LFA LEGISLATIVE FISCAL ANALYST

REVENUE VOLATILITY REPORT

EXECUTIVE APPROPRIATIONS COMMITTEE
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ISSUE BRIEF

SUMMARY

Every three years the Legislative Fiscal Analyst (LFA) and the Governor's Office of Management and Budget (GOMB) analyze the volatility of Utah's major revenue streams and report to the Executive Appropriations Committee how that volatility informs reserve fund policy. Utah law directs the offices to "recommend changes to the deposit amounts or transfer limits" for the General Fund Budget Reserve Account and the Education Fund Budget Reserve Account, and to present "recommendations for deposit mechanisms considered likely to meet the budget reserve account targets" (UCA 63J-1-205). This report satisfies those requirements for the third time since their inception in 2008. It recommends increasing deposit thresholds for the general rainy-day fund from 9% to 10% of prior fiscal year General Fund appropriations, and for the education rainy-day fund from 11% to 12% of prior year Education Fund appropriations. The report further recommends repaying $85 million in debt to the rainy-day funds outstanding since fiscal year 2010.

BUDGET RESERVE ACCOUNTS OVERVIEW

Rainy-day Fund Rationale

Forty-eight states have a budget stabilization fund, commonly known as a rainy-day fund, to set aside money during more prosperous economic times so that a reserve is available when the economy turns.

By establishing rainy-day funds governments are more assured that their budget plans can be accomplished, and they enhance budget stability thus building taxpayer confidence. The existence of reserves reduces the likelihood that unexpected mid-year budget cuts will be needed and reduces the magnitude of cuts if they cannot be avoided. Rainy-day funds also provide a formal plan for dealing with revenue shortfalls. Prudent financial management requires not only paying today's bills in a timely manner, but also providing for an uncertain future.

Basic Arguments in Favor of Rainy-day Funds

1) They promote budget stability by allowing state officials to avoid ad hoc budget cuts or tax increases during budget shortfalls.
2) They buy time for state officials to make better informed decisions about longer-term solutions to budget problems.
3) They serve as repositories of excess revenues, reducing the use of one-time revenues to fund ongoing expenditures.
4) They weigh in the state's favor with bond agencies.

Basic Arguments Against Rainy-day Funds

1) They contain excess revenues that could be returned to taxpayers or used for programs.
2) They serve as a temporary crutch to address budget problems, which delays permanent solutions to budget problems.
3) They serve as a tempting source of revenue to fund programs before shortfalls occur.
4) They may be inaccessible (practically) in cases where bond agencies threaten to lower a state's bond rating for tapping a fund.

Utah's Rainy-day History

Utah established its first budget reserve account on July 1, 1986 to create a reserve for operating deficits or other emergencies, and the Legislature required that 25% of any year-end General Fund surplus be transferred to the account. Since the inception of the account, the State has made a number of significant decisions and changes regarding rainy-day funds.

- Originally, appropriations from the rainy-day fund could only be used to cover operating deficits for state government or retroactive tax refunds. In the 1996 Second Special Session, the Legislature allowed for the fund to be used to cover operating deficits in public education when authorized by the Legislature.
- Utah's rainy-day fund was used in 1993 and 1994 to settle a class action lawsuit filed against the State by federal retirees. In 1994 and 1995 the Legislature appropriated a total of $35 million to replenish the fund. The balance in the fund as of FY 1998 was $88.5 million, which equated to approximately 2.9% of the General Fund / Uniform School Fund appropriations.
- In the 2002 General Session, the Legislature amended statute to require that in addition to 25% of any surplus being transferred to the rainy-day fund, another 25% of any surplus be transferred to the fund until any payments out of the account for the past 10 years have been repaid. Amounts can be reduced if funds are needed for debt service.
- In the 2003 General Session the Legislature created an education rainy-day fund with the same transfer requirements as authorized for the general rainy-day fund. The Legislature also allowed that the rainy-day funds could be used for certain settlement agreements.
- In the 2008 Second Special Session the Legislature provided that interest from the general rainy-day fund be deposited into the General Fund and that interest from the education rainy-day fund be deposited into the Education Fund.
- The Legislature has changed deposit threshold limits multiple times to account for revenue volatility.

