are now allowed to deduction ordinary business expenses which is expected the decrease revenues by \$(344,574) in FY 2025, effective on or after January 1, 2024. ORA assumes that cannabis businesses (unlike personal income taxpayers) will lower their quarterly estimated payments to account for this change. Over the past five years, around 72% of total business corporations tax revenue is paid as estimated payments. ORA prorated the expected FY 2025 revenue loss for the cannabis business deduction change by 72%. The remaining impact would be reflected in the accrual.

### Financial Institutions Tax

The 2024 General Assembly enacted legislation to allow financial institutions taxpayers to elect single-sales factor apportionment when allocating their income to Rhode Island (as opposed to using sales, payroll, and property factors). This change, effective for on or after January 1, 2025, is expected to reduce revenue by \$7.7 million in FY 2025. While final TY 2025 tax returns are not filed until FY 2026, ORA expected that taxpayers who elect single-sales factor apportionment will lower their estimated payments due in April 2025 and June 2025, thus lowering cash collections for those months.

### Insurance Company Gross Premiums Tax

The 2024 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 add an income verification software subscription to obtain more accurate and timely income data, effective August 2024, that has a general revenue impact of \$(430,917); additional staffing for the expansion of the RIte Share program that will increase the revenues by \$(25,865), starting September 1, 2024; and implementation of increased social and human services program rates that have an anticipated general revenue impact of \$1.8 million for FY 2025, starting October 1, 2024.

### Sales and Use Tax

The 2024 General Assembly enacted initiatives that will impact the monthly revenue flows for sales and use tax. Included in the Governor's Recommended Budget were initiatives to enhance tax collection initiatives including an expansion of the list of top tax delinquents to those who owe at least \$50,000, which are expected to yield \$991,970 in revenue for FY 2025 effective October 2024. Also enacted was legislation to increase the state's cigarette tax from \$4.25 a pack to \$4.50 a pack for FY 2025, effective September 1, 2024, with an impact of \$(321,783) on general revenues (this impact is the result of ORA's assumption that cigarette tax increases will lower the number of packs sold in the state).

### Cigarette Tax

The 2024 General Assembly enacted initiatives that will impact the monthly revenue flows for excise taxes. Included in the Governor's Recommended Budget were initiatives to increase the state's cigarette tax from \$4.25 a pack to \$4.50 a pack for FY 2025, effective September 1, 2024, with an impact of \$2.6 million on general revenues (which includes \$748,375 in floor stock tax due in September). The FY 2025 enacted budget also includes a new tax on e-cigarettes, which is

effective January 1, 2025. This new tax is expected to bring in \$2.2 million in revenue (which includes \$294,344 in floor stock tax). ORA assumes that e-cigarette floor stock will be paid in January 2025. The first due date for regular e-cigarette collections is in February 2025.

### Departmental Receipts

Included in the FY 2025 enacted budget are ten revenue items that impact revenues for departmental receipts: an expansion of the list of top tax delinquents who owe at least \$50,000, which are expected to yield \$3.7 million in revenue for FY 2025 effective October 1 2024 and the elimination of the liquor manufacturers duplicate licensing fee, the real estate duplicate licensing fee, and the vessel discharge decal, which are in total expected to lower revenue by \$28,000. In addition, there is the shift of vital record fees to general revenue with an impact of \$380,000. All four preceding items are effective July 1, 2024, and are expected to impact monthly revenue flows in the general accordance with the revenue flows for departmental receipts. In addition, the enacted budget includes the elimination of sales and use tax exemption fee and tent inspection fee, which have a total expected revenue impact of \$(16,375), effective January 1, 2025. Also, legislation passed to update the hospital licensing fee for state-run hospitals to use a more recent base year, which will increase the revenues by \$4.0 million (ORA subtracts hospital licensing fee payments from departmental receipts for purposes of the Revenue Assessment Report). Finally, ORA expects \$7.0 million of Disproportionate Share Hospital payments to be received in June 2025.