

READING

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Performance Evaluation: An Introduction

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LEARNING OUTCOMES

<i>Mastery</i>	<i>The candidate should be able to:</i>
<input type="checkbox"/>	a. describe the feedback role of performance evaluation in the overall investment management process;
<input type="checkbox"/>	b. describe how information provided by performance evaluation is useful to a variety of stakeholders;
<input type="checkbox"/>	c. describe the major components of investment performance evaluation, including the questions they address;
<input type="checkbox"/>	d. describe the factors that determine the specific characteristics of performance evaluation output;
<input type="checkbox"/>	e. describe the scope of the performance evaluation process and its major activities, including how these activities are interrelated;
<input type="checkbox"/>	f. explain ethical concerns related to investment performance presentations.

INTRODUCTION

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Investors and investment managers need timely and accurate information on the performance of their investment portfolios. Performance evaluation provides such information. Without it, investors and investment managers would find it increasingly difficult to meet stakeholders' current and future needs in a very competitive investment management industry.

In the investment management industry, performance evaluation broadly refers to the measurement, analysis, interpretation, assessment, and presentation of investment results. In particular, performance evaluation provides information about the return and risk of investment portfolios over specified periods. Selection of investment managers is a closely related topic.

Performance evaluation, because of its function in monitoring portfolios, is an integral part of investment management. Among the questions addressed by performance evaluation are the following:

- What were the consequences of investment decisions?

- Are portfolios being managed within their mandates and to investors' expectations?
- What progress has been made toward achieving clients' investment goals?
- How skillful is a portfolio manager?

Professionals involved in performance evaluation have such titles as investment officer, investment controller, investment consultant, financial adviser, equity analyst, fixed-income analyst, compliance officer, risk manager, performance analyst, and performance presentation specialist, depending on their responsibilities and focus.

This reading introduces performance evaluation and is organized as follows. Section 2 explains how performance evaluation fits into the investment management process, highlights the importance of performance evaluation, and describes its major activities and the factors that define the specific characteristics of its output. Section 3 describes the scope of the major activities of performance evaluation in more detail. Section 4 provides a summary.¹

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OVERVIEW OF PERFORMANCE EVALUATION

This section explains why performance evaluation is an integral part of the overall investment management process and how it plays a feedback role in investment management. The process of performance evaluation is also outlined.

2.1 Integration into the Investment Management Process

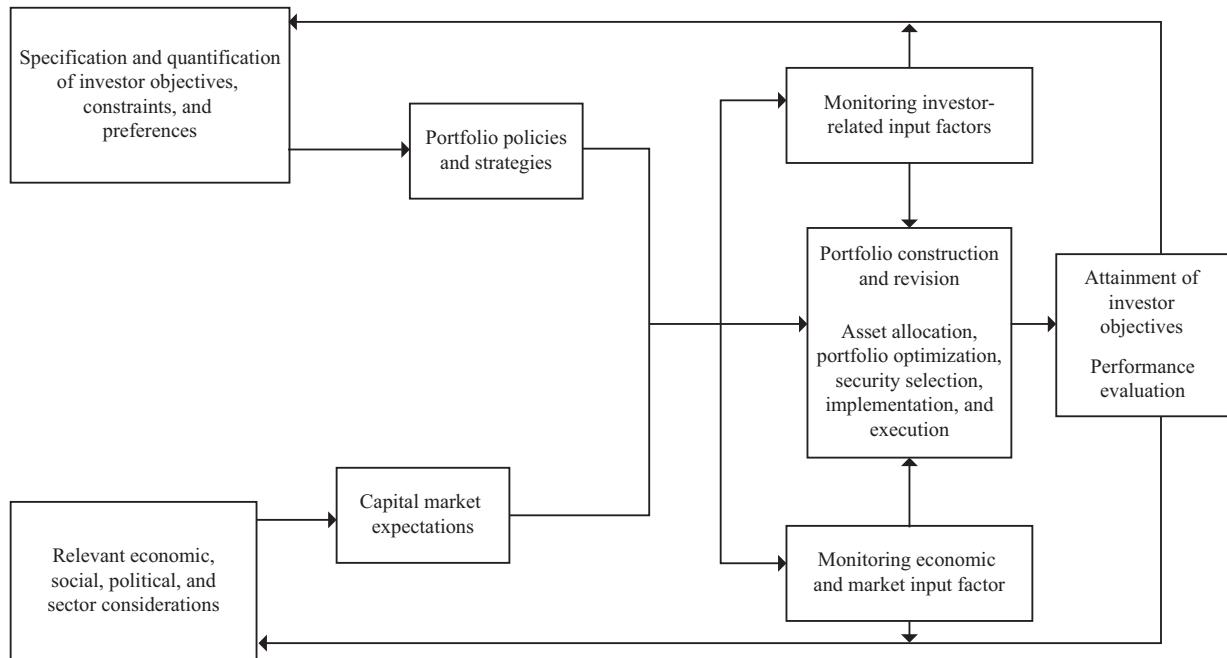
Performance evaluation covers many distinct but interrelated activities, beginning with return calculation. These activities provide information on both final investment results and the investment decisions producing those results.

Performance evaluation's place in portfolio management is shown in Exhibit 1, which illustrates a model of the investment management process as an integrated set of activities aimed at attaining investor objectives.²

¹ In this reading, the terms “asset owners” and “clients”—that is, the clients of investment managers—are used interchangeably. “Investment portfolio” is used broadly to refer to investment accounts or mandates managed by investment managers. A portfolio might be one investment account, multiple distinct investment accounts managed by different portfolio managers, or all investment portfolios of a certain investment product or of an investment manager. Furthermore, in this reading, “asset” and “investment” manager are used in a very broad sense to refer not only to asset management companies but also to all organizations that manage assets—including family offices, pension plans, and endowment funds. As used here, an “investment manager” may employ one or more portfolio managers.

² For a detailed discussion of the investment management process, see John L. Maginn, Donald L. Tuttle, Jerald E. Pinto, and Dennis W. McLeavey, eds., *Managing Investment Portfolios: A Dynamic Process*, 3rd ed. (Hoboken, NJ: Wiley, 2007).

Exhibit 1 The Portfolio Construction, Monitoring, and Revision Process



Source: John L. Maginn, Donald L. Tuttle, Jerald E. Pinto, and Dennis W. McLeavey, eds., “The Portfolio Management Process and the Investment Policy Statement,” Chapter 1 in *Managing Investment Portfolios: A Dynamic Approach*, 3rd ed. (Hoboken, NJ: Wiley, 2007), p. 6.

Exhibit 1 shows a sequence of activities that begins with understanding investor objectives, constraints, and preferences. These investor-related input factors determine the range of portfolio policies and strategies that may be pursued. Such factors, in conjunction with capital market considerations, form the basis for asset allocation and the selection of individual investments. Portfolio managers or their traders then execute those decisions. The portfolio is reviewed on a regular basis to determine whether a revision of the current asset allocation or portfolio composition is required or advisable. Performance evaluation, as the final step, describes performance and analyzes why progress toward investor objectives turned out as it did. Such information may also be useful in judging whether an investment manager is likely to help an investor reach her investment goals in the future, which is why performance evaluation supports manager selection. Performance evaluation is a feedback mechanism that helps align portfolio characteristics with investor objectives.

This information provided by performance evaluation is of great interest to all stakeholders in the investment management process because of its value in evaluating the overall quality of the investment management process as well as individual investment decisions. One very important stakeholder is the investor/client/asset owner whose financial well-being is affected by how effectively his portfolio is managed. Other individuals and entities, however, also have an interest in the information provided by performance evaluation. Exhibit 2 illustrates major stakeholders classified as internal or external to the investment manager.³

³ Performance analysis may be conducted internally and externally to the investment manager (e.g., by custodians, investment consultants, independent performance measurement firms, and the asset owners themselves).

Exhibit 2 Major Stakeholders in Performance Evaluation

Among external stakeholders, regulators are concerned that investment results are reported fairly and accurately and that prospective clients are aware of potential risks to their investment; investment consultants are stakeholders because they may be hired for advice on the selection of investment managers. Internally, portfolio managers and risk controllers (or risk managers) need performance information to control investment processes and manage risk; a firm's marketing and sales departments needs such information to answer prospective client' questions. Senior management needs to oversee individual portfolio managers as well as the entire investment process, and the operations function can use performance analysis to identify pricing and transaction errors and improve the overall quality of information provided.

