RUTGERS

Forecasting

From Static Budgeting to Dynamic Forecasting and Why It Matters

RUTGERS

CONTENTS

RUTGERS

Introduction

Historically, Rutgers University has not conducted consistent strategic financial forecasting at a detailed level. In the past, central accounting completed both the Board of Governors (BOG) budget and forecasting without direct input from units. Only broad, current year trends in personnel costs, student aid expense, and student and grant revenue were identified on a universitywide basis and were used to predict year-end results. Other large variances also were factors in reporting to the BOG. Now that Rutgers has implemented a bottom-up, all funds approach to budgeting, the university can take a similar distributed approach to forecasting.

While budgeting is a key component in Rutgers' overall financial planning process, it alone is not enough. Continuous planning during the course of the fiscal year is necessary to stay informed of changing conditions across the university, and to better anticipate and adapt to potential opportunities or issues that can arise. Continuous financial planning also allows for more timely and insightful decision-making, better positioning the university to plan ahead. This level of planning cannot be achieved with once-a-year budgeting.

Forecasting is necessary to support financial planning, keep pace with the ever-changing university landscape and inform timely and strategic decision-making. Financial pressures on the university, such as – uncertain state, grant and endowment funding, coupled with increasing costs, demand transparent, comprehensive financial planning more than ever. With the release of the Enterprise Planning and Budgeting Cloud Service (EPBCS), more consistent, effective and efficient universitywide forecasting is within reach.

RUTGERS

What Is Forecasting?

Forecasting is a financial planning technique that uses existing data, predictive estimates, and historical data to make informed decisions and determine the direction of future trends. Forecasting includes year-to-date actual data in addition to expected data. Throughout the course of the year, actual data is layered into the forecast as it occurs, allowing future months to be adjusted based on changing revenue and expense estimates. Forecasting is a financial reflection of what may actually occur; superseding what was originally budgeted. Schools and units can use forecasts to adapt future fiscal plans to changing conditions.
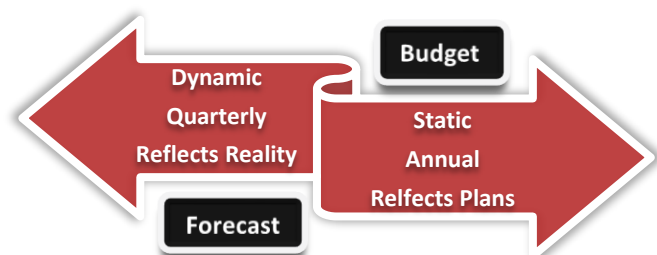
fore·cast·ing

noun

a planning tool that helps management in its attempt to cope with the uncertainty of the future, relying mainly on data from the past and present and analysis of trends

www.businessdictionary.com

Forecasting v. Budgeting

While forecasting and budgeting are required to achieve comprehensive strategic financial planning, each activity serves a different purpose. Budgeting entails outlining a financial plan for revenues and expenses for the upcoming fiscal year. Then, actual results are compared to the budget to calculate and analyze variances to expected results. Forecasting, on the other hand, involves utilizing actual results and trends to inform a prediction of year-end results.

Another key difference is timing. Budgeting always is conducted prior to the start of the fiscal year, often preceding it by several months. Forecasting is conducted "in the moment", resulting in more accurate information.

Dynamic
Quarterly
Reflects Reality

Budget

Static
Annual
Relfects Plans

Forecast

RUTGERS

> *Forecasting helps identify unexpected issues or new trends during the fiscal year, allowing the university to take corrective actions.*

Why Forecast?

Forecasting is a key component in financial planning because it serves as a basis for estimating short-term future needs. During times of change, schools and units must quickly make decisions and adapt using the latest business intelligence, informed by actual results. Forecasting helps identify unexpected issues or new trends during the fiscal year, allowing the university to take corrective actions. It also allows planners to perform ongoing monitoring of business activities to foster continuous planning. Leadership, in turn, uses forecasting as a tool to make informed financial and operational decisions.

Best Practices in Forecasting

While many forecasting best practices are available, it is neither practical nor realistic to adopt every one. Adopting best practices will evolve as the process is repeated and the practices are refined to best suit the needs of the university. Furthermore, it is important to remember that regardless of the best practices implemented, none will replace analyses performed at the school or unit level.

Four best practices that have been implemented and should be considered when forecasting are outlined next.

