

**2017**

**Level I**

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**CFA®**  
Exam Prep

**Schweser's  
Secret Sauce®**

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**eBook**



SCHOOL OF PROFESSIONAL  
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# LEVEL I SCHWEISER'S SECRET SAUCE®

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SCHWESER'S SECRET SAUCE®: 2017 LEVEL I CFA®

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# FOREWORD

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This book will be a valuable addition to the study tools of any CFA exam candidate. It offers a very concise and very readable explanation of the major parts of the Level I CFA curriculum. Here is the disclaimer: this book does not cover every Learning Outcome Statement (LOS) and, as you are aware, any LOS is “fair game” for the exam. We have tried to include those LOS that are key concepts in finance and accounting, have application to other LOS, are complex and difficult for candidates, require memorization of characteristics or relationships, or are a prelude to LOS at Levels II and III.

We suggest you use this book as a companion to your other, more comprehensive study materials. It is easier to carry with you and will allow you to study these key concepts, definitions, and techniques over and over, which is an important part of mastering the material. When you get to topics where the coverage here appears too brief or raises questions in your mind, this is your clue to go back to your SchweserNotes™ or the textbooks to fill in the gaps in your understanding. For the great majority of you, there is no shortcut to learning the very broad array of subjects covered by the Level I curriculum, but this volume should be a very valuable tool for learning and reviewing the material as you progress in your studies over the months leading up to exam day.

Pass rates have recently been between 35% and 45%, and returning Level I candidates make comments such as, “I was surprised at how difficult the exam was.” You should not despair because of this, but you should definitely not underestimate the task at hand. Our study materials, practice exams, question bank, videos, seminars, and *Secret Sauce* are all designed to help you study as efficiently as possible, help you to grasp and retain the material, and apply it with confidence come exam day.

Best regards,

*Doug Van Eaton*

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# ETHICAL AND PROFESSIONAL STANDARDS

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## Study Session 1

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Weight on Exam	15%
SchweserNotes™ Reference	Book 1, Pages 1–53

Ethics is 15% of the Level I examination and is extremely important to your overall success (remember, you can fail a topic area and still pass the exam, but we wouldn't recommend failing Ethics). Ethics can be tricky, and small details can be important on some ethics questions. Be prepared.

In addition to starting early, study the ethics material more than once. Ethics is one of the keys to passing the exam.

### ETHICS AND TRUST IN THE INVESTMENT PROFESSION

#### Cross-Reference to CFA Institute Assigned Reading #1

Ethics can be described as a set of shared beliefs about what behavior is good or acceptable.

Ethical conduct has been described as behavior that follows moral principles and is consistent with society's ethical expectations and also as conduct that improves outcomes for stakeholders, those who are directly or indirectly affected by the conduct.

A **code of ethics** is a written set of moral principles that can guide behavior.

- Having a code of ethics is a way to communicate an organization's values, principles, and expectations.
- Some codes of ethics include a set of rules or standards that require some minimum level of ethical behavior.
- A **profession** refers to a group of people with specialized skills and knowledge who serve others and agree to behave in accordance with a code of ethics.

One challenge to ethical behavior is that individuals tend to overrate the ethical quality of their behavior and overemphasize the importance of their personal traits in determining the ethical quality of their behavior.

It is claimed that external or situational influences, such as social pressure from others or the prospect of acquiring more money or greater prestige, have a greater effect on the ethical quality of behavior than personal traits.

## **Study Session 1**

### **Ethical and Professional Standards**

Investment professionals have a special responsibility because they are entrusted with their clients' wealth. Because investment advice and management are intangible products, making quality and value received more difficult to evaluate than for tangible products, trust in investment professionals takes on an even greater importance. Failure to act in a highly ethical manner can damage not only client wealth, but also impede the success of investment firms and investment professionals because potential investors will be less likely to use their services.

Unethical behavior by financial services professionals can have negative effects for society as a whole. A lack of trust in financial advisors will reduce the funds entrusted to them and increase the cost of raising capital for business investment and growth. Unethical behavior such as providing incomplete, misleading, or false information to investors can affect the allocation of the capital that is raised.

### **Ethical vs. Legal Standards**

Not all unethical actions are illegal, and not all illegal actions are unethical. Acts of "whistleblowing" or civil disobedience that may be illegal in some places are considered by many to be ethical behavior. On the other hand, recommending investment in a relative's firm without disclosure may not be illegal, but would be considered unethical by many. Ethical principles often set a higher standard of behavior than laws and regulations. In general, ethical decisions require more judgment and consideration of the impact of behavior on many stakeholders compared to legal decisions.

