GUIDE

Cash Forecasting

Accuracy Measurement

GTreasury

Introduction

Measuring the accuracy of a cash forecast sounds like a simple concept, but in reality, it can prove to be quite difficult. If you are responsible for forecasting within your organisation, or rely on forecasts received from other people, the ongoing measurement of accuracy will be an important part of your forecasting process.

Without an understanding of accuracy, you won't have the confidence to use the forecasts you generate for reporting or decision-making purposes, nor will you be able to drive improvements in accuracy.

In large organisations, where cash forecasting involves the collection of vast amounts of data, it can be difficult to know what to measure and how frequently to measure it. In this guide, we outline some key considerations and two practical examples for measuring accuracy on an ongoing basis.

Preliminary Considerations

There are a number of preliminary factors to consider before you commit time to measuring and tracking the accuracy of cash forecasts.

Actual Cash Data

It sounds obvious, but if you don't have access to actual cash data you, won't be able to measure accuracy. Therefore, actual cash data, collected from either bank statements or ERP/accounting systems, is a key data input to any accuracy measurement calculation.

The detail of the actual cash data you have available will determine the level at which you can measure accuracy. For example, if you only have access to closing cash balances, you will only be able to measure the accuracy of the closing cash positions in your forecast.

However, if you have access to transactional cash flow data you will be able to measure the accuracy of the various components of a forecast, such as operating and investing cash flows.

What Metric Are You Measuring?

At large companies, the cash forecasting process typically involves gathering huge amounts of information. At a base level, forecasting requires a breakdown of detail covering opening and closing cash positions and cash flows classified into different categories (operating, investing etc.), spread across multiple future time periods.

The volume of data continues to grow when you factor in multiple business units, currencies, and time periods. Focus is required to combat the challenges posed by managing lots of data and complexity. Focus on the most important aspect of your forecast and measure that. You can expand the scope of measurement when you have a full understanding of your most important metric.

Time Horizon

The time horizon of the forecast and the level of detail within the time horizon will have a big impact on the measurement of forecast accuracy. It seems like a simple decision, and many people know immediately how far into the future they want to forecast, but how do you measure the accuracy of a multi-period forecast?

There's no easy answer, but you can start by focusing on the time period or date that matters most to you. This could be month end, year-end or a monthly debt rollover date but identify these dates and build your forecast reporting process around them.

Example Forecast

1 Month, Daily

Day-to-day cash and debt management, refreshed a number of times per week

13 Week

Medium-term planning and quarter-end visibility, refreshed once per week

12 Month

Mid- to long-term strategic planning and year-end visibility, refreshed once per month

Methods of Measuring Accuracy

There are many methods that can be used to measure accuracy but we will look at two in this guide; Single Period Actual versus Forecast Analysis and Count Down Analysis.

Single Period Actual Versus Forecast

All accuracy measurement is based on an actual versus forecast calculation. This calculation involves comparing a forecast cash position or flow to the actual cash position or flow, when it is known. How frequently you can carry out actual versus forecast analysis is determined by both the frequency at which you forecast and the availability of actual data. In the panel below we explain the concept using a simple example.

Example

In this example, assume you operate a four-week forecasting process that rolls every week. As part of the process you also gather actual cash balances for the previous week.

The first version of the forecast was received from one of your largest business units last week outlining closing positions for the next four weeks as follows:

€ '000's	Week 1	Week 2	Week 3	Week 4
Closing Balance	6,500	3,200	7,340	2,300

This week you receive an updated forecast containing the actual cash balance for Week 1 and a new forecast for week 5.

€ '000's	Week 1 (A)	Week 2	Week 3	Week 4	Week 5
Closing Balance	4,000	5,300	9,500	1,500	3,900

The calculation below is used to calculate the accuracy of the last week's forecast.

$$\text{Forecast Accuracy \%} = \left(1 - \frac{\text{Actual Closing} - \text{Forecasted Closing}}{\text{Actual Closing}}\right) \times 100$$

$$\text{Forecast Accuracy \%} = \left(1 - \frac{4{,}000 - 6{,}500}{4{,}000}\right) \times 100 = 37.5\%$$

Using this calculation, we can see that last week's forecast was only 37.5% accurate (62.5% inaccurate) when compared to this week's actual closing cash balance. This is a simple but powerful way to measure accuracy and is particularly useful for single period analysis such as week on week or month on month.