2.2 Why Performance Evaluation Is Important

This section summarizes and extends the discussion of why performance evaluation is important and its benefits to various stakeholders.

By providing accurate data and analysis on investment decisions and their consequences, performance evaluation allows investment managers (and the portfolio managers they employ) to take corrective measures to improve investment decision-making and management processes. Performance evaluation information helps in understanding and controlling investment risk and should, therefore, lead to improved risk management.

For asset owners and prospective clients, performance evaluation communicates portfolio managers' results. Broadly, it permits asset owners and prospective clients to make better decisions (including selection, continuance, and dismissal) about investment managers by providing relevant information on performance and its drivers. Accurate performance presentations are especially important for asset owners and prospective clients in facilitating accurate analysis.

Performance evaluation in its feedback role may have a large impact on investment managers, asset owners, and other stakeholders. An effective performance evaluation process facilitates the following outcomes:

For investment managers:

- Prompt attention to potential performance issues and unintended business or investment risks
- Effective monitoring of risk and return in relation to the investor's objectives and the designated benchmark

- An effective internal management information system
- Effective internal monitoring and oversight management/mechanisms

For both investment managers and asset owners:

- Clear understanding of the different activities and decisions within the investment management process, as well as their performance contributions
- Reduction in non-fact-based discussions by using more objective and less subjective investment performance information during the performance assessment process
- Dialogue among stakeholders that may lead to innovation, change in practices, strengthened brand and reputation, and new attractive investment products for investors

For asset owners:

- Finding evidence of skill (or lack thereof)

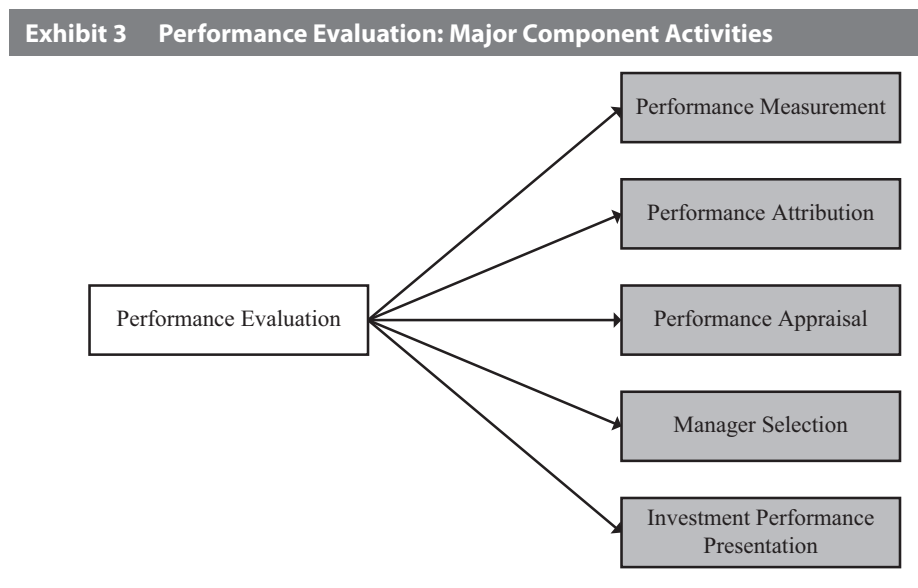
Because of different perspectives held by participants in the investment management process, performance evaluation sometimes involves emotional discussions among the concerned stakeholders. Such discussions often hinder achieving appropriate solutions and may lead to unintended consequences. To minimize the chance of such discussions, performance evaluation should follow appropriate guiding principles. Such principles include the following:

- The intended user and the expected use of the performance information are taken into account in deciding what types of performance evaluation analysis to conduct and what methodologies to use.
- The performance evaluation considers and provides information on changes in investment strategy, investment style, or investment restrictions.
- The performance evaluation is an accurate and unbiased representation of the investments made, results achieved, risks taken, and taxes and fees incurred.
- The performance evaluation is relevant and appropriate for the presented asset classes, investment strategies, investment styles, and investment products.
- The performance evaluation takes into account both risk and return.
- The performance evaluation provides information on past (*ex post*) and expected (*ex ante*) investment risks and compares *ex post* realized risk with the *ex ante* forecast of risk (risk efficiency).
- The performance evaluation analyzes taxes and their effect on investment portfolio performance, where such analysis is feasible and relevant.
- The performance evaluation analyzes fees and associated remuneration (e.g., commissions and referral fees) received for management or administration of the investment portfolio, as well as transaction costs and trading expenses incurred in the portfolio.
- The performance evaluation provides comparatives, such as an appropriate benchmark, to enable assessment of the investment portfolio's relative performance.

Besides attention to these principles, other factors promoting effective performance evaluation include commitment by senior management, well-educated and experienced staff, and an appropriate budget for necessary information technology projects. It is also very important that the performance evaluation process itself be well defined and structured.

2.3 Performance Evaluation: Component Activities

Feedback provided by performance evaluation relates to major questions important for the asset owner and other stakeholders. Associated with each question is a major component activity. Narrowly speaking, performance evaluation consists of performance measurement, attribution, appraisal, and presentation. Although manager selection considers many aspects of a manager in addition to evidence of skill in past performance—such as investment philosophy and risk control processes—manager selection is traditionally presented alongside performance appraisal. In the Certificate in Investment Performance Measurement (CIPM®) curriculum, manager selection is a component activity of performance evaluation. Exhibit 3 illustrates these activities.



Performance evaluation answers a number of key questions within asset management:

- What was the portfolio’s past performance, and what may be expected in the future?
- How did the portfolio produce its observed performance, and what are the expected sources of expected future performance?
- Was the observed portfolio’s performance the result of investment skill or luck?
- Which portfolio managers should be hired, retained, or dismissed?
- What performance information should be presented, and in what way?

2.3.1 What was the portfolio’s past performance?

Performance measurement answers the first question, the calculation of risk and return of the portfolio. Performance may either address a past time period (*ex post* performance) or look forward to a future time period (*ex ante* performance). “*Ex post*” and “*ex ante*” are Latin words that mean, respectively, “after the fact” and “before the fact.”

“Return” may be defined as the percentage gain or loss in wealth resulting from holding an investment over a specified period.⁴ Risk means different things to different stakeholders at different times. The Oxford English Dictionary provides a good

⁴ As defined in Bacon, Cariño, and Stancil (2011) in the CIPM curriculum.

definition of risk: “the potential impact of an event determined by combining the likelihood of the event occurring with the impact should it occur.” Risk is the combination of exposure and uncertainty.⁵ Risk within asset management may be broadly categorized into

- compliance risk,
- operational risk,
- liquidity risk,
- counterparty risk, and
- portfolio risk.

Performance measurement is concerned with portfolio risk. Are the risks of the portfolio of assets—for example, market risk, interest rate risk, credit risk, and currency risks—managed to the client’s expectations?

Both return and risk can be viewed from *ex post* or *ex ante* perspectives. *Ex post*, or historical, risk is the analysis of risk after the event; it answers the question, How risky was the portfolio in the past? *Ex ante*, or prospective, risk is forward looking, based on a snapshot of the current securities and instruments in the portfolio and their historical relationship with each other. It is an estimate or forecast of the future risk of the portfolio.

In its coverage of performance evaluation, the CIPM curriculum begins with rate of return measurement because “calculation of rates of return is the crucial first step in performance evaluation: Without accurate rates of return, we can make no further progress in analyzing performance.”⁶ The motto “garbage in, garbage out” supports the importance of this component—the first step, in fact, of the performance evaluation process. Logically, the reading on return measurement is followed by coverage of risk measurement in the CIPM curriculum.

2.3.2 How did the investment portfolio produce its observed performance, and what are the expected sources of expected future performance?

Performance attribution is concerned with identifying and quantifying the sources of risk and return of a portfolio, and it answers the second question. Performance attribution is the key tool for performance analysts. It allows them to participate in the investment decision process and demonstrably add value. Attribution analysis allows the analyst to understand the sources of risk and return in a portfolio and communicate that understanding to portfolio managers, senior management, asset owners, and other stakeholders.

Effective attribution requires the analyst to thoroughly understand the decision process and quantify the decisions actually made. The attribution analysis must fit the investment decision process. There is less value in analyzing factors that are not part of the decision process other than to identify weaknesses and gaps in the current process. Bond managers, more concerned with the changing shape of the yield curve and credit risk, will manage portfolios in a different way from equity managers and will likely require a different attribution approach. Multi-currency strategies, portfolios with derivative instruments, overlay portfolios, illiquid assets, and bottom-up security-level strategies may each require a different approach aligned with the manager’s decision process.