### **Framework for Ethical Decision Making**

Ethical decisions will be improved when ethics are integrated into a firm's decision making process. The following ethical decision-making framework is presented in the Level I CFA curriculum:<sup>1</sup>

- Identify: Relevant facts, stakeholders and duties owed, ethical principles, conflicts of interest.
- Consider: Situational influences, additional guidance, alternative actions.
- Decide and act.
- Reflect: Was the outcome as anticipated? Why or why not?

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<sup>1</sup> Bidhan L Parmar, PhD, Dorothy C. Kelly, CFA, and David B. Stevens, CFA, "Ethics and Trust in the Investment Profession," CFA Program 2017 Level I Curriculum, Volume 1 (CFA Institute, 2016).

## STANDARDS OF PRACTICE HANDBOOK

Cross-Reference to CFA Institute Assigned Readings #2 & 3

We recommend you read the original *Standards of Practice Handbook*. Although we are very proud of our reviews of the ethics material, there are *two* reasons we recommend you read the original *Standards of Practice Handbook* (*11th Ed., 2014*). (1) You are a CFA® candidate. As such, you have pledged to abide by the CFA Institute® Standards. (2) Most of the ethics questions will likely come directly from the text and examples in the *Standards of Practice Handbook*. You will be much better off if you read both our summaries of the Standards *and* the original Handbook and all the examples presented in it.

The CFA Institute Professional Conduct Program is covered by the CFA Institute Bylaws and the Rules of Procedure for Proceedings Related to Professional Conduct. The Disciplinary Review Committee of the CFA Institute Board of Governors has overall responsibility for the Professional Conduct Program and enforcement of the Code and Standards.

CFA Institute, through the Professional Conduct staff, conducts inquiries related to professional conduct. Several circumstances can prompt such an inquiry:

- Self-disclosure by members or candidates on their annual Professional Conduct Statements of involvement in civil litigation or a criminal investigation, or that the member or candidate is the subject of a written complaint.
- Written complaints about a member or candidate's professional conduct that are received by the Professional Conduct staff.
- Evidence of misconduct by a member or candidate that the Professional Conduct staff received through public sources, such as a media article or broadcast.
- A report by a CFA exam proctor of a possible violation during the examination.
- Analysis of exam scores and materials and monitoring of websites and social media by CFA Institute.

Once an inquiry is begun, the Professional Conduct staff may request (in writing) an explanation from the subject member or candidate, and may:

- Interview the subject member or candidate.
- Interview the complainant or other third parties.
- Collect documents and records relevant to the investigation.

The Professional Conduct staff may decide:

- That no disciplinary sanctions are appropriate.
- To issue a cautionary letter.
- To discipline the member or candidate.

## **Study Session 1**

### **Ethical and Professional Standards**

In a case where the Professional Conduct staff finds a violation has occurred and proposes a disciplinary sanction, the member or candidate may accept or reject the sanction. If the member or candidate chooses to reject the sanction, the matter will be referred to a panel of CFA Institute members for a hearing. Sanctions imposed may include condemnation by the member's peers or suspension of the candidate's continued participation in the CFA Program.

### **Code and Standards**

Questions about the Code and Standards will most likely be application questions. You will be given a situation and be asked to identify whether or not a violation occurs, what the violation is, or what the appropriate course of action should be. You are not required to know the Standards by number, just by name.

One of the first Learning Outcome Statements (LOS) in the Level I curriculum is to state the six components of the Code of Ethics. Candidates should *memorize* the Code of Ethics.

Members of the CFA Institute [including Chartered Financial Analyst® (CFA®) charterholders] and candidates for the CFA designation (Members and Candidates) must:

- Act with integrity, competence, diligence, and respect and in an ethical manner with the public, clients, prospective clients, employers, employees, colleagues in the investment profession, and other participants in the global capital markets.
- Place the integrity of the investment profession and the interests of clients above their own personal interests.
- Use reasonable care and exercise independent, professional judgment when conducting investment analysis, making investment recommendations, taking investment actions, and engaging in other professional activities.
- Practice and encourage others to practice in a professional and ethical manner that will reflect credit on themselves and the profession.
- Promote the integrity and viability of the global capital markets for the ultimate benefit of society.
- Maintain and improve their professional competence and strive to maintain and improve the competence of other investment professionals.

