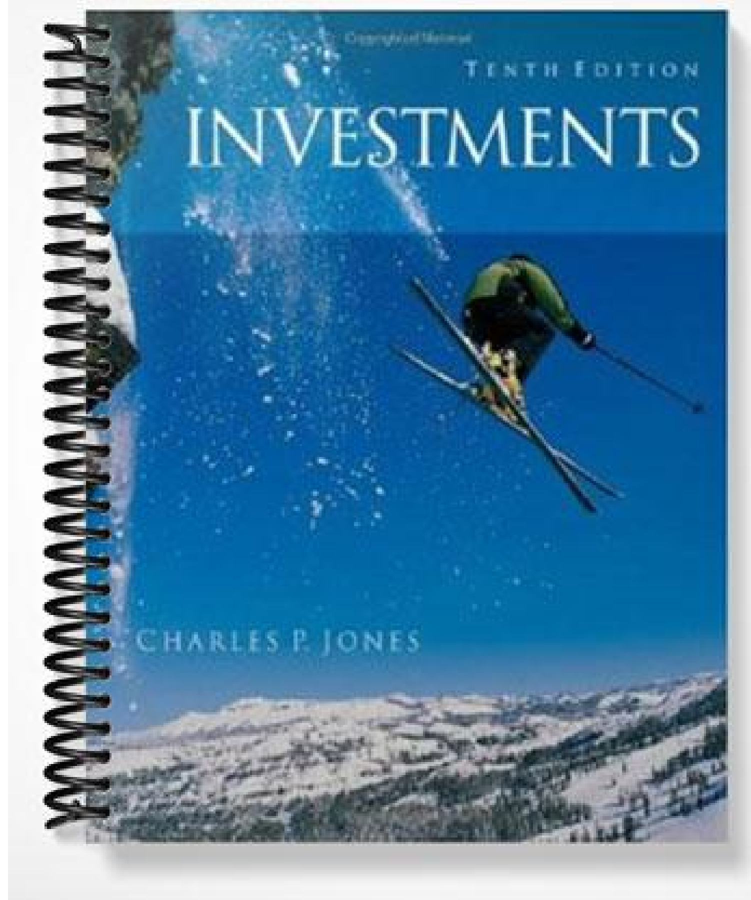
SOLUTIONS MANUAL
TENTH EDITION
INVESTMENTS
CHARLES P. JONES

INSTRUCTOR'S RESOURCE GUIDE

To Accompany

INVESTMENTS

ANALYSIS AND MANAGEMENT

TENTH EDITION

CHARLES P. JONES
NORTH CAROLINA STATE UNIVERSITY

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PREFACE

This instructor's manual is designed to assist you in teaching an Investments course using the 10th edition of *Investments: Analysis and Management*. In addition to organizational material that allows you to quickly review and organize each chapter, the manual contains answers to all end-of-chapter questions and all end-of-chapter problems. Considerable time and effort have gone into the preparation of these questions and problems, and their answers, and every effort has been made by me to ensure accuracy in the answers as presented.

Each chapter contains an ample number of questions that test the student's knowledge of the material. Most of these questions deal directly with the relevant information for that chapter, and can be answered by carefully reading the text. Some questions are designed to encourage the student to think about the issues involved in the investing process, and may well generate additional class discussion. A thorough review of these questions after each chapter will provide the basis for assessing one's knowledge of the material.

The problems range from the simple to the challenging. Most do not require extensive calculations; some, however, do. These problems have been carefully coordinated with the chapters, allowing students to see how the concepts discussed in the chapter are implemented in practice. Some of these questions are designed to be answered with software packages available with this text or otherwise. The applicable problems can be solved with either. I have not designated problems with a computer symbol because instructors may prefer to use alternative methods when solving some of these problems, such as calculators or tables.

New questions and problems have been added to the tenth edition, while many have been carried over from the ninth edition. The names of the companies in some of these problems have been changed to provide some element of freshness.

Two new features of the 10th edition include Computational Problems and Spreadsheet Exercises. These provide students additional opportunities to improve their understanding of the material as well as their skill set. Most of the Computational Problems are new, and some are quite challenging. All of the Spreadsheet Exercises have been freshly created to complement the material in a chapter.