Following the two dimensions of performance—return and risk—attribution questions can be analyzed from two perspectives.

⁵ Grégoire (2007, p. 309).

⁶ Bacon et al. (2011).

Focusing on return, analysts apply the tools of return attribution. Because most portfolios are assigned a benchmark or reference point for assessing the portfolio manager's management of a portfolio, relative return attribution is usually defined as a set of techniques used to identify the sources of a portfolio's excess return—against the assigned benchmark.

Focusing on risk, analysts apply the tools of risk attribution. Risk attribution is a set of techniques used to identify and quantify the sources of risk in a portfolio as well as the impact of investment decisions contributing to the portfolio's total risk. In contrast to return attribution, which typically is performed only *ex post* (i.e., looking at the portfolio's historical returns), risk attribution can be performed on both an *ex post* basis (i.e., considering the risk of the portfolio in past periods) and an *ex ante* basis (i.e., considering the risk associated with the current portfolio holdings).

Thus, performance attribution properly consists of return attribution and risk attribution, although many practitioners informally use the term “performance attribution” to refer only to return attribution. The asset management industry, however, appears to be moving to integrate risk into performance analytics. Consequently, the performance analytics function is being integrated with risk management or risk control.

2.3.3 Was the observed investment portfolio's performance the result of investment skill or luck?

Performance appraisal is concerned with identifying and measuring investment skill, and it answers the third question. Performance appraisal distinctively treats returns in conjunction with risk. Were the returns (or rewards) earned sufficient compensation for the risks taken? Thus, part of the study of performance appraisal concerns making full adjustment to returns for the risks incurred (risk-adjusted returns). The complexity of the issues addressed suggests that, as in the CIPM curriculum, the topic of performance appraisal should be covered after performance measurement and attribution.

It should be obvious that performance appraisal can provide helpful information in the selection of active investment managers. Of course, many considerations besides questions of active investment skill may be important to an investment client—for example, financial stability and reputation of the investment management company, its operational risk management, and the quality of investment reporting. In that sense, investment manager selection is a broader topic than performance appraisal. Because of the connections between them, however, manager selection is often grouped with and studied along with or after performance appraisal, as in the CIPM curriculum.

2.3.4 Which portfolio managers should be hired, retained, or dismissed?

Manager selection is broadly understood as the analysis of whether to hire, retain, or dismiss a portfolio manager, and it answers the fourth question. Manager selection is used as shorthand to include all three aspects of hiring, retaining, and dismissing managers, and thus, it includes not only selection but also monitoring of manager performance.

In general, manager selection considers both quantitative and qualitative information and addresses not only observed portfolio performance but also operational and organizational factors that affect the repeatability of performance; the financial stability, creditworthiness, and integrity of the investment manager; operational risk management; and any other factors that are important to the client. Portfolio manager turnover, analyst capabilities, and the quality of the investment decision-making process are examples of organizational factors that can affect performance repeatability.

The three activities of hiring, retaining, and dismissing managers each have some unique considerations. For example, the decision to hire involves becoming acquainted in detail with an organization and its operational setup, reputation, risk management, internal control system, and regulatory supervision. When a client is deciding whether to retain a manager, she may have gained considerable further experience with the

manager. Such experience includes not only the experience with the manager's investment performance but also further operational experience, such as the quality of client relationship management and investment reporting. Considerations not present when the manager was hired may be important—for example, whether an investment strategy or style should be retained or changed to better reflect changed circumstances or investment objectives. In replacing a manager, a client also needs to consider the costs and risks in transitioning assets from the old to the new portfolio manager.

2.3.5 What investment performance information should be presented, and in what way?

Investment performance presentation is concerned with providing information about the performance of investment portfolios, and it answers the final key question.

Among stakeholders external to the investment manager, it is useful to distinguish between two kinds of consumers of performance information: prospective clients and existing clients. Reporting to prospective clients is very much sales driven—prepared from the perspective of the investment manager to reflect the manager's track record and skills. Therefore, this type of reporting often needs to adhere to specific regulations or industry best practices that aim to protect less informed, non-professional investors. The Global Investment Performance Standards (GIPS®) address this need. Reporting to existing clients has other focuses, including explaining the investment manager's recent investment decisions and information relevant to evaluating progress in achieving client objectives. Among the other stakeholders external to the investment manager that can shape performance presentation are regulators. Internal performance reporting to management is also a related topic.

2.4 Factors Defining the Output of Performance Evaluation Activities

In general, performance evaluation handles performance information or data in any format provided by the preparer for the intended user. Four factors characterize the output of a performance evaluation activity:

- the performance information to be analyzed,
 - the intended user of the performance evaluation,
 - the intended use of the performance evaluation, and
 - the preparer of the performance evaluation.
- *Performance information*: profit and loss figures; performance figures (return and risk), both *ex ante* (forward looking) and *ex post* (historical); contributions to absolute or relative return and risk; performance appraisal measures; individual investment, portfolio, benchmark, composite,⁷ and peer group performance figures; or performance analytics, including performance attribution or investment style analysis
 - *Intended user*: prospective or existing clients; marketing officers; client relationship managers; compliance officers; performance analysts; portfolio managers; investment committee members; senior management; investment consultants; journalists; or regulators

⁷ A "composite" in this context is an aggregation of one or more portfolios managed according to a similar investment mandate, objective, or strategy.

- *Intended use:* determination of the sources of the absolute or relative return and risk; monitoring the implementation of the investment strategy; monitoring agreed risk limits, investment restrictions, or portfolio characteristics; product review; performance assessment; analysis of investment skills; or peer group comparisons
- *Preparer:* custodian; fund administrator; research department; investment management company; broker; financial analyst; investment adviser; investment consultant; independent performance measurer; investment controller; risk manager; performance analyst; reporting specialist; compliance officer; or the asset owner

Various performance evaluation activities can be characterized along these dimensions. For example, consider the production of a return attribution. Exhibit 4 illustrates a sample return attribution report for a multi-asset-class portfolio. This report consists of information analyzing the sources of investment returns in terms of investment management decisions—in particular, asset allocation and security selection.⁸ In assigning responsibility for those results, it would be important to know whether the asset class weighting decisions were the responsibility of the client or were delegated to an external party, in particular an external investment manager. If the client made tactical asset allocation decisions but delegated security selection to external managers, the asset class results would be attributed to the client and the security selection results to the delegated portfolio managers. The return attribution report may be used by the performance analyst and/or head of portfolio management (for monitoring the implementation of the promised investment strategy) or by the client (for monitoring the quality of the individual investment management decisions).

Exhibit 4 Sample Return Attribution Report

	Portfolio			Benchmark			Management Effects			
	Return	Weight	Contribution	Return	Weight	Contribution	Asset Allocation	Security Selection	Interaction	Total
Cash	0.50%	15.00%	0.08%	0.05%	10.00%	0.01%	0.00%	0.05%	0.02%	0.04%
Domestic bonds	-1.50%	20.00%	-0.30%	-0.80%	25.00%	-0.20%	0.04%	-0.18%	0.04%	-0.10%
Foreign bonds	1.25%	5.00%	0.06%	1.20%	8.00%	0.10%	-0.04%	0.00%	0.00%	-0.03%
Domestic equities	5.00%	20.00%	1.00%	3.50%	15.00%	0.53%	0.18%	0.23%	0.08%	0.48%
Foreign equities	2.50%	15.00%	0.38%	4.50%	10.00%	0.45%	0.23%	-0.20%	-0.10%	-0.08%
Mortgages	0.35%	1.00%	0.00%	0.25%	2.00%	0.01%	0.00%	0.00%	0.00%	0.00%
Real estate	-4.50%	5.00%	-0.23%	-3.50%	10.00%	-0.35%	0.18%	-0.10%	0.05%	0.13%
Commodities	0.50%	8.00%	0.04%	-1.50%	5.00%	-0.08%	-0.05%	0.10%	0.06%	0.12%
Private equity	2.00%	8.00%	0.16%	0.50%	5.00%	0.03%	0.02%	0.08%	0.05%	0.14%
Hedge funds	-0.50%	3.00%	-0.02%	1.00%	10.00%	0.10%	-0.07%	-0.15%	0.11%	-0.12%
Total	1.18%	100.00%	1.18%	0.58%	100.00%	0.58%	0.48%	-0.17%	0.29%	0.60%

⁸ The asset allocation effect measures the contribution to excess return (relative to the benchmark return) resulting from over- or underweighting asset classes. The security selection effect measures the contribution to excess return resulting from over- or underweighting individual securities within the respective asset classes. The interaction effect is a combined effect and measures the contribution to excess return resulting from the over- or underweighting of out- or underperforming asset classes.