### **STANDARDS OF PROFESSIONAL CONDUCT**

The following is a list of the Standards of Professional Conduct. Candidates should focus on the purpose of the Standard, applications of the Standard, and proper procedures of compliance for each Standard.

The following is intended to offer a useful summary of the current Standards of Practice, but certainly does not take the place of careful reading of the Standards

themselves, the guidance for implementing the Standards, and the examples in the Handbook.

1. Know the law relevant to your position.
  - Comply with the most strict law or Standard that applies to you.
  - Don't solicit gifts.
  - Don't compromise your objectivity or independence.
  - Use reasonable care.
  - Don't lie, cheat, or steal.
  - Don't continue association with others who are breaking laws, rules, or regulations.
  - Don't use others' work or ideas without attribution.
  - Don't guarantee investment results or say that past results will be certainly repeated.
  - Don't do things outside of work that reflect poorly on your integrity or professional competence.
2. Do not act or cause others to act on material nonpublic information.
  - Do not manipulate market prices or trading volume with the intent to mislead others.
3. Act solely for the benefit of your client and know to whom a fiduciary duty is owed with regard to trust accounts and retirement accounts.
  - Treat clients fairly by attempting simultaneous dissemination of investment recommendations and changes.
  - Do not personally take shares in oversubscribed IPOs.
- When in an advisory relationship:
  - Know your client.
  - Make suitable recommendations/take suitable investment action (in a total portfolio context).
  - Preserve confidential client information unless it concerns illegal activity.
  - Do not try to mislead with performance presentation.
  - Vote nontrivial proxies in clients' best interests.
4. Act for the benefit of your employer.
  - Do not harm your employer.
  - Obtain written permission to compete with your employer or to accept additional compensation from clients contingent on future performance.
  - Disclose (to employer) any gifts from clients.
  - Don't take material with you when you leave employment (you can take what is in your brain).
  - Supervisors must take action to both prevent *and* detect violations.
  - Don't take supervisory responsibility if you believe procedures are inadequate.

Study Session 1  
Ethical and Professional Standards

5. Thoroughly analyze investments.
  - Have reasonable basis.
  - Keep records.
  - Tell clients about investment process, including its risks and limitations.
  - Distinguish between facts and opinions.
  - Review the quality of third-party research and the services of external advisers.
  - In quantitative models, consider what happens when their inputs are outside the normal range.
6. Disclose potential conflicts of interest (let others judge the effects of any conflict for themselves).
  - Disclose referral arrangements.
  - Client transactions come before employer transactions which come before personal transactions.
  - Treat clients who are family members just like any client.
7. Don't cheat on *any* exams (or help others to).
  - Don't reveal CFA exam questions or disclose what topics were tested or not tested.
  - Don't use your Society position or any CFA Institute position or responsibility to *improperly* further your personal or professional goals.
  - Don't use the CFA designation improperly (it is *not* a noun).
  - Don't put CFA in bold or bigger font than your name.
  - Don't put CFA in a pseudonym that conceals your identity, such as a social media account name.
  - Don't imply or say that holders of the CFA Charter produce better investment results.
  - Don't claim that passing all exams on the first try makes you a better investment manager than others.
  - Don't claim CFA candidacy unless registered for the next exam or awaiting results.
  - There is no such thing as a CFA Level I (or II, or III).

My goodness! What *can* you do?

- You can use information from recognized statistical sources without attribution.
- You can be wrong (as long as you had a reasonable basis at the time).
- You can use several pieces of nonmaterial, nonpublic information to construct your investment recommendations (mosaic theory).
- You can do large trades that may affect market prices as long as the intent of the trade is not to mislead market participants.
- You can say that Treasury securities are without default risk.
- You can always seek the guidance of your supervisor, compliance officer, or outside counsel.

- You can get rid of records after seven years.
- You can accept gifts from clients and referral fees as long as properly disclosed.
- You can call your biggest clients first (after fair distribution of investment recommendation or change).
- You can accept compensation from a company to write a research report if you disclose the relationship and nature of compensation.
- You can get drunk when not at work and commit misdemeanors that do not involve fraud, theft, or deceit.
- You can say you have passed the Level I, II, or III CFA exam (if you really have).
- You can accurately describe the nature of the examination process and the requirements to earn the right to use the CFA designation.