Be Realistic

To be effective, forecasts need to reflect reality. Planners should strive to create the most accurate forecasts. A common mistake is confusing forecasts with goals. Forecasting is an opportunity to share data that will be incorporated in the university's reporting to key stakeholders and provide the foundation for more informed decisions. Since leadership makes decisions based on forecasts, inaccurate reporting can be detrimental to the process. For finance professionals, a measure of the quality of the work is the accuracy of the budgets and forecasts. Over time, this will increase credibility and confidence in the forecasting process.

Collaboration

A good forecasting process is collaborative and includes information from all levels of the university. Establishing a cross-functional forecasting approach involves deans, program directors, research managers, and others. Collaboration across these functions will build trust and lead to more relevant forecasts. Additionally, Deans, Chancellors and Senior Vice Presidents will provide additional guidance to inform forecasts.

Level of Detail

Planners should include as much detail as needed to produce a realistic, accurate, and meaningful forecast. For example, it may not be necessary to forecast at each degree program to forecast tuition revenue accurately. On the contrary, a more detailed forecast for salary and wages may be necessary. Deans, Chancellors and Senior Vice Presidents will determine the appropriate level of detail for forecasts.

Technology

At Rutgers, EPBCS facilitates automation by providing the mechanism to distribute and collect data from planners. EPBCS also has the capability to apply business rules (automated calculations) to the forecast, enabling one-click changes to multiple chart segments. For example, the university has created forecast seeding tools to assist in building a forecast. The first time a user logs in to the system, the future months will be pre-seeded, or pre-populated, with the budget data as a starting point. Planners also can choose additional seeding methodologies within EPBCS (described later in this paper).

RUTGERS

Major Considerations

Regardless of the method used to forecast, analysis of actual operational conditions, such as student enrollment, faculty productivity, research activity, etc., is always required to ensure that all variables are captured. To create a forecasting starting point, planners can use the seeding methods that are discussed in the next section of this paper. These seeding methods do not replace a school or unit level analysis. An informed and thoughtful

…analysis of actual operational conditions, such as student enrollment, faculty productivity, research activity, etc. is always required to ensure all variables are captured…

analysis of key drivers is vital for accurate forecasting. Each unit will have different key drivers in its operations, some more than others. Take the time to review operations and recognize major revenue and expense drivers at the school and unit level to have the most impact on forecast development.

Methods of Seeding a Forecast

Planners may select from four seeding methods within EPBCS to create a starting point for realistic and accurate forecasts. Each seeding method is relevant to different circumstances, depending on several factors, including the seasonality of a school or unit's business and actual timing of expected activity. The use of these seeding methods must not replace or reduce analytical reviews while preparing the forecast; rather each method should be used as a tool in the analytical process. For the first forecast of each fiscal year, out months are pre-seeded with current year budget using Method #1.

Method #1 – Budget/Prior Forecast

The **Budget/Prior Forecast** method populates budgeted or previously forecasted amounts for out months.

Final Budget

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	80	80	80	80	80	100	100	100	100	**1140**

Year-to-Date Actuals

Jul	Aug	Sep	Oct	Nov	Dec	Total
100	120	120	100	100	100	**640**

Q2 Forecast

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	100	100	100	80	80	100	100	100	100	**1200**

Explanation

In this example, the final annual budget reflects a total of 1,140. The first six months of actuals total 640. To utilize this seeding method, the remaining six months of the year are populated with the budget. As a result, the Q2 forecast of 1,200 includes actual data for the first half of the year, plus the budget for the second half of the fiscal year.

RUTGERS

BUDGET/PRIOR FORECAST

The Budget/Prior Forecast method can be useful for forecasting revenues and expenses that are expected to actualize as originally budgeted.

Application

The Budget/Prior Forecast method can be useful for forecasting revenues and expenses that are expected to actualize as originally budgeted. For example, if the year-to-date actuals are consistent with what was budgeted and the out months are likely to remain consistent with the budget, then the Budget/Prior Forecast method would be useful.

If year-to-date actuals significantly vary from the year-to-date budget and the trend is likely to continue for the remainder of the fiscal year, then the school or unit should use another seeding method.

EPBCS

Planners can initiate this seeding method in EPBCS by selecting the "Budget/Prior Forecast" option to fill in prior budget or forecast amounts for the out months. When this is completed, planners can manually adjust the amounts to reflect predictions of how those months will actualize more accurately.

RUTGERS

Method #2 – Average Actual

The **Average Actual** method populates the monthly average of the current year actuals for out months.