Evidence-based Deposit Rules

H.B. 49, 2008 General Session and later amendments to Utah Code Annotated 63J-1-205 require a triennial report regarding:

- Volatility of the tax bases and revenue streams that fund the State budget;
- Balances in the General Fund Budget Reserve Account and the Education Fund Budget Reserve Account;
- Adequacy of the balances in the budget reserve accounts relative to the volatility of the revenue streams; and,
- Deposit mechanisms likely to hit targets established via this process.

In 2011, policymakers determined that the Division of Finance should automatically transfer a portion of revenue surpluses into the rainy-day funds until the balances in the funds are sufficient to address revenue volatility and forecast error. At that time, policymakers determined that the automatic transfer threshold for the General Fund should be 8%, and the automatic transfer threshold for the Education Fund should be 9%.

When the Legislature last reviewed rainy-day fund policy in 2014, policymakers set the automatic transfer thresholds at 9% for the General Fund and 11% for the Education Fund, and these transfer thresholds likely would have been adequate to cover legislative session revenue forecast error (around 18 months). Since then, anticipated General Fund and Education Fund forecast errors have increased. Table 1 contains the current FY 2018 and FY 2019 forecast errors according to the amount of time the projection is into the future.

Table 1 - Downside Forecast Errors

Time Horizon	GF Forecast Error	EF Forecast Error	FY 2018 GF Amount @ Risk (Millions)	FY 2018 EF Amount @ Risk (Millions)	FY 2018 Total Amount @ Risk (Millions)	FY 2019 GF Amount @ Risk (Millions)	FY 2019 EF Amount @ Risk (Millions)	FY 2019 Total Amount @ Risk (Millions)
Consensus Time Horizon (FY 2015 & FY 2016)								
6 Months	1.5%	2.3%	$37	$97	$134			
18 Months	10%	12%				$256	$534	$790

Consistent with past versions of this report, this year's analysis measured experienced revenue forecasting error rates and calculated an amount of revenue that would be at risk over 18 months should revenue forecasters have their worst day. For FY 2019, this analysis suggests General Fund collections could be as much as 10% lower than anticipated over 18 months. Education Fund collections for the same period could potentially lag by as much as 12% based on past forecast error. To completely hedge against this risk, the State should put aside an amount of money equal to 10% of annual General Fund appropriations and 12% of annual Education Fund appropriations.

REVENUE-AT-RISK

Revenue-at-risk is a measurement tool that identifies how much is needed in reserves to cover potential losses due to unexpected dips in revenue. Revenue-at-risk is an adaptation of the value-at-risk model that the private sector uses to protect banks, companies, and investors against unexpected losses due to natural risk.

Revenue-at-risk is calculated by looking at the expected revenue forecast and the forecast error over a set timeframe at a given confidence level. It answers the question: "How much can I lose with x% probability over a pre-set horizon?" (J.P. Morgan/Reuters (1996). RiskMetrics – Technical Document,). For the purposes of this report, the LFA looks at expected risk over six-month and eighteen-month timeframes at a confidence level of 80%. In other words, in eight out of ten scenarios, the given revenue-at-risk ($256 for General Fund, 18 months) is the worst amount of loss that the State can be expected to sustain. The remaining 20% of the time, the State could sustain greater losses than the current predicted levels; however, these alternate situations are unlikely. In the private sector, confidence levels are traditionally higher (95%-99%) because time horizons are traditionally shorter (a few hours, a week, or a month) and therefore carry less risk. Because the LFA forecasts revenue over a long timeframe, a lower confidence level is necessary to balance the risk that comes from increased uncertainty.