## GLOBAL INVESTMENT PERFORMANCE STANDARDS (GIPS®)

Cross-Reference to CFA Institute Assigned Readings #4 & 5

Performance presentation is an area of constantly growing importance in the investment management field and an important part of the CFA curriculum. Repeated exposure is the best way to learn the material. GIPS appears to be relatively easy, but still requires a reasonable amount of time for it to sink in.

GIPS were created to provide a uniform framework for presenting historical performance results for investment management firms to serve existing and prospective clients. Compliance with GIPS is voluntary, but partial compliance cannot be referenced. There is only one acceptable statement for those firms that claim complete compliance with GIPS.

To claim compliance, a firm must present GIPS-compliant results for a minimum of five years or since firm inception. The firm must be clearly defined as the distinct business entity or subsidiary that is held out to clients in marketing materials. Performance is presented for “composites” which must include all fee-paying discretionary account portfolios with a similar investment strategy, objective, or mandate. After reporting five years of compliant data, one year of compliant data must be added each year to a minimum of ten years.

The idea of GIPS is to provide and gain global acceptance of a set of standards that will result in consistent, comparable, and accurate performance presentation information that will promote fair competition among, and complete disclosure by, investment management firms.

Verification is voluntary and is not required to be GIPS compliant. Independent verification provides assurance that GIPS have been applied correctly on a firm-wide basis. Firms that have had compliance verified are encouraged to disclose that they have done so, but must include periods for which verification was done.

## **Study Session 1**

### **Ethical and Professional Standards**

There are nine major sections of the GIPS, which include:

0. Fundamentals of Compliance.
1. Input Data.
2. Calculation Methodology.
3. Composite Construction.
4. Disclosures.
5. Presentation and Reporting.
6. Real Estate.
7. Private Equity.
8. Wrap Fee/Separately Managed Account (SMA) Portfolios.

#### **Fundamentals of Compliance**

GIPS must be applied on a firm-wide basis. Total firm assets are the market value of all accounts (fee-paying or not, discretionary or not). Firm performance will include the performance of any subadvisors selected by the firm, and changes in the organization of the firm will not affect historical GIPS performance.

Firms are encouraged to use the broadest definition of the firm and include all offices marketed under the same brand name. Firms must have written documentation of all procedures to comply with GIPS.

The only permitted statement of compliance is “XYZ has prepared and presented this report in compliance with the Global Investment Performance Standards (GIPS).” There may be no claim that methodology or performance calculation of any composite or account is in compliance with GIPS (except in communication to clients about their individual accounts by a GIPS compliant firm).

The firm must provide every potential client with a compliant presentation. The firm must present a list of composites for the firm and descriptions of those composites (including composites discontinued less than five years ago) to prospective clients *upon request*. Firms are encouraged to comply with recommended portions of GIPS and must comply with updates and clarifications to GIPS.

Current recommendations that will become requirements are: (1) quarterly valuation of real estate, (2) portfolio valuation on the dates of all large cash flows (to or from the account), (3) month-end valuation of all accounts, and (4) monthly asset-weighting of portfolios within composites, not including carve-out returns in any composite for a single asset class.

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# QUANTITATIVE METHODS

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Study Sessions 2 & 3

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Weight on Exam	12%
SchweserNotes™ Reference	Book 1, Pages 54–323

## STUDY SESSION 2: QUANTITATIVE METHODS—BASIC CONCEPTS

### THE TIME VALUE OF MONEY

Cross-Reference to CFA Institute Assigned Reading #6

Understanding time value of money (TVM) computations is essential for success not only for quantitative methods, but also other sections of the Level I exam. TVM is actually a larger portion of the exam than simply quantitative methods because of its integration with other topics. For example, any portion of the exam that requires discounting cash flows will require TVM calculations. This includes evaluating capital projects, using dividend discount models for stock valuation, valuing bonds, and valuing real estate investments. No matter where TVM shows up on the exam, the key to any TVM problem is to draw a timeline and be certain of when the cash flows will occur so you can discount those cash flows appropriately.

An interest rate can be interpreted as a required rate of return, a discount rate, or as an opportunity cost; but it is essentially the price (time value) of money for one period. When viewed as a required (equilibrium) rate of return on an investment, a nominal interest rate consists of a real risk-free rate, a premium for expected inflation, and other premiums for sources of risk specific to the investment, such as uncertainty about amounts and timing of future cash flows from the investment.

