

Performance Attribution as a Management Control System

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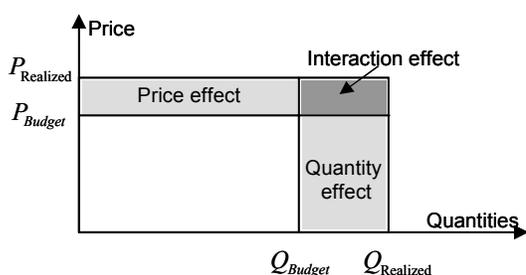
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Performance attribution quantifies the impact of decisions at each level of the investment process on the excess return relative to the benchmark. This simple statement implies that attribution models are not unique and that the search for a single, globally applicable model has little chances of success. There are as many attribution models as families of investment styles. For top-down equity investment strategies, Brinson-style models are recommended. For international portfolios, performance measurers would generally prefer a model that resembles Karnoski and Singer's. For fixed income investing, the most popular models are either successive spread or successive portfolio models. Mark Rubinstein has also developed a model for options that highlights the effects of volatility, interest rates, time, and the underlying securities.

Attribution belongs to the field of management control. Management control systems are usually described as information feedback loops. Goals are set in advance, outcomes are compared with preset objectives, and significant variances are reported to managers for further investigation and remedial action. If we consider performance attribution from this perspective, the parallel is straightforward: goals are set relative to benchmarks, outcomes (returns) are compared to the benchmark performance, and variances (attribution effects) are reported. Since attribution models are mainly used as information systems, they are like diagnostic control systems.

Example of a diagnostic control system

Let's consider a sales budget that assumes target sales expressed as quantities multiplied by price. The difference between realized and budgeted revenues can be explained by a difference in quantities or a difference in prices. This is the standard model in management control that explains the variance as a price effect, a quantity effect, and an interaction effect.



In this graph, as we replace the quantity by the weights allocated to each asset class and the price by the asset class return, we obtain the Brinson *et al.* model. This simple comparison demonstrates that performance attribution models have their roots in the discipline of management control.

Diagnostic versus interactive system

Management control systems are typically viewed as tools of strategy implementation. Control systems are "formalized information-based processes for planning, budgeting, cost control, environmental scanning, competitor analysis,

*performance evaluation, resource allocation, and employee rewards.*¹ Since we focus on portfolio management, we can accordingly see performance attribution as a control system. In the field of portfolio management, planning and budgeting are associated with setting the portfolio strategy and deciding upon the allocation to each asset class. Measuring the allocation and selection effects with an attribution model is like isolating the sources of variance in a cost control system.

Now that we have shown the parallelism between management control and performance attribution, we will briefly describe two models of control systems.

First, these systems are described as information feedback systems and called diagnostic systems. The objectives are defined *ex ante* and the results are assessed relatively to the preset goals. If significant differences are observed, they are reported to managers for remedial actions and follow-up. Attribution models are more like information feedback systems as they are hardly ever used as the basis for remedial action.

Let's consider the case where a significant negative allocation effect is consistently reported by the attribution model. In such a case, a remedial action could be to analyze the decision process of the asset allocation committee to find whether the information used is poor or the analytic skills of the team have to be reinforced. Using attribution in this way would contribute to improving the management decision process. When management control is used as a diagnostic tool, the investment decision process is a constraint: processes are approved (if not developed) by senior managers and they are not challenged by the results of the control system.

Second, control systems serve as catalysts for new strategic initiatives. In the context of investment decision processes, attribution models may contribute to revising actual allocation decisions or to focusing more on selection than allocation. Another example of interactive use would be to focus on credit selection rather than yield curve positioning as a result of a specific fixed income attribution model. One specific characteristic of interactive control is that management is heavily involved in using this control system. The attribution report becomes more a management than a communication tool. Using attribution interactively will stimulate discussions that aim to challenge the existing investment decision process.

Whether they are used diagnostically or interactively, attribution systems would certainly help to formalize and improve the investment decision process and though, contributing to better control of execution as well as the level of risk that is undertaken. We believe that attribution systems will be used in the future more for diagnostic or interactive purposes rather than exclusively for reporting.

Characteristic of a management control system

Using attribution as a management control system requires attention to five important aspects. First, it is necessary to understand the *goals* of the portfolio—what are the acceptable risk and the expected return? Second, the *strategies and style* to reach the risk-return trade-off need to be addressed. Third, the determination of appropriate *benchmark or target levels* is an issue of specific concern. Only after the performance officers have a clear understanding of these three aspects can they decide what attribution model best measures the variances from the target levels that

¹ STRATEGIC ORIENTATION AND TOP MANAGEMENT ATTENTION TO CONTROL SYSTEMS, ROBERT SIMONS, Graduate School of Business Administration, Harvard University, Boston, Massachusetts, U.S.A. *Strategic Management Journal*, Vol. 12, 4942 (1991)

are formalized in the choice of a benchmark. It is obvious, therefore, that the first step of any attribution project is to have a clear view of the investment decision process. The fourth important aspect of a management control system consists in establishing the appropriate *remuneration systems*. To our knowledge, attribution systems are rarely used to decide the level of management fees or the managers' bonuses. The final element of a management system is to ensure sufficient *feedback and feedforward loops*. The feedback process is a key factor that contributes to improving or adapting the actual investment decision process.

Using performance and attribution as a management control system suggests that the function of performance measurement and attribution should be more than a calculation exercise. The performance and attribution department should interact frequently with portfolio managers to deliver important information that will challenge and improve the actual investment decision process. Performance and attribution will also support the implementation of appropriate incentive schemes that are in line with the targets associated with the portfolio. Although control systems add value in the investment decision process, they will never replace the remunerable skills and talents of portfolio managers.