As with recent editions, some questions and problems from the CFA examinations are provided. This material is desirable because it shows students that the concepts studied in the text, and in the course, are directly involved on professional examinations given to those people in the money management industry seeking the Chartered Financial Analyst designation. This material makes a significant contribution to the relevance of the text to students. These questions are particularly relevant in the bond chapters (Chapters 17 and 18), and in the security analysis chapters (Chapters 13-15), because some of the important points in these chapters correspond very closely to questions asked on the examinations.

This Instructor's Manual includes material designed to aid instructors in teaching the course using the text. For each chapter, the following features are included in this manual:

1. **Chapter Overview** This is a detailed organizational description of the chapter, including a discussion of what is covered and some of the philosophy underlying the material included. This gives instructors an in-depth view of the chapter in order for them to be able to quickly see all of the elements that are covered. Thus, instructors can, if they choose, quickly and easily integrate their own material and proceed to lecture on the chapter, knowing that they will be covering the same topics and concepts that are covered in the chapter. It is strongly recommended that the instructor read these chapter overviews before proceeding to develop lectures pertaining to the chapter topics.

2. **Chapter Objectives** These are concise descriptions of what the chapter is intended to accomplish. Thus, instructors can quickly see what the chapter is about, and this may be particularly helpful in organizing the material in the chapter.

3. **Major Chapter Headings (Contents)** All first level headings are shown in bold, and second level headings are shown with a large bullet. In addition, the third level headings and/or major topics are shown on one or more lines following each second level heading. By examining this section for a few minutes, instructors will be able to quickly grasp the exact topics and issues covered in the chapter. This provides a detailed blueprint of all material covered.

4. **Points to Note About the Chapter** This section describes every figure and table in the chapter, suggesting what should be emphasized in class and what can be left for students to read on their own. It addition, it suggests when transparencies may be particularly useful. This section also describes the box inserts in the chapter, indicating which are particularly valuable in terms of likely student interest, class discussion, and so forth.

5. **Answers to End-of-Chapter Questions** All chapters have many end-of-chapter questions, and some chapters have a large number of questions. These questions thoroughly cover the important material in the chapter.

6. **Answers to End-of-Chapter Problems** Most of the chapters have end-of-chapter problems, although some (for example, Chapters 1 and 4) do not. The answers as provided have been checked, and are based on class-tested problems. Answers to Computational Problems are also provided in the Instructor's Manual.

I have prepared this Instructor's Manual personally. My major objectives have been to put together a manual that would be of significant help to instructors in teaching the course and to try to ensure that the questions and problems are answered accurately and clearly. I have tested this material in class, had it reviewed, and examined in carefully. After much experience with writing textbooks and preparing supplements, I have learned not to try to guarantee you that no errors remain. However, I can assure you that I have made every effort to find all errors and correct them, and I am seriously interested in correcting any remaining errors and continuously improving the entire package available to users.

In the final analysis, this manual is only as valuable as your, the user, find it. I want the text and supplements to be as useful to you as they can possibly be. I would like very much to receive and feedback from you at anytime concerning the text or the supplements. The feedback that I have received in the past has often been directly incorporated into the next edition. Criticisms, suggestions, recommended changes, and so forth are most welcome.

If I can be of any help to you in teaching the course with my text and supplements, or supply you with any material I may have pertaining to these items, please let me know. I have additional overheads, exams, and other material that I use in my own class that I can personally send to verified adopters who contact me. I will be happy to talk with you about these matters whenever convenient for you.

I can be reached in the following ways:

Charles P. Jones
College of Management
P. O. Box 7229
North Carolina State University
Raleigh, North Carolina 27695-7229

phone 919-515-6940
e-mail at office: JONES@COMFS1.COM.NCSU.EDU

Charles P. Jones
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Investments--Analysis and Management

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PART ONE: BACKGROUND

Chapter 1: Understanding Investments

CHAPTER OVERVIEW

Chapter 1 is designed to be a standard introductory chapter. As such, its purpose is to introduce students to the subject of Investments, explain what Investments is concerned with from a summary viewpoint, and outline what the remainder of the text will cover. It defines important terms such as **investments, security analysis, portfolio management, expected and realized rate of return, risk-free rate of return, risk, and risk tolerance**.

