Cash forecasting (*part II*)

In the second part of his cash forecasting analysis, Rod Staples of PricewaterhouseCoopers looks at establishing a cash forecasting model.

Profit may be a matter of opinion, but cash is a reality. This statement may be contentious, but it underlies the growing demand from analysts and investors for cash-based information. To support this, organisations must ensure they have robust cash forecasting processes, enabling them to identify and explain variances from plan. As a follow-up to last month's article on implementing a cash forecasting framework (*see June issue, page 27*), this article examines the main issues involved in establishing a forecasting model.

Why create a forecast model?

Ideally, senior management need up-to-date information, prepared on a consistent basis across the organisation, to give them confidence in monitoring cash flows and decision-making. This information includes cash forecasts. Some companies have taken it a step further to include 'rolling budgets', where emphasis is on constantly updated out-turns, rather than on an annual process that may be rapidly overtaken by events.

To meet these needs some form of model will be needed, both to facilitate preparation and to provide a framework for variance analysis. The existence of a model should prevent every forecast exercise from 're-inventing the wheel'. In addition, well-developed models enable 'what-if' modelling and sensitivity analysis.

IT considerations

However, technological support in this area is uneven. Short-term cash forecasting has been greatly facilitated by integrated Enterprise Resource Planning (ERP) systems, which can provide much of the data required, including current ledger balances by due date, maturing treasury transactions and committed purchase and sales orders. But integrated user-friendly software packages for longer-term requirements are not yet widely available, and many corporates still use spreadsheets on a stand-alone basis from the main financial systems.

Spreadsheets have their advantages. For example, they are flexible and can be tailored to meet the specific modelling and reporting requirements of the business. However, issues arise from a lack of integration with other core financial systems and this must be taken into account when designing any forecast model. For example:

- re-keying or importing data may result in errors;
- spreadsheets cannot directly access financial data in other systems that might assist the forecasting process, (eg, deriving assumptions from historical data);
- producing and reviewing forecasts is generally labour-intensive rather than automated; and
- creation and maintenance of spreadsheets is often specialist group work, with resulting control issues of functional integrity, change management and reliance on key individuals.

A cash forecasting model

A simple forecast can be based on prior year balances and adjusted for known or anticipated changes. However, this is unlikely to provide enough baseline detail for variance analysis and may be hard to use for scenario modelling. A decision on the degree of model complexity and detail is required, but the level of effort to create and maintain the model should support the agreed framework of reporting and forecast objectives.

However, any longer-term model for regular use should at least be fully integrated, using a forecast P&L to produce cash flow and balance sheets, which enables outputs to be reconciled.

Practical issues

Cash modelling is not a 'black art' – it is basically a phased version of the P&L – but there are practical issues to be recognised, both during and after the initial design process. For example:

- a decision on what level to set the model (eg, a single central model, or models in each business unit, with group consolidation). This involves issues of control and 'ownership';
- the accuracy and sensitivity of forecast results will depend on the complexity and flexibility of the assumptions structure;
- the difficulty of blending forecast and actual information (eg, using average timing assumptions may produce results that conflict with known information, particularly over the short term);
- not all cash cycles may be directly related to the P&L cycle (eg, purchases), requiring additional modelling inputs;
- forecasts are required for non-P&L cash flow items, (eg, VAT and capital expenditure), while non-cash items in the P&L need to be excluded (eg, depreciation);
- if there are long lead times, cash flows may be impacted by P&L beyond the forecasting horizon, where assumption data is normally unavailable. A process for agreeing this data is required;
- if forecast balance sheets are a primary objective, the model may need to handle accounting adjustments

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The benefits of using a fully integrated longer-term model
- the integrated method allows forecasts to be prepared on a 'receipts and payments' basis, which may be useful for comparison against short-term liquidity forecasts, but can also be formatted into funds statements, which may more readily tie in to other reporting;
- the impact of changes in forecast P&L, timing assumptions, or 'what-if' scenarios, can be modelled independently, allowing variances to be analysed into their component elements;
- the model can be used as a template for individual projects or acquisition forecasts, and for calculating financing costs on cash/debt balances; and
- more complex models can be used to forecast other items (eg, FX exposures and covenant ratios), using the same base data and assumptions.

and duplicate double-entry processes to enable closer comparison against actuals (eg, in relation to accruals/prepayments); and
- some cycles can be extremely complex (eg, tax), requiring separate models to calculate relevant flows.

