Revenue Forecast Uncertainty Report

December 2025

Summary of Revenue Forecast Uncertainty for the Current Biennium

In Minnesota's November 2025 *Budget and Economic Forecast*, total revenues for the FY 2026-27 biennium are forecast to be $66.262 billion. This forecast was constructed twenty months before the current biennium closes. If this forecast has the same accuracy measured by the percentage of closing revenues as our previous twenty-months-ahead forecasts, then, on average, FY 2026-27 closing revenues should be between $63.750 and $68.775 billion ($66.262 ± $2.513 billion). A statistical approach using the variation in the historic errors gives a range of $61.975 to $70.550 billion for closing revenues with 90 percent confidence.

Estimating Revenue Forecast Uncertainty

Assessing a forecast's accuracy begins with computing the forecast error, the actual amount of revenues collected at the end of a biennium minus the forecast amount. To account for changes in the magnitude of the State's revenues, we measure forecast errors as percentages of closing revenues. The mean absolute percentage error (MAPE) is the average of the absolute values of the percentage errors and is a common and useful measure of overall forecast accuracy.[1]

The accuracy of a forecast of a single biennium's revenues improves as the time until the close of the biennium decreases. Therefore, we calculate separate errors for each time a biennium is part of the forecast: 32, 29, 20, 17, 8 and 5 months from the end of the biennium. We then compute the forecast error statistics for each time horizon using forecast experience for each biennium from FY 1990-91 to FY 2024-25, the most recently closed period.

The most prominent value in the *Budget and Economic Forecast* is the forecast of general fund total revenues rather than non-dedicated revenues. The difference between these two measures is that non-dedicated revenues do not include dedicated revenues, transfers, and prior year adjustments. It is possible to forecast those excluded revenue sources with high precision, so we omit them from the forecast error calculation to give a more accurate assessment of our actual forecast performance. For FY 2026-27, non-dedicated revenues are forecast to be $65.803 billion, and total revenues are forecast to be $66.262 billion, a difference of $459 million ($0.459 billion).

One measure of the possible range of closing values for the current biennium is the current forecast plus-and-minus the MAPE. The current forecast for FY 2026-27 is the second November forecast, twenty months from the close of the biennium. The MAPE for our historic twenty-month-ahead forecasts is 3.819 percent of non-dedicated revenues, which is approximately $2.513 billion given

[1] Prior versions of the Revenue Forecast Uncertainty Report used the term mean absolute error (MAE) but calculated the errors in percentage terms. We are updating the term to mean absolute percentage error (MAPE) to be clear about our methods, but the calculation remains the same as in previous reports.

the forecast for the current biennium (3.819 percent of $65.803). Consequently, for FY 2026-27 the possible range of closing values is $66.262 billion ±$2.13 billion, or $63.750 to $68.775 billion.

Another way to measure the degree of forecast uncertainty is to calculate a confidence range (CR) for the closing value using the historic percentage errors. A 90 percent CR for our revenue forecast is the range of values that statistical theory indicates will contain the actual value for total revenues with a probability of 90 percent. As with the MAPE, we calculate the CR as a percentage of non-dedicated revenues. Both the MAPE and the CR get smaller as the time until the end of a biennium decreases. Using our historic forecast errors, and statistical theory, we construct a margin of error (ME) which represents the range we expect the forecast error to be in with 90 percent confidence. The 90 percent CR is calculated at the forecast plus-and-minus the ME.

For a forecast 20 months from the close of a biennium, the ME is ±6.515 percent. For FY 2026-27, the ME is $4.287 billion (6.515 percent of $65.803 billion non-dedicated revenues) so the 90 percent confidence range is then $66.262 ±4.287 billion or $61.975 to $70.550 billion.