In Exhibit 4, the decision to overweight domestic equities at 20% versus a benchmark weight of 15% contributed +0.18% in added return—the asset allocation effect. In addition, the selection of individual stocks in the domestic equities segment contributed a further +0.23%—the security selection effect—for a total added return (management effect) of +0.48% for the investment in domestic equities; (tactical) asset allocation was most successful within the foreign equities asset class—with a contribution of +0.23%. In contrast, all active security selection decisions combined removed 17 bps of excess returns. If the entity responsible for security selection claimed capability in that area, further analysis would be appropriate, potentially leading to continuing with security selection, possibly with improvements in process, or abandoning it.

Another example of a performance evaluation activity is a risk contribution analysis. Exhibit 5 illustrates a sample risk contribution report for an equity portfolio. This report consists of information analyzing the sources of absolute investment (total) risk—here measured by standard deviation (volatility) of returns—in terms of Global Industry Classification Standard (GICS) sectors (in particular, energy, materials, industrials, and so on). The report provides investment managers with feedback on an equity portfolio’s current risk exposures to individual GICS sectors. These risk contributions may be used as a test of whether the portfolio manager constructed the equity portfolio risk exposures as he claimed to in the first place. The preparer of the risk contribution report may be a risk analyst performing a special analysis for the head of equity portfolio management or a consultant hired by an investor. The report may be used by the risk manager or the head of equity portfolio management (for monitoring either the risk exposures or the proposed investment strategy) or by the investor (for investment guideline monitoring or performance review).

In Exhibit 5, the total risk of the equity portfolio is expressed as the expected volatility, and it is 14.00%. Furthermore, the contribution of each sector to the total risk is presented: The largest contributor to volatility is the financial sector (with a contribution of 2.52%), followed by the telecommunication services sector (1.92%). An additional kind of investment risk analysis for the portfolio is a risk attribution, in which the contributions of individual investment decisions (e.g., to under- and overweight certain GICS sectors relative to a benchmark) to the total excess risk are analyzed.

Other sets of characteristics can define other kinds of performance evaluation activities, such as scenario analysis, composite performance analysis, performance watch lists, investment style analysis, peer group comparisons, or even a combination of these.

Exhibit 5 Sample Risk Contribution Report

GICS	Marginal Contribution*	Weight	Contribution
Energy	12.00%	6.00%	0.72%
Materials	10.00	8.00	0.80
Industrials	13.00	14.00	1.82
Consumer discretionary	15.00	12.00	1.80
Consumer staples	14.00	7.00	0.98
Health care	16.00	6.00	0.96
Financials	18.00	14.00	2.52
Information technology	18.00	8.00	1.44
Telecommunication services	16.00	12.00	1.92

(continued)

Exhibit 5 (Continued)

GICS	Marginal Contribution*	Weight	Contribution
Utilities	8.00	13.00	1.04
Total risk			14.00%

* "Marginal contribution" of a sector measures the sensitivity of the portfolio's total risk to a small change in the asset holdings. For example, if the portfolio manager increases the holding in the consumer discretionary sector by 1%, the total risk of the portfolio will increase by 15% (change in the asset holdings multiplied by the marginal contribution).

Source: *Risk Measurement and Risk Attribution* (CFA Institute, 2012)

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THE SCOPE OF THE PERFORMANCE EVALUATION PROCESS

Section 2.3 described how a set of major questions of interest to investment managers, asset owners, prospective clients, and other stakeholders can be used to distinguish among the major activities or component processes of performance evaluation. Actually, performance evaluation can address many more questions. This section provides more detailed information on the scope of performance evaluation.

Exhibit 6 presents a fairly general representation of the performance evaluation process. It is a recurring production, analytical, and communication process that uses input from, but also generates feedback to, the various participants and stakeholders in the investment management process. In practice, this process is not standardized, because it depends on specific organizational characteristics and on the historical development of the performance-related department(s) and related sub-processes. For example, at one extreme, performance measurement, attribution, presentation, and appraisal may be centralized for all types of investment products or client segments and managed within one department. At the other extreme, all of these processes might be separately managed and uncoordinated. In some organizations, the performance measurement function and performance analysis function (attribution and appraisal) are separated, with performance measurement more aligned with the operations function in the back office and performance analysis closely supporting portfolio managers and risk management in the front office. Increasingly, performance evaluation and all its elements are joined with risk control in the middle office of asset managers.

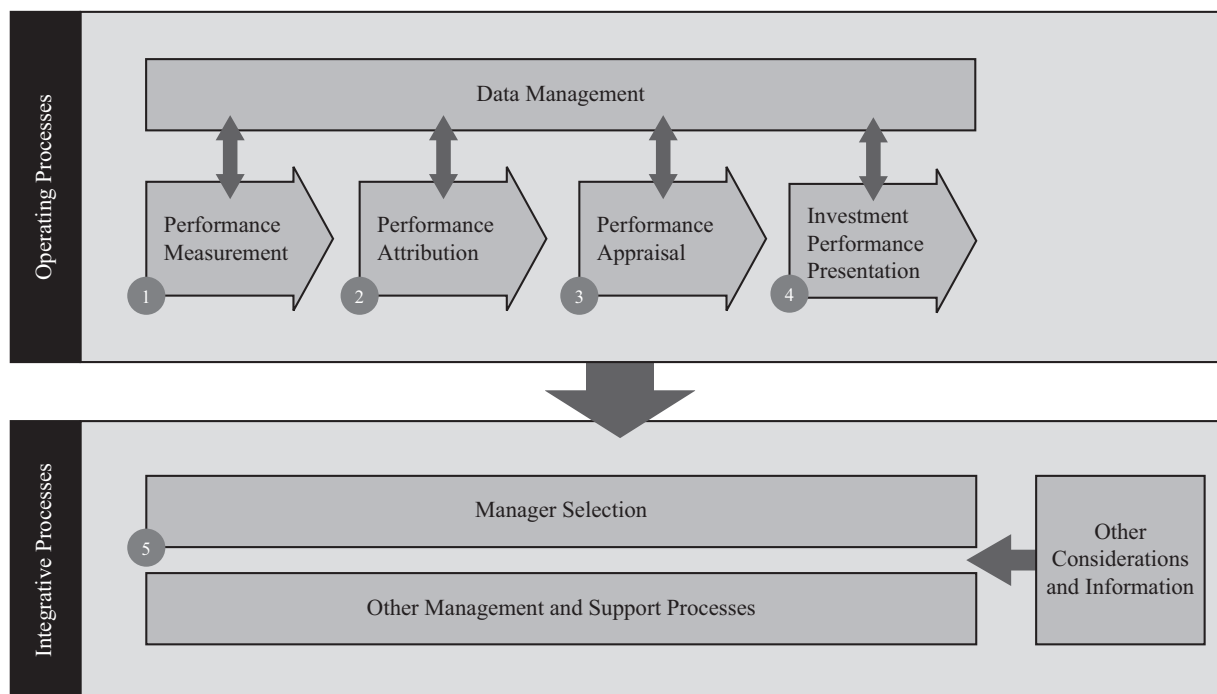
Exhibit 6 Generic Performance Evaluation

Exhibit 6 illustrates that the overall process is usually split into operating processes—covering performance measurement, attribution, appraisal, and presentation—and integrative processes, including manager selection and other management or support processes. Exhibit 6 also highlights that manager selection often uses a wide range of information, including qualitative information that may be only indirectly related to performance.

Operating processes are typically production oriented and data management driven and are used for calculating, managing, visualizing, and reporting performance figures. In contrast, integrative processes focus less on processing and more on detailed analysis, including qualitative analysis, of investment performance and on activities that depend on such analysis. Here, performance evaluation acts as a management information system, providing information to enable the senior management to make future-oriented management decisions—for example, on investment products to be introduced or withdrawn from the marketplace, on investment processes to be adjusted to better meet investors’ expectations or to improve future performance, and on determining remuneration of portfolios managers.

3.1 Scope of Performance Measurement

The first step of the performance evaluation process, performance measurement, deals with all aspects of return and risk measurement for portfolios. Often, performance measurement is taken to be synonymous with return calculation, but it should be understood more broadly to cover the measurement of return as well as risk, whether on an absolute basis or compared with a selected benchmark.