Revenue-at-risk projections are also directly impacted by revenue forecasting error. A larger forecasting error reflects greater uncertainty in revenue projections, and this uncertainty translates into a larger amount of revenue at risk. This is evident in the disparities between six-month and eighteen-month projections. A six-month projection, because it covers a shorter timeframe, has a lower forecasting error and requires a lower reserve to cover risk. An eighteen-month timeframe naturally has a higher forecasting error and subsequently requires a higher reserve to cover risk.

These figures have a direct impact on the recommended reserve fund transfer thresholds. As the amount of revenue-at-risk increases, the LFA will recommend increasing rainy-day fund transfer thresholds for both the General Fund Budget Reserve Account and the Education Fund Budget Reserve Account. Transfer thresholds help reserve deposits to match amounts of revenue-at-risk and ensure that the State will be covered against potential losses due to revenue volatility.

Currently, the General Fund revenue-at-risk for FY 2018 is $37 million (a six-month horizon) and through FY 2019 is $256 million (an eighteen-month horizon). The Education Fund revenue-at-risk is $97 million for FY 2018 and $534 million through FY 2019. These numbers represent the worst amount of loss these funds could reasonably expect to face over the course of a six-month or eighteen-month timeframe, given current market conditions and the potential for error in revenue forecasting.

STATUS OF UTAH'S GENERAL AND EDUCATION BUDGET RESERVE ACCOUNTS

At the end of FY 2017, the balance in the General Fund Budget Reserve Account (GFBRA) was $145.7 million, an increase of $2.1 million (1.4%) over FY 2016. The FY 2017 year-end balance in the Education Fund Budget Reserve Account (EFBRA) was $361.8 million, an increase of $12.3 million (3.5%) over FY 2016. Automatic deposits to the accounts are capped such that the account balances cannot exceed 9% of General Fund appropriations for the GFBRA and 11% of the Education Fund appropriations for the EFBRA in the surplus year. The Legislature may appropriate funds to the accounts regardless of their balances.

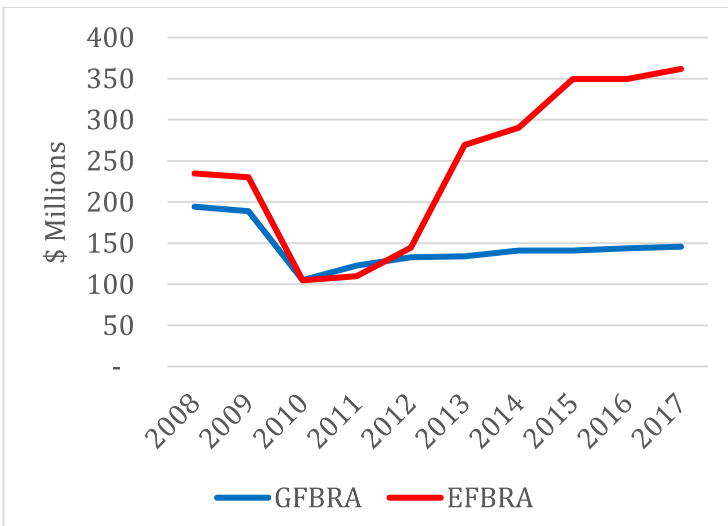
The top panel of Table 2 shows the automatic transfer caps as calculated from current FY 2018 appropriations, the FY 2017 year-end account balances, and the difference. The bottom panel shows the same information but at the analyst's recommended deposit thresholds of 10% and 12% for the General Fund and Education Fund, respectively. Any General Fund or Education Fund supplemental appropriations in FY 2018 would change the transfer caps.