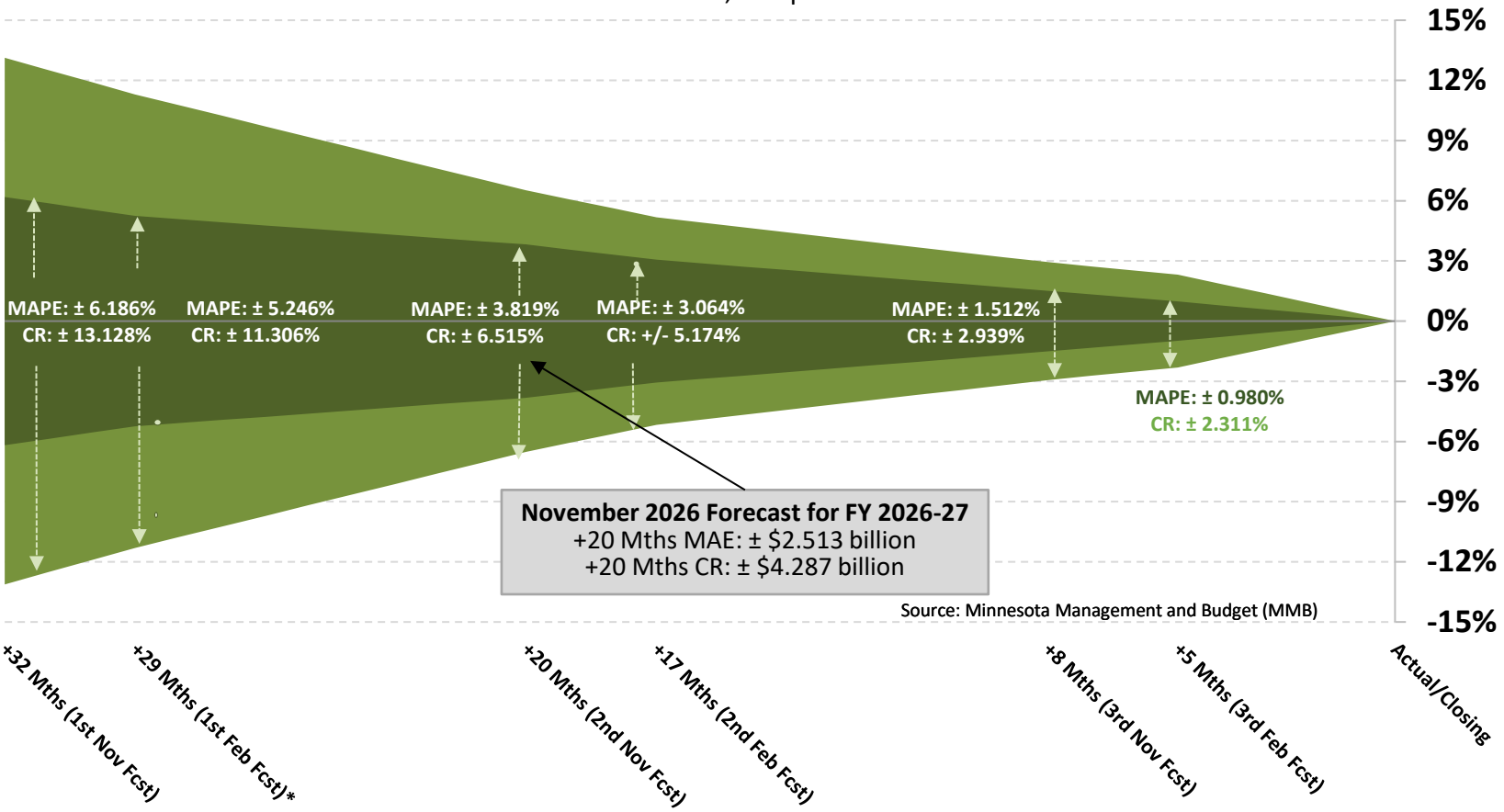
Note that all the error measures reported here are solely for the State's revenue forecasts. They do not include estimates of errors in forecasting state expenditures.

Sources of Revenue Forecast Uncertainty

Actual revenue collections never *precisely* match the forecast for various reasons. First, economic data from time periods preceding a forecast (such as employment or consumer spending data) are not perfectly measured and are frequently revised after they are used to construct a forecast. Second, even if past U.S. economic data *were* perfectly measured, modeling errors and the inability to foresee all future random shocks to the economy would prevent our macroeconomic consultant from perfectly forecasting the U.S. economy. Third, errors in the U.S. forecast and in Minnesota's data history, coupled with inaccuracies in modeling the Minnesota economy introduce errors into our forecast of the State's economy. Fourth, even if the Minnesota economy *were* forecast with perfect accuracy, our forecasts of Minnesota tax revenues would still contain some error from imperfections in our revenue forecasting models, mismatches between the economic and tax definitions of income and spending items, inconsistencies in the timing of receipts from a given year's tax liability, and uncertainty about the revenue impacts of changes in state tax laws.

Average Revenue Forecast Uncertainty over Minnesota's Budget Cycle

Mean Absolute Percentage Error (MAPE) and 90 Percent Confidence Range (CR),
As a Percent of Net Non-Dedicated Revenue, Sample Period: FY1990-91 to FY2024-25



* +29 Mths (1st Feb) represents the MMB forecast on which the original budget for the biennium was based. ■ 90% Confidence Range (CR) (Two-Tail) ■ Mean Absolute Pct Error (MAE)

Notes: Adjusted for the effects of legislation. MMB uses the mean absolute percentage error (MAPE) as a measures of accuracy in its evalulation of forecast uncertainty. MAPE is calculated by averaging forecast deviations from actual without regard to arithmetic sign. Under the assumption that tax policies do not significantly change, a 90% confidence range (CR) is a measure based on our sample budget data, reporting that 90% of the times the lightest range will contain the actual value for total revenues.