Performance measurement poses various challenges. The complexity starts with ensuring the quality of the input data underlying performance, such as valuation of securities and investment instruments, in terms of both their accuracy and their comparability with the benchmark. Even for liquid marketable securities, such as “blue chip” equities, prices may be available from various sources (e.g., stock exchanges)

and consistency must be monitored to ensure that the portfolio and its benchmark use the same pricing source. “Corporate action” events (e.g., share splits and dividend payments) must also be consistently accounted for, with respect to using the “ex-date” or “value date” convention. Valuation of fixed-income securities may be subject to different interest accrual assumptions. Over-the-counter derivatives, such as non-traded options or swaps, are usually estimated at fair value using a model, and it is important that such models be accurate. Private equity investments, such as private equity funds that hold portfolios of non-traded companies, pose big challenges in terms of determining their accurate values and, hence, meaningful returns. Different return methodologies and different assumptions may apply to different asset categories and different situations. Performance analysts will require detailed and well-documented policies and procedures to avoid self-selection of return methodologies and assumptions designed to improve the apparent performance of the portfolio manager.

Calculating rates of return appears simple when timely and accurate prices are available. More than one measurement methodology is often available, however, and in such cases, a return calculation’s intended purpose can be an important consideration in choosing the appropriate calculation. Two major return measurement methodologies are the money-weighted rate of return (MWRR) and the time-weighted rate of return (TWRR). Broadly speaking, MWRR is the compound rate of growth that would produce the ending value of the portfolios given the timing and magnitude of all cash flows over the measurement period. In contrast, TWRR is the compound rate of growth of one unit of money invested in the portfolio at the start of the measurement period. TWRR neutralizes the impact of cash flow into and out of the portfolio—decisions that are typically beyond the manager’s control—in order to isolate and better measure returns that derive from the manager’s decision making. These concepts need to be presented in detail to be fully appreciated; the reading on rate of return measurement will do that.

Performance measurement also concerns measuring risk, both absolute and relative. Absolute risk relates to the risk of a portfolio, a benchmark, or a composite on a standalone basis—that is, not compared with anything else. In contrast, relative risk concerns risk relative to some reference point, such as a market index.

3.2 Scope of Performance Attribution

Performance attribution is the second major component of the performance evaluation process. It deals with all aspects of explaining what accounts for the return and risk of portfolios.

Performance attribution is often seen as synonymous with return attribution, but—as illustrated in Exhibit 7—this approach addresses only one aspect of performance. Performance attribution covers the decomposition of excess return as well as relative risk and brings both aspects of performance together by decomposing the risk-adjusted return.

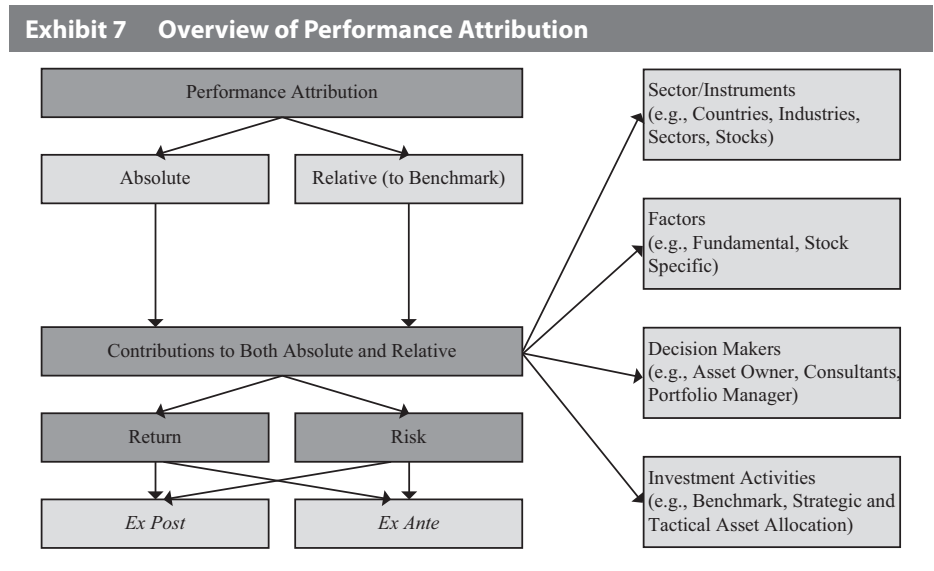


Exhibit 7 also shows that performance attribution may be conducted not only on an absolute but also on a relative basis. Absolute attribution—often also called “contribution analysis”—deals with the decomposition of standalone return and risk measures. For example, if a portfolio that is invested one-half in government bonds and one-half in corporate bonds returned 8% in a year and the returns on government bonds and corporate bonds were, respectively, 6% and 10%, a return contribution analysis (absolute return analysis) would be as follows: The contribution of the allocation to government bonds to the portfolio return was $(1/2) \times 6\% = 3\%$, and the contribution of corporate bonds was $(1/2) \times 10\% = 5\%$; $3\% + 5\% = 8\%$. This approach of explaining a whole (8%) by analysis of the parts (3% and 5%) is characteristic of attribution analysis in general. Further contribution analysis could also be performed within individual asset classes—for example, for the corporate bonds with respect to contribution from movements of the yield curve and credit spreads. A relative return attribution analysis would explain the portfolio’s total excess return in relation to its benchmark and would attribute the sources of excess return to investment decisions. Exhibit 5 previously illustrated a risk contribution—also called “absolute risk attribution.”

A key point is that performance attribution analysis needs to consider who was responsible for each investment decision—that is, it must be consistent with the specific investment decision-making process. Consider, for example, a charity with the following characteristics: (a) The board of directors meets annually to decide on the normal allocation of funds to asset classes—the “policy portfolio” or “strategic asset allocation”—and the benchmark for the overall portfolio (the “policy benchmark”); (b) the charity’s treasurer decides on short-run deviations from the strategic asset allocation (“tactical asset allocation”); and (c) monies allocated to equities and bonds are turned over to hired external equity and fixed-income managers, respectively, who are responsible for selecting market sector allocations and individual securities within those sectors. An appropriate relative return attribution analysis would seek to quantify the impact of the treasurer’s tactical asset allocation decisions and the equity and fixed-income managers’ sector and security selection decisions. The comparison point for the treasurer would be the return to the policy portfolio, and those for the external managers would be the benchmarks they were assigned after considering their respective investment disciplines.

The feedback provided by performance attribution into the investment management process can be useful in many ways. The following are two examples of such feedback and how it is used by different decision makers.

- The sector allocation (i.e., industry groups) and security selection effects of an equity portfolio versus the relevant equity benchmark highlight the investment decisions that led to the excess return and where specifically—for instance, in what sector or by which investments—the portfolio manager added value. This information can lead to improved decision making. For example, if the sector allocation effect was consistently negative for a considerable period and the security selection effect was consistently positive during the same period, one might conclude that the investment manager is sector neutral to the benchmark and that she takes active bets against the benchmark only through security selection.
- The level of a portfolio's expected total excess risk in relation to a benchmark is a measure of the level of active risk of the portfolio management (the variability of a manager's deviations from the benchmark). It might serve as an investment restriction or risk budget—for example, expressed in terms of tracking risk—that a portfolio manager would need to observe. However, an investor might use tracking risk to check whether an active portfolio manager (a) has taken excessive risk in the portfolio in order to increase its performance or (b) has not managed the portfolio as actively as expected. If such an investor concludes that the manager is running an almost indexed investment, he might negotiate a reduction in management fees or even cancel the investment management contract.

A very simple scenario in Exhibit 8 illustrates well how performance attribution introduces feedback into the investment management process and how the respective performance information may be used in practice—using stylized data.

Exhibit 8

Feedback from Performance Evaluation: Attribution

Spring Investment Management (SIM) manages an equity portfolio for Mr. Cleaver. Cleaver chose SIM to manage the equity investments because the portfolio manager convinced him that the proposed active investment style should lead to substantial outperformance. Cleaver asked a performance analyst, Mr. Fairborn, to measure the investment performance (over a two-year period) of his equity portfolio managed by SIM. The portfolio delivered -5.5% return (annualized, on a TWRR basis), compared with its benchmark's -4.8% return. Cleaver specifically wished to have a closer look at the source of the equity portfolio's excess (in this case negative) return. Fairborn prepared the following on the basis of historical data.