Interest rates are often stated as simple annual rates, even when compounding periods are shorter than one year. With  $m$  compounding periods per year and a stated annual rate of  $i$ , the effective annual rate is calculated by compounding the periodic rate ( $i/m$ ) over  $m$  periods (the number of periods in one year).

$$\text{effective annual rate} = \left(1 + \frac{i}{m}\right)^m - 1$$

With a stated annual rate of 12% (0.12) and monthly compounding, the effective

$$\text{rate} = \left(1 + \frac{0.12}{12}\right)^{12} - 1 = 12.68\%.$$

**Future value (FV)** is the amount to which an investment grows after one or more compounding periods.

- *Compounding* is the process used to determine the future value of a current amount.
- The *periodic rate* is the nominal rate (stated in annual terms) divided by the number of compounding periods (i.e., for quarterly compounding, divide the annual rate by four).
- The *number of compounding periods* is equal to the number of years multiplied by the frequency of compounding (i.e., for quarterly compounding, multiply the number of years by four).

$$\text{future value} = \text{present value} \times (1 + \text{periodic rate})^{\text{number of compounding periods}}$$

**Present value (PV)** is the current value of some future cash flow.

- *Discounting* is the process used to determine the present value of some future amount.
- *Discount rate* is the periodic rate used in the discounting process.

$$\text{present value} = \frac{\text{future value}}{(1 + \text{periodic rate})^{\text{number of compounding periods}}}$$

For *non-annual compounding* problems, divide the interest rate by the number of compounding periods per year,  $m$ , and multiply the number of years by the number of compounding periods per year.

An *annuity* is a stream of equal cash flows that occur at equal intervals over a given period. A corporate bond combines an annuity (the equal semiannual coupon payments) with a lump sum payment (return of principal at maturity).

- *Ordinary annuity*. Cash flows occur at the end of each compounding period.
- *Annuity due*. Cash flows occur at the beginning of each period.

**Present value of an ordinary annuity.** Answers the question: How much would an annuity of \$ $X$  every (month, week, quarter, year) cost today if the periodic rate is  $I\%$ ?

The present value of an annuity is just the sum of the present values of all the payments. Your calculator will do this for you.

- $N$  = number of periods.
- $I/Y$  = interest rate per period.
- $PMT$  = amount of each periodic payment.
- $FV = 0$ .
- Compute (CPT) present value (PV).

## Study Sessions 2 & 3

### Quantitative Methods

In other applications, any four of these variables can be entered in order to solve for the fifth. When both present and future values are entered, they typically must be given different signs in order to calculate N, I/Y, or PMT.

**Future value of an ordinary annuity.** Just change to PV = 0 and CPT → FV.

If there is a mismatch between the period of the payments and the period for the interest rate, adjust the interest rate to match. Do not add or divide payment amounts. If you have a *monthly payment*, you need a *monthly interest rate*.

### Present and Future Value of an Annuity Due

When using the TI calculator in END mode, the PV of an annuity is computed as of t = 0 (one period prior to the first payment date, t = 1) and the FV of an annuity is calculated as of time = N (the date of the last payment). With the TI calculator in BGN mode, the PV of an annuity is calculated as of t = 0 (which is now the date of the first payment) and the FV of an annuity is calculated as of t = N (one period after the last payment). In BGN mode the N payments are assumed to come at the beginning of each of the N periods. An annuity that makes N payments at the beginning of each of N periods, is referred to as an annuity due.

Once you have found the PV(FV) of an ordinary annuity, you can convert the discounted (compound) value to an annuity due value by multiplying by one plus the periodic rate. This effectively discounts (compounds) the ordinary annuity value by one less (more) period.

$$PV_{\text{annuity due}} = PV_{\text{ordinary annuity}} \times (1 + \text{periodic rate})$$

$$FV_{\text{annuity due}} = FV_{\text{ordinary annuity}} \times (1 + \text{periodic rate})$$

*Perpetuities* are annuities with infinite lives:

$$PV_{\text{perpetuity}} = \frac{\text{periodic payment}}{\text{periodic interest rate}}$$

*Preferred stock* is an example of a perpetuity (equal payments indefinitely).

Present (future) values of any series of cash flows is equal to the sum of the present (future) values of each cash flow. This means you can break up cash flows any way

that is convenient, take the PV or FV of the pieces, and add them up to get the PV or FV of the whole series of cash flows.