Final Budget

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	80	80	80	80	80	100	100	100	100	**1140**

Year-to-Date Actuals

Jul	Aug	Sep	Oct	Nov	Dec	Total
100	120	120	100	100	100	**640**

Q2 Forecast

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	100	100	100	107	107	107	107	107	107	**1282**

Explanation

In this example, the final budget reflects a total of 1,140. The first six months of actuals total 640. To utilize this seeding method, each of the remaining six months of the year are populated with the monthly average of year-to-date actuals. The year-to-date actuals total of 640 is divided by six months, resulting in a monthly average of 107. Then, the monthly average is filled across the remaining half of the year. As a result, the Q2 forecast of 1,282 will include actual data for the first half of the year plus the actual monthly average for the second half of the fiscal year.

AVERAGE ACTUAL

The Average Actual method can be useful for forecasting revenues and expenses that remain relatively steady throughout the fiscal year.

Application

The Average Actual method can be useful for forecasting revenues and expenses that remain relatively steady throughout the fiscal year. For example, this method could be used to begin forecasting 12-month salaried employee costs. The expenses incurred in the first half of the year would be a good indicator of what the expenses would be in the second half of the year.

This method would not be useful for forecasting seasonal revenues and expenses, such as Student Tuition & Fees revenue. Seasonality would result in ebbs and flows of activity in Student Tuition & Fees revenue, or other seasonal activity, which would not be captured using the average actual forecasting method.

EPBCS

Planners can initiate this seeding method in EPBCS by selecting the "Fill with Average Actual" option. The application will total year-to-date actuals and calculate the monthly year-to-date average. Then, the monthly average amount would be populated in the out months of the fiscal year forecast being developed. When this is completed, planners can manually adjust the amounts to reflect predictions of how those out months will actualize more accurately.

Method #3 – Remaining Budget

The **Remaining Budget** method populates a straight-line spread of the remaining budget for out months.

Final Budget

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	80	80	80	80	80	100	100	100	100	**1140**

Year-to-Date Actuals

Jul	Aug	Sep	Oct	Nov	Dec	Total
100	120	120	100	100	100	**640**

Q2 Forecast

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	100	100	100	83	83	83	83	83	83	**1140**

Explanation

In this example, the final budget reflects a total of 1,140. The first six months of actuals total 640. To utilize this seeding method, the 640 in actuals is subtracted from the budget total of 1,140. The remaining budget of 500 is averaged and filled across the remaining half of the year. As a result, the Q2 forecast of 1,140 includes actual data for the first half of the fiscal year plus a reallocation of the remaining budget for the second half of the fiscal year.

RUTGERS

REMAINING BUDGET

The Remaining Budget method can be applied to revenues and expenses where the timing of actual activity varies from budgeted timing of activity, but is not expected to impact the overall year-end result.

Application

The Remaining Budget method can be applied to revenues and expenses where the timing of actual activity varies from budgeted timing of activity, but is not expected to impact the overall year-end result. For example, this method could be useful when forecasting travel expenses. Based on current year-to-date actual results, planners may expect the total year-end result to be in line with the budget. However, due to some travel plans being postponed to later dates in the fiscal year, the actual timing of expenses may not be consistent with the budget. Seeding the out months with the remaining budget could be a good starting point for developing the forecast because it would retain the budgeted total, while updating the spread of actuals.

EPBCS

Planners can initiate this seeding method in EPBCS by selecting the "Fill with Remaining Budget" option, which takes the total budgeted amount and subtracts the year-to-date actuals. Then, the remaining budget amount would be spread evenly across the out months of the forecast. When this is completed, planners can adjust the amounts to reflect predictions of how those out months will actualize.

Method #4 – Prior Year Actual

The **Prior Year Actual** method populates prior year actuals for out months.

Prior Year Actuals

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	80	80	80	150	150	120	120	100	120	**1340**

Year-to-Date Actuals

Jul	Aug	Sep	Oct	Nov	Dec	Total
100	120	120	100	100	100	**640**

Q2 Forecast

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
100	120	120	100	100	100	150	150	120	120	100	120	**1400**

Explanation

In this example, prior year actuals reflect a total of 1,340. The first six months of current year actuals total 640. To utilize this seeding method, the prior year actuals for the last six months of the year are filled across the remaining half of the year that is being forecasted. As a result, the Q2 forecast of 1,400 includes actual data for the first half of the year plus the last six months of prior year actuals for the second half of the fiscal year.

