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Navigating

Editorial

Budgets are rarely respected. Pleasant or unpleasant surprises make budget revisions necessary. Good management practices require constant updates of budget planning, reflecting not only the most recent realized figures, but also the most up-to-date information available on the fundamentals of the business activity.

*The first article in this month's newsletter sets out the principles of liquidity management through the use of risk measures. **Cash at Risk** helps to ensure greater conformity between a company's economic reality and its budget management, with the help of improved Value at Risk tools.*

The second article deals with company reporting.

Examining firms' financial reports often reveals foreign currency effects, sometimes the impact of raw material price variations. However, except for in very qualitative terms, assessments touching on the overall economic situation and its impact on the company are seldom indicated, which prevents any clear identification of the consequences of company management decisions and thus of the company's intrinsic performance.

Likewise, although more and more companies have become aware of their vulnerability to weather conditions, none calculates the impact in its reporting.

*We offer easy-to-implement **budget-based methods for making more effective use of business reporting**. These methods open the door to company management truly attuned to performance and risk.*

Fayna Lionet
OTC Conseil Americas

OTC CONSEIL
AMERICAS, INC

>> Cash at Risk: Managing Liquidities

Arnaud Bruneton, Senior Manager

Cash at Risk is a statistical measurement of company liquidity levels. Like Value at Risk (VaR), it measures the lowest level of cash on hand anticipated in non-worst-case situations. To that end, cash inflows and outflows are figured as probabilistic variables. The approach is particularly valuable, since it requires identifying the risk factors to which the company is exposed. Like VaR, the approach should be complemented. "Multi-horizon" Cash at Risk reduces the drawbacks of VaR and is more in line with a dynamic picture of company cash positions over several months. Stress Testing also strengthens liquidity management.

By modeling uncertainty using risk factors with an estimated probability distribution, liquidity is measurable through Cash at Risk. It amounts to measuring the liquidity balance resulting from all cash inflows and outflows, with a certainty of x%, within a given time horizon (6 months, a year). It allows the treasurer to manage the company's exposure to variations in economic conditions and, more generally, in risk factors likely to affect cash inflows and outflows (accelerated growth, increased supply costs, drops in turnover, rises in inventory expenditures, etc.).

The calculation of Cash at Risk relies on a three-step method:

1. Identification of risk factors likely to affect monetary flows.
2. Quantification of economic and behavioral sensitivities or elasticities:

Market- or, more generally, risk-factor-movement scenarios have an impact on production volumes, and sometimes on sales prices (rates), competitors' reactions, supply changes, etc. It is at this stage that "economic" approaches to Cash at Risk, which take into account the company's specific industry, distinguish themselves from purely financial and statistical approaches.

3. Stochastic (Monte Carlo Method) or economic (Stress Tests) future scenarios:

Cash flow projections over x periods within different scenarios and identification of the probability distribution of the aggregates considered: cash, net income, debt to equity, etc.

Scenario-generation enables the company to model its "response" to shocks for associated risk factors. The determination of the company's response may be more or less sophisticated.

Stress Tests

VaR and statistical approaches have been seriously called into question during the recent crisis because of their inability to measure risks ex-ante, especially those bearing on liquidity, within banking institutions. Similarly, "traditional" Cash at Risk is not sufficient to account for companies' liquidity risks, for it does not deal with extreme events like liquidity crises, like the one we have just recently experienced. The use of crisis scenarios, Stress Tests, should complement Cash at Risk.

Stress Tests represent hypothetical (either historical or adverse) scenarios for risk factors. They are used in order to identify vulnerabilities to and distortions of the balance sheet. Their analyses consequently enable the determination of contingency plans in case of a crisis, i.e. the best reply in case the alarm bells go off.

Multi-Horizon VaR

Beyond balance-sheet management dealing with an entire budgetary year, it is important to have a view of the company's cash gaps for dates within the year. An approach based on Multi-horizon VaR allows the company to generate reports projecting the minimal liquidity level for a given level of risk for all dates, from a single day to one year. It thus becomes possible to simulate portfolios or loans in a way that respects specific requirements according to different dates.

Implementing Liquidity Management: a Source of Value

The principles of liquidity management proposed here represent a source of value for the company, providing better visibility and better cash management – and, therefore, greater financial optimization. Their implementation also requires the identification of company risk factors, which, in itself, is one of the keys to good management

>> Business Reporting: Attributing Performance

Jean-Paul Nicolaï, CEO of OTC Conseil

Earnings and business activity reports, including financial reports, only rarely separate the impact of exogenous shocks to the company from its actual performance. Exogenous risk factors are many: the overall economic climate, the price of raw materials, calendar effects, etc. A growing number of companies have also become aware of the significant impact of weather on their business activity. Without claiming to predict the exogenous factors, explicitly accounting for them in budget scenarios allows a company to easily separate out questions of company performance, management decisions (marketing, pricing, etc.), and the unforeseen development of exogenous risk factors. The approach contributes to better progress reports as well as better management: identification of business unit performance, management decisions, and, potentially, hedging strategies.