Fairborn's Attribution Analysis

Panel A: Absolute and Excess Returns

	Weights		Returns		Excess Returns
	Portfolio	Index	Portfolio	Index	
Sector A	50.00%	60.00%	-8.00%	-7.00%	-1.00%
Sector B	50.00%	40.00%	-3.00%	-1.50%	-1.50%
Total	100.00%	100.00%	-5.50%	-4.80%	-0.70%

Exhibit 8 (Continued)

<i>Panel B: Management Effects*</i>			
	Sector Allocation Effect	Security Selection Effect	Total
Sector A	+0.70%	-0.50%	+0.20%
Sector B	-0.15%	-0.75%	-0.90%
Total	+0.55%	-1.25%	-0.70%

* For the record, the excess return is decomposed using the Brinson–Hood–Beebower model, assuming that the two sectors are independently managed by different portfolio managers. Here the interaction effect is assigned to the security selection effect, and for simplicity, the whole time period was treated as a single measurement period. Details are provided in the CIPM curriculum reading on return attribution.

Looking at this additional investment performance information, Cleaver came to the following conclusions:

- a The management effects do not correspond with the expectations, because SIM claimed an active sector allocation investment approach that avoids taking big security bets. It turns out that security selection more than offset the positive effect of sector allocation.
- b The equity portfolio and its portfolio manager need to be further investigated to enable Cleaver to better understand the sources of portfolio performance.

3.3 Scope of Performance Appraisal

As discussed, one of the major issues addressed by performance appraisal is identifying active investment skill. Such analysis may result in various conclusions.

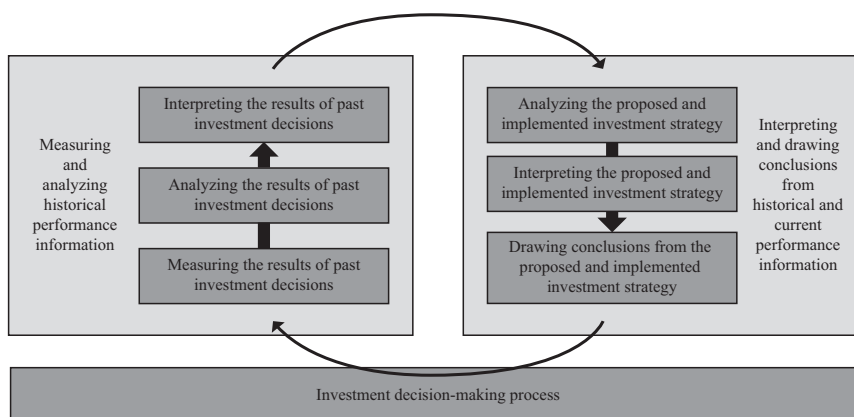
- If the analysis concludes that superior results are based on investment skill, then normally no further action is needed except to check whether the manager's investment strategy or style is still appropriate in a forward-looking sense. In contrast, if the analysis concludes that the superior results are likely the result of luck or are not sustainable, then the rationale of the investment strategy or style for the coming investment period and/or the adequacy of the portfolio manager should be analyzed in detail.
- If the analysis concludes that inferior results are based on lack of active investment skill, then the rationale for the investment strategy or style for the coming investment period and the adequacy of the portfolio manager are in question. In contrast, if the analysis concludes that the inferior results were based on bad luck, then normally no further action is needed to improve future performance except to check whether the investment strategy or style still makes sense.

Often, performance appraisal is misunderstood as pertaining only to what happened in the past. As illustrated on the left-hand side of Exhibit 9, performance appraisal can deal with analyzing and interpreting historical investment performance. In contrast, as shown on the right-hand side of Exhibit 9, the second part of the performance appraisal cycle—maybe the more important one—takes the results of the historical performance interpretation as well as current information and draws conclusions used as feedback for selecting managers (for the asset owner) or for improving the investment management process (for the asset management company). Producing historical performance information by itself has little value if not used as input or feedback into the investment management process to define, confirm, or adjust future

actions. For example, suppose the portfolio manager's investment philosophy favored securities that fell out of favor with most investors during the measurement period. The next activity would be to analyze whether the underlying investment idea and strategy are still rational for the coming period.

The outcome of this analysis will help an investor choose between the following alternatives: (a) Adhere to the investment idea and strategy in the hope public sentiment will change or (b) discontinue investing in the manager's strategy if it is believed either that the public sentiment will not change or that a structural change occurred in the financial markets such that the strategy no longer makes sense.

Exhibit 9 Performance Appraisal Cycle



Despite the arsenal of available quantitative performance appraisal tools, qualitative criteria and subjective judgment are often important in a performance appraisal's final conclusions. That is why a performance appraisal should be conducted by very experienced performance analysts who have a broad knowledge of and long experience with investment management. The problems that may complicate a strictly quantitatively oriented performance appraisal include the following:

- asset owner investment restrictions that place constraints on the manager in implementing the investment strategy;
- opaque investment guidelines or decision making;
- changes to the investment management process, the investment strategy, the investment guidelines, or the manager team during the period being analyzed;
- lack of an appropriate investable benchmark for the investment strategy; and
- taxes and other costs that reduce the return of the portfolio but are not under control of the portfolio manager.

Performance appraisal is often part of performance review meetings. The purpose of these meetings is to discuss with all stakeholders whether the portfolio is still on track to meet the investment objectives and to discuss any corrective measures that might improve the future performance or whether the assets invested with the manager should be increased, decreased, or removed entirely.

Using simplified data, Exhibits 10 and 11 illustrate how performance appraisal produces feedback in the investment management process.

Exhibit 10

Feedback from Performance Evaluation: Appraisal

Following the analytics provided by the performance analyst, Mr. Fairborn (see Exhibit 8), Mr. Cleaver decided to have an even closer look at the equity portfolio managed by SIM. He called the portfolio manager, Mr. Sill, and mentioned his concerns about the performance of the equity portfolio. He also mentioned that the first analytic results did not support a conclusion that SIM was following the originally proposed and approved investment strategy. Sill was quite surprised about Cleaver's feedback and promised to send him a return attribution report examining SIM's investment professionalism.

After speaking with a SIM internal performance analyst, Sill sent the promised return attribution report—knowing that Cleaver already received a different analysis from Fairborn. The following is a summary of what Sill sent to Cleaver, all based on historical data.

Sill's Attribution Analysis**Panel A: Absolute and Excess Returns**

	Weights		Returns		Excess Returns
	Portfolio	Index	Portfolio	Index	
Sector 1	64.20%	40.00%	-6.50%	-6.52%	+0.02%
Sector 2	35.80%	60.00%	-3.70%	-3.65%	-0.05%
Total	100.00%	100.00%	-5.50%	-4.80%	-0.70%

Panel B: Management Effects*

	Sector Allocation Effect	Security Selection Effect	Total
Sector 1	-1.58%	+0.01%	-1.57%
Sector 2	+0.88%	-0.02%	+0.87%
Total	-0.69%	-0.01%	-0.70%

* For the record, the excess return is decomposed using the Brinson–Hood–Beebower model, assuming that the two sectors are independently managed by different portfolio managers. Here the interaction effect is assigned to the security selection effect, and for simplicity, the whole time period was treated as a single measurement period. Details are provided in the CIPM curriculum reading on return attribution.

Looking at the return attribution report provided by SIM, Cleaver came to the following conclusions:

- a The return attribution in Exhibit 8 did not reflect the relevant classification scheme of the investment strategy. The management effects do correspond with the expectations because SIM sold an active sector allocation investment approach without taking big security bets.
- b The active asset allocation investment approach was not profitable over the measurement period, and a detailed discussion on the pursued investment strategy and the portfolio manager's investment skill is needed.

Exhibit 11

Feedback from Performance Evaluation: Appraisal (continued)

Following the detailed return attribution on the equity portfolio provided by SIM (see Exhibit 10), Mr. Cleaver asked for a performance review meeting with SIM to discuss whether corrective measures are necessary. To prepare for the meeting, Cleaver asked the performance analyst, Mr. Fairborn, to gather and summarize other important information relevant to assessing the performance of the equity portfolio. Furthermore, he asked Fairborn to provide some performance statistics on comparable investment products available in the market.

The performance review meeting went well and was very helpful for Cleaver to get the whole picture, to better understand what happened over the last two years, and to decide on subsequent actions.