IT IS IMPORTANT TO NOTE THAT Chapter 1 discusses some important issues, such as the expected return--risk tradeoff that governs the investment process, the uncertainty that dominates investment decisions, the globalization of investments, and the impact of institutional investors. As such, the chapter sets the tone for the entire text and explains to the reader what Investments is all about. It establishes a basic framework for the course without going into too much detail at the outset.

Chapter 1 also contains some material that will be of direct interest to students, including the importance of studying investments (using illustrations of the wealth that can be accumulated by compounding over long periods of time) and investments as a profession. The CFA designation is discussed, and the Appendix for Chapter 1 contains a more detailed description of the CFA program.

Equally important, Chapter 1 does *not* cover calculations and statistical concepts, data on asset returns, and so forth, either in the chapter or an appendix. The author feels strongly that Chapter 1 is not the place to do this when most students have little knowledge of what the subject is all about. They are not ready for this type of important material, and since it will not be used immediately they will lose sight of why it was introduced. The author believes that it is much more effective to introduce the students *thoroughly* to what the subject involves.

It is highly desirable for instructors to add their own viewpoints at the outset of the course; perhaps using recent stories from the popular press to emphasize what investments is concerned with, why students should be interested in the subject, and so forth. One interesting and important topic that can be discussed in class is investment fraud. Scams continue day after day, and many people lose their life savings. By learning a few basic investing principles, students will be able to avoid these “scams,” thereby possibly saving themselves or their family and friends from misfortune.

Chapter 1 also discusses ethics in investing, setting the stage for examples of ethical issues in other chapters.

CHAPTER OBJECTIVES

To introduce students to the subject matter of Investments from an overall viewpoint, including terminology.

To explain the basic nature of the investing decision as a tradeoff between expected **return** and **risk**.

To explain that the decision process consists of **security analysis** and **portfolio management** and that external factors affect this decision process. These factors include *uncertainty*, the necessity to think of investments in a *global context*, the environment involving *institutional investors*, and the impact of the internet on investing.

To organize the remainder of the text.

MAJOR CHAPTER HEADINGS [Contents]

An Overall Perspective On Investing

Just Say NO!

Establishing A Framework For Investing

Some Definitions
[investment; investments; financial and real assets; marketable securities; portfolio]

A Perspective on Investing in Financial Assets
[investing is only one part of overall financial decisions]

Why Do We Invest?
[to increase monetary wealth]

The Importance of Studying Investments

The Personal Aspects
[most people make some type of investment decisions; examples of wealth accumulation as a result of compounding; people will be largely responsible for making investing decisions affecting their retirement; how an understanding of the subject will help students when reading the popular press]

Investments as a Profession
[various jobs, salary ranges; financial planners; CFA designation]

Understanding the Investment Decision Process

The Basis of Investment Decisions—Return and Risk
[expected return; realized return; risk; risk-averse investor; risk tolerance; the Expected-Return--Risk Tradeoff; diagram of tradeoff; ex post vs. ex ante; risk-free rate of return, RF]

Structuring the Decision Process
[a two-step process: security analysis and portfolio management]

Important Considerations in the Investment Decision Process for Today's Investors

The Great Unknown
[uncertainty dominates decisions--the future is unknown!]

The Global Investments Arena

[the importance of foreign markets; the Euro; emerging markets]

The Importance of the Internet

[using the internet to invest]

Individual Investors vs. Institutional Investors

[individual investors compete with institutional investors, but individuals are the beneficiaries of institutional investor activity; Regulation FD; spin-offs]

Ethics in Investing

Organizing the Text

[Background; Realized and Expected Returns and Risk; Bonds; Stocks; Security Analysis, including both fundamental and technical analysis; Derivative Securities; Portfolio Theory and Capital Market Theory; the Portfolio Management Process and Measuring Portfolio Performance]

POINTS TO NOTE ABOUT CHAPTER 1

Exhibits, Figures and Tables

Exhibit 1-1 discusses some professional designations used by people in the money management business. It offers a good opportunity to discuss with students the opportunities in the field, such as financial planner.