Table 2 - Recent Rainy-Day Fund Balances and Deposit Thresholds

	General Fund	Education Fund	Total
Panel 1: Current Automatic Threshold	*9%*	*11%*	
FY 2018 Transfer Cap	$214,340,000	$451,573,000	$665,913,000
FY 2017 Reserve Balance	$145,669,000	$290,454,000	$436,123,000
Difference	$68,671,000	$161,119,000	$229,790,000
Panel 2: Recommended Automatic Threshold	*10%*	*12%*	
FY 2018 Transfer Cap	$238,156,000	$492,626,000	$730,782,000
FY 2017 Reserve Balance	$145,669,000	$290,454,000	$436,123,000
Difference	$92,487,000	$202,172,000	$294,659,000

The Legislature tapped the general and education rainy-day funds in FY 2009, FY 2010 and FY 2011 in consequence of the Great Recession. Between FY 2009 and FY 2011, it used $97 million from the general rainy-day fund. For FY 2009 and FY 2010 combined, it spent $133 million from the education rainy-day fund. Legislators again accessed the general rainy-day fund in FY 2014, using $3 million to pay a legal claim. Figure 1 shows the 10-year history of balances in the GFBRA and EFBRA.

Figure 1 - Rainy-day Fund Balances 10-year History



Utah statute contemplates repayment within ten-years of any amounts it takes from budget reserve accounts. As discussed earlier, these repayments typically come from a second quarter of revenue surpluses. Since 2011, Utah has experienced several Education Fund surpluses, but General Fund revenue has been very close to forecast, and in one case even below what we anticipated. Another reserve account – the Medicaid Growth Reduction and Budget Stabilization Account – stands in line before the general rainy-day fund for a share of surplus, further reducing potential GFBRA repayments.

The results can be seen in Figure 1. While balances in the education rainy-day fund have rebounded, general rainy-day fund balances have been nearly stagnant since 2011. Of the $133 million taken from the education rain-day fund after the Great Recession, all but $12 million has been repaid. However, more than $79 million of the $97 million taken from the general rainy-day fund between FY 2009 and FY 2011 remains unpaid. While all FY 2009 rainy-day loans have been repaid, FY 2019 will be year nine of the ten-year repayment period since FY 2010. Of the FY 2010 withdrawals, $12 million remains outstanding from the education rainy-day fund and $73 million is owed to the general rainy-day fund.

Given the aging debt to rainy-day funds, slim margins on General Fund revenue surpluses, and our statutory requirement to recommend deposit mechanisms likely to meet established targets, the Legislative Fiscal Analyst recommends the Legislature appropriate $73 million from current year revenue re-estimates to the General Fund Budget Reserve Account, and $12 million from current year revenue re-estimates to the Education Fund Budget Reserve Account to repay withdrawals from FY 2010.

CONCLUSION

Forecasting errors and measures of revenue volatility have increased since the analyst presented the 2014 version of the "Joint Revenue Volatility Report". Legislative staff economists calculate revenue at risk for FY 2019 at 10% of total General Fund revenue and 12% of total Education Fund revenue. This analysis suggests raising the automatic thresholds for depositing revenue surpluses into the budget reserve accounts from the current 9% to 10% for the GFBRA and from the current 11% to 12% for the EFBRA to cover the full 18-month revenue forecast error.

Recommendation: The Legislative Fiscal Analyst recommends adjusting the General Fund and Education Fund Budget reserve account automatic transfer caps to 10% and 12%, respectively, in order to cover the amount at risk in the current 18-month revenue forecast.

Based on current FY 2018 General Fund and Education Fund appropriations for operating and capital budgets, the target balances for the GFBRA and EFBRA are $238.2 million and $492.6 million, respectively. The FY 2017 year-end balances were $145.7 million in the GFBRA—$92.5 million short of the target, and $361.8 million in the EFBRA—$130.8 million short of the target. Based on the current consensus revenue figures, the Analyst estimates an extra $101 million in one-time revenue will be available to lawmakers in the 2018 General Session, and recommends appropriators use $85 million of that to repay past withdrawals from the GFBRA ($73 million) and EFBRA ($12 million). If such repayments were to occur, the amounts remaining to repay past rainy-day fund withdrawals would be $9 million for the GFBRA and $0 for the EFBRA.

Recommendation: The Legislative Fiscal Analyst recommends the Legislature deposit $11,991,260 to the Education Fund Budget Reserve Account and $73,313,177 to the General Fund Budget Reserve Account to repay withdrawals made in the 2010 fiscal year.