Looking at the additional investment performance information and other relevant but non-performance-related information, Cleaver came to the following conclusions:

- a The performance comparison with other investment products was not of great help because not many alternatives were available for investment. Furthermore, despite the short history of 24 months of data, the performance appraisal measures used were quite comparable.
- b The portfolio manager could prove that he implemented the proposed investment strategy—by using a different sector classification than that used by Fairborn—but had to confirm that since inception, the active investment approach did not achieve positive results. Furthermore, the portfolio manager could not convince Cleaver that the past and current financial circumstances did not affect the rationale of the pursued investment approach.
- c It is necessary to investigate other investment strategies and approaches for managing his equity portfolio.

3.4 Scope of Manager Selection

Manager selection is closely related to performance appraisal but also often very much involves an evaluation of the investment philosophy and process, as well as the asset manager's human resources, ethical underpinning, and organizational strengths and weaknesses. Manager selection includes both (a) the initial selection of managers and (b) the continuous monitoring and reassessment of their performance, not only in relation to return and risk but also with respect to compliance with investment guidelines, quality of reporting, and "soft factors." Soft factors include reputation in the marketplace and client relationship management. Manager selection (including hiring, monitoring, and firing decisions) uses performance appraisal analysis along with information about investment managers gained from their written materials, their presentations, company visits, audit reports, and interviews, among other sources. Selection is also guided by the particular needs and requirements of the entity choosing the manager, and investment consultants often play a significant role by screening a vast number of investment managers for those most likely to satisfy an investor's needs. Investment consultants may use proprietary databases, know-how, and techniques, as well as personal relationships and experience with other clients.

Hiring investment managers initially involves searching using specific screening criteria, both quantitative and qualitative. This process also requires a great deal of data management—gathering and maintaining information on each investment

manager. This information comes from detailed questionnaires completed by investment managers covering various aspects of the manager's products and processes, as well as from other sources external to the manager. Often, the relevant manager universe is screened to identify those managers deemed most capable of managing a portfolio according to the asset owner's expectations. After further analysis to narrow the list down to a shortlist, detailed discussions or presentations take place to give the various managers the opportunity to explain why they are able to meet the asset owner's expectations. Finally, a pricing discussion leads to a final proposal or decision.

The manager selection process requires asset owners to obtain full, transparent, and accurate information about the managers in question to enable asset owners to make well-founded decisions. An inherent conflict exists because managers are obviously interested in winning the investment mandate and are tempted to present themselves in the best possible light. Asset owners should, therefore, apply certain safeguards and techniques, ask relevant questions, and apply reasonability checks to the information provided by the managers. Among the first questions that the manager should be challenged with are inquiries about its compliance with relevant regulations, being subject to regulatory supervision, and compliance with industry ethical guidelines, such as the GIPS standards and the CFA Institute Asset Manager Code. Negative responses to these inquiries do not necessarily exclude the manager from the selection process but do represent a possible warning sign and should be challenged by asset owners.

The presentation of historical performance information introduces many ethical concerns. Asset owners should pay particular attention to matters that are prone to potential misrepresentation, such as the following:

- claiming GIPS compliance but showing performance figures that do not originate from a GIPS-compliant performance presentation;
- showing portfolios or strategies that do not represent the asset owner's objectives;
- "cherry picking" portfolios—that is, showing portfolios with good performance and hiding those with bad performance (e.g., portfolios managed in the past that have since been liquidated because of poor performance);
- showing model and backtested performance instead of the "real" track record when it is available and not disclosing it as such;
- using return calculation methodologies that are inappropriate or not transparent;
- selecting unsuitable benchmarks to give the false impression of outperformance;
- "hiding" the strategy's risk profile—for example, by not presenting appropriate risk statistics and risk-adjusted returns or ratios;
- cherry picking time periods—that is, showing periods of good performance and hiding periods of bad performance;
- presenting attribution analysis that does not fit the investment process; and
- hiding the impact of fees, taxes, and transaction costs.

Many asset owners lack the necessary personnel resources to perform onsite due diligence at the manager's place of business. In such cases, it is also advisable to obtain the most recent audited reports on internal controls at the investment management firm for useful insights into the manager's internal control system around the investment management process and operational risk management. In addition, it is advisable to require that the firm's claim of compliance with the GIPS standards be independently verified.

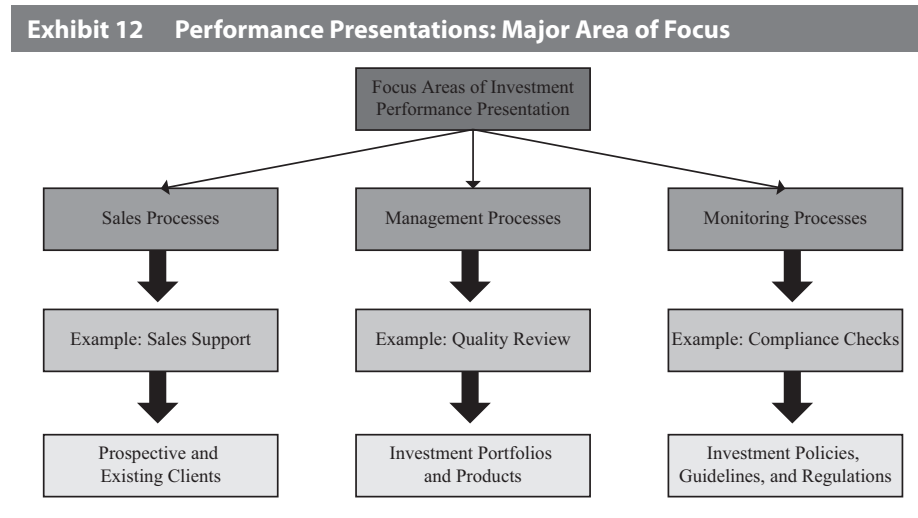
Effective ongoing monitoring of managers depends heavily on the quality of the reporting provided by the manager (or by the appointed third party, such as a custodian bank or investment consultant). The content, form, and frequency of the reporting

ideally should be specified in cooperation between asset owner and asset manager, and the methodology, assumptions, appropriate risk measures, and conventions underlying the calculation of statistics used in the reporting should be clear to the asset owner. The manager must also be responsive to asset owner queries and be available for periodic presentations and explanations of investment results.

3.5 Scope of Performance Presentation

Performance presentation is the fourth major component of performance evaluation. It deals with all aspects of the illustration of performance information for portfolios or investment products. Performance presentation summarizes the information produced by performance measurement, performance attribution, and performance appraisal. It is sometimes supplemented by data and information produced or delivered by other processes, such as financial research, investment accounting, or compliance monitoring. Performance presentation is viewed as investment reporting, which focuses on the presentation of the returns achieved and the risks taken within an investment portfolio during some specified measurement period.

Different kinds of performance presentations can be defined considering four determining factors: (a) the performance information presented, (b) the intended user of the presentation, (c) the intended use of the presentation, and (d) the preparer of the presentation. In practice, performance presentations are often tailored to fit specific needs and circumstances. In general, these presentations are used in sales (including client relationship management), management, and monitoring processes. Along these lines, Exhibit 12 illustrates major areas of focus of performance presentation—especially from an investment manager’s point of view.



In sales, performance presentations are used to attract new clients by illustrating managers’ performance capabilities. Furthermore, as part of the after-sales support, the presentations are also used to increase transparency on portfolio performance for existing clients and as a tool to increase client retention.

Because of their importance within the sales process, these kinds of external presentations bear a high risk for being in some way biased or misleading. For example, an investment manager might present the performance track record of a sample of its best-performing portfolios instead of a composite constructed in accordance with the GIPS standards that represents the complete performance track record.

As Exhibit 12 illustrates, performance presentations are used to provide feedback on the investment management process. An example would be a watch list used by the investment manager to highlight and to monitor portfolios with performance problems based on company-specific performance quality criteria.

The monitoring role of performance presentation focuses on compliance with all relevant investment restrictions and provisions. Client agreements increasingly contain specific portfolio characteristics expressed in terms of performance measures—especially risk measures, such as limits for an investment portfolio's expected tracking risk or target volatility. Other investment restrictions include—for example, for a fixed-income portfolio—the maximum average duration, the minimum credit rating of a single bond, or minimum hedged ratios for foreign currencies.

SUMMARY

This reading introduces performance evaluation and outlines the performance evaluation process and its major parts. Among the points made are the following.