Initial design process The design process should be conducted in conjunction with a review of the existing reporting framework, so that overall objectives, reporting horizons and format, and availability of supporting information, are taken into account.

Within this process, the following steps are necessary:

- understanding the significant business cash flow drivers and sensitivities and how they flow into the reporting formats. This should involve interviews with relevant functional managers, as well as a review of historical data, to form the basis of an assumptions structure;
- 'mapping' flows between cash, P&L and balance sheet, to identify significant non-cash P&L and non-P&L cash items, and checking all flows are dealt with appropriately. This also provides a guide to the input detail needed to support the model;
- determining an assumptions structure to frame the major cash cycles.

Assumptions are by definition averages and so this involves judgement in the degree of detail versus materiality, but in general hard-coding of assumptions should be avoided;
- confirming sources of assumptions and forecast data; and
- reviewing potential for automation, and resulting systems interfaces.

Other useful features include:

- built-in checks on integrity of output (eg, intercompany transactions cancel out; profits/net assets reconcile); and
- where possible, allow top-level adjustments to give flexibility for one-off or infrequent movements (eg, tax, loan repayments), as well as a means to correct anomalies in the trading cycle (eg, year-end peaks).

Models should be thoroughly tested:

- functional integrity should be tested using sample data and assumptions. It may be worth considering a formal audit review, particularly if output is to be relied on for critical decision-making; and
- overall accuracy and validity of the structure should be tested using historical data and assumptions versus the actual outcomes.

However, it is important to realise that no model will be perfect and that cash forecast accuracy is heavily dependent on the underlying P&L forecast. The main goal must be to produce forecasts consistent with the assumptions used, so that variances can be understood within a framework that is supported by available data, and requiring an appropriate level of effort.

Ongoing validation Models used on a regular basis should be reviewed to validate the assumptions used, and their underlying structure. This can be done through comprehensive variance analysis, a review of forecast balance sheets and, where applicable, by comparison against cash forecasts derived from other sources.

Cash flow variances will normally be the result of either: P&L/activity level changes (permanent variances), or cash cycle changes (a change in payment terms), ie, timing differences.

It is critical to analyse variances in this way, since the response to each should be different. Permanent variances can be addressed by focusing on the accuracy of the P&L forecast, while timing differences require effective working capital management. However the latter is less likely to be effective without knowing the underlying causes of the variance, and this may be a key factor in determining the level of detail held in the model.

Careful review of output and variances may identify other issues such as the following:

- inaccurate timing assumptions may effectively double-count or omit cash flows. Although gross examples will probably be seen in balance sheet reviews, even small examples could become significant where headroom is tight. Inaccurate timing assumptions may also skew the forecast, creating continual rolling variances;
- forecast P&L inaccuracies can be revealed by current distortions, especially where there are long lead-times (eg, levels of current purchases that are too low to support forecast sales). Review of other sources of business information can help, but this is an example of how the cash forecasting process can drive the P&L forecast, rather than the other way round; and
- unexpected variances may also be caused if the assumptions structure does not accurately reflect business cash cycles, which in material cases will require the model to be adjusted.

Future opportunities
The dearth of user-friendly integrated software packages for longer-term cash forecasting may signal a significant market opportunity for software vendors, but for the present many companies will continue to rely on spreadsheets.

Given this, a well-designed model can add value to the cash forecasting process, by allowing more effort to be directed at understanding variances, and reducing their occurrence, as well as improving risk management through sensitivity analysis. It is really about being confident in putting your money where your forecast is! ■

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