Exogenous Factors or Risk Factors

Whether we are talking about turnover and company operating income or about different decentralized profit centers, it is only natural for executive management to know their fundamentals.

Description of the company's business model entails nothing more than this fundamental analysis. When available, factors ("drivers") characteristic of company demand are carefully studied. Those affecting supply are also important in certain business models.

Factors may be quite disparate; most often, it is preferable to establish a composite indicator that summarizes the information rather than to describe and model demand too precisely. For it is especially important to be able to follow the indicator over time without waiting for all the information to become available. In this way, when the customers are individuals, indicators like the unemployment rate or consumer confidence can "composite" more structural information based on household revenue or consumption and, more specifically, information from the segment concerned (socio-professional group, geographical area, etc.).

Other factors affect demand, often in a quite mechanical way: calendar effects for individual customers (number of days open each month, timing of school holidays in the year, etc.). Another kind of exogenous factor is increasingly followed and calculated: the weather (temperature, rainfall, sunshine, etc.).

It is at once easy and advantageous to account for changes in turnover, profit and the different components of business activity in terms of changes in the company's fundamentals represented by different risk factors. Such an approach aims at calculating the contributors to performance and at making reports clearer. If the budget is in line with the hypotheses of evolving fundamentals, then the performance gaps between realized and budgeted figures can be calculated and analyzed through "performance attribution."

Suppose that company turnover is a function of two exogenous factors:

> The overall economic climate (consumer confidence index);
> The weather (temperature, for example);

and of a management variable (measured by marketing expenditures, for instance).

Analysis of month over month turnover can be written as a first-order approximation: the change in turnover is the weighted sum of variations in the two factors and the management variable. The weights are the partial derivatives of the function with respect to the 3 variables.

Of course, rarely do the 3 variables explain all the changes in turnover. Other factors – in particular, internal company performance (team performance) or, simply, chance – end up filling out the picture every month. However, analysis of business activity is in this case simply interpreted – with orders of magnitude – in function of contextual developments and of company decisions.

Let us assume that the budget has been created by defining trajectories for the three explanatory variables for the 12 coming months. Performance attribution will in this case consist in considering the variation observed in turnover from one month to the next, in comparing it to that anticipated in the budget, and in explaining the difference as follows: the performance gap can be explained by the weighted sum of the deviations in budget forecasts of the exogenous variables (the context) and the decisions taken by the company (possibly in reaction to changes in the context). The deviations are weighted by partial derivatives and represent different "effects" that have an impact on business activity and "explain" over- or underperformance.

Analysis and forecasting: econometrics

Supply and demand functions are often complex. Management control mechanisms are increasingly sophisticated. The goal here is not to take aim at complexity. On the contrary, the goal is rather to identify the principal factors at stake for the company. Whether other factors affect the company does not matter, as long as they do not finally have an underlying impact and the company's history allows one to believe that they will cancel each other out.

Certain econometric techniques (see companion article on website), simple to use although particularly theory-based, enable one to find the happy medium between relevance and efficiency. Econometric estimates are not intended to aid in forecasting. A temporal scenario for each of the explanatory variables simply ensures the coherence of the turnover and income budget scenario. In certain cases, it is possible to use these models in forecasting. In any case, they enable risk analyses through simulation.

Performance and Management

Often, certain variables appear clearly explanatory (expenditure, marketing, pricing, personnel, etc.). In this case, it is possible, over the course of the year, to implement responses to developments in the overall economic situation. Operational management is one of the sources of company performance. Certainly, as far as competitiveness is concerned, there remains everything that will never be measurable and that depends on the intelligence and effort provided by employees. This last point is of utmost importance with regards to managing different units of a company, beyond the mechanical outcomes anticipated in the budget.

The forecast error is a good indicator of internal performance. It includes, of course, other non-measurable exogenous factors, but it can be normalized and should serve as an alarm should thresholds be exceeded.

Planning and Managing

Budgetary management is, first of all a planning, then a management exercise. It requires communication – with shareholders, markets, employees – that should be handled infra-annually: on what bases are the budget hypotheses constructed? Why is the company ahead/behind on its operating schedule?

Similarly, operational management must measure company risks and account for company performance. The approach proposed in this article is easy to implement. It can help strengthen – without requiring an overhaul of – the reporting tools that are already a part of management control. It really does open the door to company management truly attuned to performance and risk.