- Performance evaluation refers to the measurement, analysis, presentation, interpretation, and assessment of performance.
- Performance evaluation is the quality control of the investment decision process, enabling asset managers to calculate risk and return, understand the behavior of a portfolio of assets, communicate with asset owners and other stakeholders, and determine how performance can be improved.
- Performance evaluation is an integral part of the investment management decision process because it provides feedback on the effects of investment activities and the decisions on the performance of portfolios. This information is useful to internal stakeholders, such as portfolio managers, senior management, risk managers, compliance professionals, and marketing and sales staff, as well as external stakeholders, such as asset owners, investment consultants, and regulators.
- The information provided by performance evaluation helps evaluate progress toward achieving asset owner goals and consistency with the investment mandate.
- The performance evaluation process is divided into five activities: performance measurement, performance attribution, performance appraisal, manager selection, and investment performance presentation. Manager selection uses a range of information beyond the quantitative information provided by performance evaluation.
- Performance measurement is two dimensional, relating to both risk and return.
- Performance attribution quantifies the sources of investment performance and provides feedback on how investment decisions affect both risk and return.
- Performance appraisal concerns the identification and measurement of investment skill, and it involves analyzing and interpreting return in relation to risk.
- Manager selection concerns the question of whether to hire, retain, or dismiss a manager and incorporates many sources of quantitative and qualitative information, including performance appraisal measures and soft factors on all aspects of the investment managers under consideration.
- Performance presentation relates to the presentation of investment performance and involves documenting the returns and risk of portfolios. In an extremely competitive industry, performance presentations offer significant

opportunities for asset managers to misrepresent performance, self-select methodologies, choose favorable time periods, data mine risk measures, and provide misleading presentations. Compliance with ethical self-regulation standards, such as the GIPS standards, helps reduce the risk of asset managers providing false and misleading performance information.

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PRACTICE PROBLEMS

- 1 Which of the following *best* describes how performance evaluation fits into the asset management process? Performance evaluation:
 - A provides information that reduces most risk.
 - B serves in a feedback role that helps investment managers align portfolios with asset owner objectives.
 - C is part of the asset owner reporting function, which occurs only at the end of the management process.
- 2 From the perspective of the investment firm, an effective performance evaluation process addresses:
 - A appropriate budgeting for necessary information technology (IT) projects.
 - B potential performance problems and unintended business or investment risks.
 - C quantitative but not qualitative aspects of the investment decision-making process.
- 3 Performance appraisal is *best* described as addressing the:
 - A calculation of risk statistics.
 - B identification of investment skill.
 - C identification of the investment decisions that added value.
- 4 Performance attribution primarily concerns:
 - A the past performance of a portfolio.
 - B identifying and quantifying the sources of portfolio performance.
 - C quantifying the value added to portfolio performance by active investment managers.
- 5 The decision to retain or dismiss an investment manager is *best* described as part of which component activity of performance evaluation?
 - A Manager selection
 - B Manager oversight
 - C Performance appraisal
- 6 What are the five major component activities of the performance evaluation process?
 - A Performance measurement, performance attribution, performance appraisal, manager selection, and GIPS compliance
 - B Performance measurement, return attribution, risk attribution, manager selection, and investment performance presentation
 - C Performance measurement, performance attribution, performance appraisal, manager selection, and investment performance presentation
- 7 The subject of performance measurement can *best* be described as:
 - A measuring a manager's investment skill.
 - B calculating a portfolio's risk and return metrics.
 - C identifying the sources of a portfolio's excess return relative to its benchmark.
- 8 Manager selection relates *most* to:

- A the factors that affect the repeatability of performance.
 B how performance information should be presented.
 C how the investment portfolio produced its observed performance.
- 9 Which of the following is *most likely* to appear in a reporting presentation prepared for a prospective client?
 A Return attribution report
 B GIPS performance presentation
 C Report on compliance with tracking risk limits
- 10 Which factors define the specific characteristics of the output of a performance evaluation activity?
 A Intended user, intended use, and performance attribution measures
 B Performance information, risk measures, and risk-adjusted returns
 C Performance information, intended user, intended use, and preparer
- 11 A risk contribution report is *best* described as addressing the:
 A sources of absolute investment risk.
 B contributions of the individual investment decisions to total excess risk.
 C sources of excess return earned expressed as the return contribution for each unit of excess risk taken.
- 12 An investor has a portfolio that contains equity investments in three sectors. Security selection is delegated to an external investment manager. As part of her evaluation of portfolio performance, the investor identifies the management effects as illustrated the following table:

	Sector Allocation Effect (%)	Security Selection Effect (%)	Total (%)
Sector A	-2.0	1.5	-0.5
Sector B	0.1	-0.2	-0.1
Sector C	-3.0	1.0	-2.0

The table presents an example of an analysis that is typically used in performance:

- A appraisal.
 B attribution.
 C measurement.
- 13 An investor is evaluating the performance report of a manager's composite. The composite consists of US large-cap equity portfolios. Which of the following is *most likely* to indicate a potential misrepresentation?
 A Using the S&P 500 Index as a benchmark to calculate excess returns
 B Excluding the performance of terminated portfolios in the composite
 C Using and disclosing backtested performance information to fill in a track record gap
- 14 A mutual fund firm has recently revised the performance presentation of a composite included in its marketing material. Which of the following is *most likely* to indicate a potential misrepresentation? The performance presentation:
 A does not show the impact of fees.
 B does not include a risk attribution analysis.
 C has not been examined by an independent verifier.

SOLUTIONS

- 1 B is correct. Performance evaluation plays a feedback role in investment management. A is incorrect because although performance evaluation supports monitoring of risk, it does not address risk reduction per se. C is incorrect because performance evaluation is ongoing within the investment management process and is not just part of the client reporting function.
- 2 B is correct. The feedback provided by an effective performance evaluation process should identify potential performance problems and unintended business or investment risks. A is incorrect because determining appropriate budgeting for necessary IT projects is not an objective of an effective performance evaluation process per se. C is incorrect because qualitative information is important as well; for example, such information is important in performance appraisal and manager selection.
- 3 B is correct. Performance appraisal concerns the identification and measurement of investment skill. A is incorrect because such calculations are the output of performance measurement. C is incorrect because identifying the investment decisions that added value is the domain of performance attribution.
- 4 B is correct. Performance attribution relates to the sources of portfolio performance. A is incorrect because the past performance of a portfolio is the subject of performance measurement. C is incorrect because quantifying added value is the subject of performance appraisal.
- 5 A is correct. Manager selection is defined to include the initial selection of investment managers and subsequent retention and dismissal decisions. B is incorrect because “manager oversight” is not a description of a component activity of performance evaluation. C is incorrect because performance appraisal concerns the identification of investment skill.
- 6 C is correct. A is incorrect because although GIPS compliance can facilitate effective and ethical investment performance presentation, it is not a standalone performance evaluation activity but, rather, is part of investment performance presentation. B is incorrect because return attribution and risk attribution together constitute performance attribution and performance appraisal has been omitted.
- 7 B is correct. Performance measurement involves the measurement of the return and risk of a portfolio.
- 8 A is correct. In general, manager selection considers both quantitative and qualitative information and addresses not only observed portfolio performance but also operational and organizational factors that affect the repeatability of performance.
- 9 B is correct. Reporting to prospective clients is very much sales driven, and such presentations are prepared from the perspective of the investment manager to reflect the manager’s track record and skills. The Global Investment Performance Standards (GIPS) address this need.
- 10 C is correct. Investment performance information, intended user, intended use, and preparer are the four factors that define performance evaluation output. A is incorrect because investment performance information and preparer are omitted and performance attribution measures are a specific type of performance evaluation output but are not a factor that defines the characteristics of the output. B is incorrect because intended user, intended use, and preparer are omitted; risk measures and risk-adjusted returns are examples of performance evaluation outputs, not factors that define the outputs.

- 11 A is correct. A risk contribution report consists of information analyzing the sources of absolute investment risk. B is incorrect because a risk attribution report, not a risk contribution report, analyzes the contribution of the individual investment decisions to total excess risk. C is incorrect because a risk contribution report does not analyze the sources of excess return.
- 12 B is correct. The table is an example of return attribution analysis, which is typically performed as part of the performance attribution process.
- 13 B is correct. The manager selection process requires investors to obtain full, transparent, and true information about the manager. The inclusion of only survivor portfolios is an example of cherry picking, which means including only portfolios with good performance to hide those with bad performance. Therefore, it should be challenged.
- 14 A is correct. The fact that the presentation does not include information on fees is a warning sign of a potential misrepresentation.