PRIOR YEAR ACTUAL

The Prior Year Actual method can be useful for forecasting seasonal revenues and expenses, such as Student Tuition & Fees.

Application

The Prior Year Actual method can be useful for forecasting seasonal revenues and expenses, such as Student Tuition & Fees. While the timing of current year-to-date actuals may not be a good predictor of the timing of activity in the remainder of the fiscal year, the timing of prior year actuals could be used to inform the forecast. Prior year data would capture the spread, or timing, of when actual activity occurred.

EPBCS

Planners can utilize this seeding method in EPBCS by selecting the "Fill with Prior Year Actual" option, which will fill prior year actuals for the out months. When this is completed, planners can manually adjust the amounts to more accurately reflect predictions of how those out months will actualize.

RUTGERS

Roll-Up Accounts for Forecasting

What?

Roll-up accounts are natural account values to aid planners in completing the quarterly forecasting process. There are 30 roll-up account values, strategically placed throughout the BOG Account Hierarchy, to enable forecasting at a BOG Account Parent or Grandparent level, rather than a more detailed level. Certain Grandparent-level accounts will not have associated roll-up accounts: Federal & State Student Aid, Federal Appropriation, NJ State Appropriations, State Paid Fringe, Grants and Contracts, Facilities and Administrative Recoveries, Salary & Wages, Fringe Benefits, Debt Service and Transfers. For these accounts, planners must forecast at the detailed natural account level. These roll-up accounts are easily identifiable because they begin with "R". Roll-up accounts are for planning purposes only and cannot be used for actual transactions.

Why?

These roll-up accounts were created to reduce the time required for planners to develop highly-detailed forecasts without impacting the quality of the finished product. Roll-up accounts will benefit planners by allowing forecasts to be adjusted at a higher level. This will result in planners being able to develop sound forecasts, while having greater flexibility to fine-tune forecasts at a higher level of detail than before.

How?

As planners are developing forecasts, a roll-up account can be used to adjust the forecast for any of the associated (detail) natural accounts. For example, the initial analysis is complete and forecast seeding methods have been utilized to begin developing a forecast. Then, further analysis is conducted and there is a need to increase or decrease the Supplies expense. Rather than adjusting numerous supplies natural accounts (office supplies, computer supplies, laboratory supplies, etc.), a planner can choose to enter the adjustment in aggregate in the supplies roll-up account, R5200-Roll-up Supplies. The use of roll-up accounts is optional; planners have the option to forecast at the detail level.

When Forecasting, Consider…

Timing

When preparing a forecast, it is important to account for the timing of actual activity versus expected activity. Considering the timing of adjusting entries also is critical because it has a direct impact on how future months will actualize. For example, if a material amount of revenue was recorded earlier than budgeted, then the remaining months in the forecast must be adjusted accordingly. Conversely, if revenue will be recorded later than initially budgeted, then this adjustment also must be reflected in the remaining months in the fiscal year. The same concept applies to expenses.

Extraordinary Activity

When basing a prediction on actuals, either in the current year or a prior year, it is important to avoid including one-time, extraordinary activity in a forecast. This activity is not predictive. Therefore, it would not add value to a forecast, but would distort it. Prior, one-time financial activity may not be indicative of the outcome of remaining months within the fiscal year for which the forecast is being prepared.

Information Gathering

Preparing a reliable forecast requires both quantitative and qualitative insight. Reviewing historical data trends provides the basis for a forecast, while layering in judgement based on knowledge of an organization and its upcoming activities can improve the accuracy of a prediction. Input from various members of a school or unit can provide invaluable insight into the forecast.

RUTGERS

Conclusion

Budgeting annually is a key component of the Rutgers University financial planning process. It provides the basis for expectations of the upcoming fiscal year. However, the timing of the budget can be challenging. Planning once a year is not enough to keep pace with changing conditions that can occur after the budget is prepared. Forecasting is the best way to prepare for, memorialize, and communicate changes to planned budgets throughout the fiscal year.

Without forecasting, the university runs the risk of making decisions that do not align current fiscal realities with strategic goals. With forecasting, the university has insight into current year trends, can identify potential issues and make needed adjustments.

Forecasting does not reflect a planned goal, but what is expected to occur based on current year actuals and an understanding of real-time fiscal conditions. Forecasting, when used in combination with budgeting, provides a more holistic approach to financial planning and leads to better, more timely decision-making. It fosters a forward-thinking process that will have a positive, long-term effect on how the university manages the planning, budgeting, and forecasting process.