## DISCOUNTED CASH FLOW APPLICATIONS

Cross-Reference to CFA Institute Assigned Reading #7

### Net Present Value (NPV) of an Investment Project

For a typical investment or capital project, the NPV is simply the present value of the expected future cash flows, minus the initial cost of the investment. The steps in calculating an NPV are:

- *Identify* all outflows/inflows associated with the investment.
- *Determine* discount rate appropriate for the investment.
- *Find PV* of the future cash flows. Inflows are positive and outflows are negative.
- *Compute* the sum of all the discounted future cash flows.
- *Subtract* the initial cost of the investment or capital project.

$$NPV = \frac{CF_1}{(1+r)} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_{t-1}}{(1+r)^{t-1}} + \frac{CF_t}{(1+r)^t} - NI$$

where:

$CF_t$  = the expected net cash flow at time  $t$

$r$  = the discount rate = opportunity cost of capital

NI = the net (time = 0) investment in the project

With uneven cash flows, use the CF function.

### Computing IRR

IRR is the discount rate that equates the PV of cash inflows with the PV of the cash outflows. This also makes IRR the discount rate that results in NPV equal to zero. In other words, the IRR is the  $r$  that, when plugged into the above NPV equation, makes the NPV equal zero.

When given a set of equal cash inflows, such as an annuity, calculate IRR by solving for I/Y.

When the cash inflows are uneven, use CF function on calculator.

**Example:**

Project cost is \$100,  $CF_1 = \$50$ ,  $CF_2 = \$50$ ,  $CF_3 = \$90$ . What is the NPV at 10%? What is the IRR of the project?

**Answer:**

Enter  $CF_0 = -100$ ,  $C_01 = 50$ ,  $F_01 = 2$ ,  $C_02 = 90$ ,  $F_02 = 1$ .

NPV, 10, enter, ↓, CPT, display 54.395.

IRR, CPT, display 35.71 (%).

### NPV vs. IRR

- *NPV decision rule:* For independent projects, adopt all projects with  $NPV > 0$ . These projects will increase the value of the firm.
- *IRR decision rule:* For independent projects, adopt all projects with  $IRR >$  required project return. These projects will also add value to the firm.

NPV and IRR rules give the same decision for independent projects.

When NPV and IRR rankings differ, rely on NPV for choosing between or among projects.

### Money-Weighted vs. Time-Weighted Return Measures

Time-weighted and money-weighted return calculations are standard tools for analysis of portfolio performance.

- *Money-weighted return* is affected by cash flows into and out of an investment account. It is essentially a portfolio IRR.
- *Time-weighted return* is preferred as a manager performance measure because it is not affected by cash flows into and out of an investment account. It is calculated as the geometric mean of subperiod returns.

### Various Yield Calculations

*Bond-equivalent yield* is two times the semiannually compounded yield. This is because U.S. bonds pay interest semiannually rather than annually.

*Yield to maturity* (YTM) is the IRR on a bond. For a semiannual coupon bond, YTM is two times semiannual IRR. In other words, it is the discount rate that equates the present value of a bond's cash flows with its market price. We will revisit this topic again in the debt section.

*Bank discount yield* is the annualized percentage discount from face value:

$$\text{bank discount yield} = r_{BD} = \frac{\$\text{discount}}{\text{face value}} \times \frac{360}{\text{days}}$$

*Holding period yield* (HPY), also called holding period return (HPR):

$$\text{holding period yield} = \text{HPY} = \frac{P_1 - P_0 + D_1}{P_0} \text{ or } \frac{P_1 + D_1}{P_0} - 1$$

For common stocks, the cash distribution ( $D_1$ ) is the dividend. For bonds, the cash distribution is the interest payment.

HPR for a given investment can be calculated for any time period (day, week, month, or year) simply by changing the end points of the time interval over which values and cash flows are measured.

*Effective annual yield* converts a  $t$ -day holding period yield to a compound annual yield based on a 365-day year:

$$\text{effective annual yield} = \text{EAY} = (1 + \text{HPY})^{365/t} - 1$$

Notice the similarity of EAY to *effective annual rate*:

$$\text{EAR} = (1 + \text{periodic rate})^m - 1$$

where  $m$  is the number of compounding periods per year and the periodic rate is the stated annual rate/ $m$ .

*Money market yield* is annualized (without compounding) based on a 360-day year:

$$\text{money market yield} = r_{MM} = \text{HPY} \times \frac{360}{t}$$