9. Where short-term budget meets long-term plan

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This article was inspired by difficulties arising in an industrial firm reconciling the budget with the long-term plan. It is said that 'the budget should be the first year of the long-term plan'. Yet conflicts between budget and plan are brought about by some obvious causes:

- Different people. Budgeting people usually have strong ties with the administration and day-to-day operation of the firm; long-term planners usually are way up close to top management.
- Different purposes. The budget is (still) mainly used for registration and control purposes; the long-term plan is used for major organizational and strategic decisions.
- Different procedures. The budget is typically made bottom-up. Information atoms on individual sales and cost items will be provided by commercial and production people on the spot. They will be more and more aggregated until finally the grand total is obtained. The long-term plan is typically made top-down. First, the strategic goals of the firm will be established, then the major qualitative and quantitative objectives will be determined, until finally a complete long-term plan emerges at a high degree of aggregation. In the time dimension long-term planning tends to work backwards: from the long-term goals to a medium-term plan and back to next year's budget. It is at this point that the difficulties arise.

The organization of this article is as follows. First we discuss the conflict between the budget and the first year of the long-term plan using a small numerical example. Then it is shown that the conflict can be solved using the latest available budget pattern and the aggregate figures from the first year of the long-term plan. The next section discusses the algorithm used for resolving the conflict (called the multiproportional RAS method). The final section points out that the algorithm is not as rigid as it seems, because all other specific prior information can be taken into account round about the RAS procedure.
9.1. NEXT YEAR'S BUDGET IN CONFLICT WITH FIRST YEAR OF LONG-TERM PLAN

Naturally, the budget for next year and that part of the long-term plan which refers to next year should tally. But if next year's budget is compiled bottom-up and the first year of the long-term plan is derived top-down, the odds are that they won't.

Yet both approaches have their merits. The bottom-up compilation of the budget ensures that full use is made of specific information of people on the spot concerning detailed items of the budget. This approach probably yields the pattern of individual budget items that is the most reliable. No warranty exists, however, against systematic errors made owing to general underestimation or, possibly, overestimation. The top-down long-term planning of aggregate totals focuses the attention to these totals and probably yields the most reliable forecasts of them. However, for a disaggregation of the first year's plan into a detailed budget additional information is needed. It is suggested in this paper that this additional information be taken from the latest available budget.

Let us consider a small example. Table 9.1 gives the latest available sales budget for next year of a small firm. The budget distinguishes four products (A, B, C, D), three production locations (Rotterdam, Dusseldorf, Brussels), three markets (Benelux, Germany, World) and four quarters (I, II, III, IV). Thus it has four dimensions, viz., products, locations, markets, and time. Table 9.2 shows the budget's marginal totals for all four dimensions. The grand total sales figure is 90482. Table 9.3 gives the aggregates for next year directly estimated in the top-down long-term plan. According to this plan, the grand total sales figure is 108000, i.e. 19% more than the budget figure.

We assume that the budget pattern is reliable. However, there is a systematic tendency toward underestimation. We also assume that the long-term plan aggregate figures, being estimated directly, are the best available forecasts of marginal totals. How can we correct the budget to fit the long-term plan's marginal totals? Increasing all items of the budget by 19% will not help us because the marginal totals for the various dimensions all show up different ratios between the original budget and the long-term plan for next year. We want all marginal totals to tally.

9.2. USING BUDGET PATTERN FOR DISAGGREGATION OF LONG-TERM PLAN

In order to solve the conflict, the following assumption is made. Each item of the budget simultaneously changes proportionally to the corresponding