Count Down Accuracy Analysis

Count down accuracy analysis builds on actual versus forecast analysis and allows you to track the accuracy of forecasts as you move towards, or count down to, a "target" date.

In short, count down analysis requires carrying out a series of actual versus forecast calculations on forecasts received in the run up to the target date. The analysis can be carried out as soon as the actual figure or flow on the date is known. In the example below we want to track the accuracy of the forecast we receive from one of our largest business units in the four weeks leading into year end on 31st December (the target date). The table below shows the December 31st closing cash position forecasts we received from this business unit in the lead up to the target date.

€ '000's	Date of Forecast	Forecast for 31st December	Days to Target Date
Forecast 1	3rd December	6,650	28
Forecast 2	10th December	8,260	21
Forecast 3	17th December	9,500	14
Forecast 4	24th December	12,000	7

The closing balance on 31st December turned out to be €13,500,000.

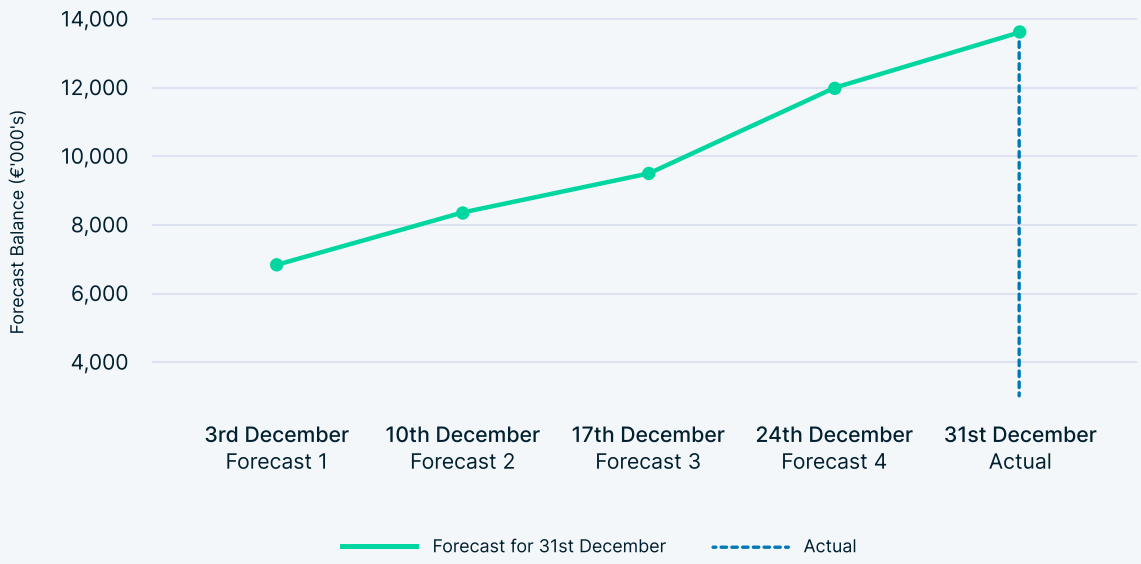
This figure is then use to test the accuracy of each of the forecasts received in December using the calculation outlined in the previous section.

€ '000's	Date of Forecast	Forecast for 31st December	Difference Versus Actual	Forecast Accuracy
Forecast 1	3rd December	6,650	6,850	49%
Forecast 2	10th December	8,260	5,240	61%
Forecast 3	17th December	9,500	4,000	70%
Forecast 4	24th December	12,000	1,500	89%

Count Down Accuracy Analysis (continued)

Graphing the results provides a powerful method to visualise and understand how the accuracy of the forecasts received trends into your target date, in this case December 31st.

Count Down Analysis to December 31st



In this example, we can see that the business providing the forecast was conservative with regard to their expected year end cash position. The business unit forecast with only 49% accuracy four weeks before year end and 89% one week before year end.

Key Takeaway:

Take a Targeted Approach

Targeting both a key metric and a point in time is an essential first step in measuring the accuracy of cash forecasts.

In both of the examples described in this guide, we have taken a targeted approach. We measure one key metric (closing cash positions) at clearly defined points in time. In the actual versus forecast example, the point in time was last week and in the countdown analysis the point in time was the 31st of December.

In both examples, the accuracy measurements used are easy to understand and straightforward to explain. This is critically important. Unless you have the ability to directly impact the accuracy of forecasts, you will need to explain the results to someone. If the methodology is overly complex, it will be very difficult to drive the improvements in accuracy required.

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