Figure 1-1 is an important figure because it is the basis of investing decisions--indeed, it is the basis of all finance decisions. It shows the expected return--risk tradeoff available to investors. This diagram should be emphasized because it can be used to generate much useful discussion, including:

- The upward-sloping tradeoff that dominates Investments.
- The role of RF, the risk-free rate of return.
- The importance of risk in all discussions of investing.
- The different types of financial assets available.
- The distinction between realized and expected return.

NOTE: THIS DIAGRAM IS RELEVANT ON THE FIRST DAY OF CLASS, AND THE LAST. IT IS A GOOD WAY TO START THE COURSE, AND TO END IT.

NOTE: Example 1-1 shows wealth accumulations possible from an IRA-type investment. It typically generates considerable student interest to see the ending wealth that can be produced by compounding over time. This type of example can be related to 401 (k) plans, which are quickly becoming of primary importance to many people.

Boxed Inserts

Box 1-1 is a good example of why Investments is a difficult subject. It highlights some statements by the investing community which turned out not to be accurate. This Box Insert is taken from a regular feature of *Smart Money*, and offers a good opportunity to start informing students about the popular press magazines and newspapers available to investors.

ANSWERS TO END-OF-CHAPTER QUESTIONS

1-1. **Investments** are the study of the investment process. An **investment** is defined as the commitment of funds to one or more assets to be held over some future time period.

1-2. Traditionally, the investment decision process has been divided into security analysis and portfolio management.

- **Security analysis** involves the analysis and valuation of individual securities; that is, estimating value, a difficult job at best.

- **Portfolio management** utilizes the results of security analysis to construct portfolios. As explained in Part II, this is important because a portfolio taken as a whole is not equal to the sum of its parts.

1-3. The study of investments is important to many individuals because almost everyone has wealth of some kind and will be faced with investment decisions sometime in their lives. One important area where many individuals can make important investing decisions is that of retirement plans, particularly 401 (k) plans. In addition, individuals often have some say in their retirement programs, such as allocation decisions to cash equivalents, bonds, and stocks.

The dramatic stock market gains of 1995-1999 and the sharp losses in 2000-2002 illustrate well the importance of studying investments. Investors who were persuaded in the past to go heavily, or all, in stocks reaped tremendous gains in their retirement assets as well as in their taxable accounts in 1995-1999 and then often suffered sharp losses in 2000-2002.

1-4. A **financial asset** is a piece of paper evidencing some type of financial claim on an issuer, whether private (corporations) or public (governments).

A **real asset**, on the other hand, is a tangible asset such as gold coins, diamonds, or land.

1-5. Investments, in the final analysis, is simply a risk-return tradeoff. In order to have a chance to earn a return above that of a risk-free asset, investors must take risk. The larger the return expected, the greater the risk that must be taken.

The risk-return tradeoff faced by investors making investment decisions has the following characteristics:

☞ The risk-return tradeoff is upward sloping because investment decisions involve expected returns (vertical axis) versus risk (horizontal axis).

☞ The *vertical intercept of this tradeoff* is RF, the risk-free rate of return available to all investors.

1-6. An investor would expect to earn the risk-free rate of return (RF) when he or she invests in a risk-free asset and is, therefore, at the zero risk point on the horizontal axis in Figure 1-1.

1-7. **Disagree**. Risk-averse investors will assume risk if they expect to be adequately compensated for it.

1-8. The *basic nature of the investment decision* for all investors is the upward-sloping tradeoff between expected return and risk that must be dealt with each time an investment decision is made.

1-9. **Expected return** is the anticipated return for some future time period, whereas **realized return** is the actual return that occurred over some past period.

1-10. In general, the term **risk** as used in investments refers to adverse circumstances affecting the investor's position. Risk can be defined in several different ways. **Risk** is defined here as the chance that the actual return on an investment will differ from its expected return.

Beginning students will probably think of default risk and purchasing power risk very quickly. Some may be aware of *interest rate risk* and *market risk* without fully understanding these concepts (which will be explained in later chapters). Other risks include *political risk* and *liquidity risk*. Students may also remember *financial risk* and business risk from their managerial finance course.

1-11. As explained in Chapter 21, return and risk form the basis for investors establishing their objectives. Some investors think of risk as a constraint on their activities. If so, risk is the most important constraint. Investors face other constraints, including:

- time
- taxes
- transaction costs
- income requirements
- legal and regulatory constraints
- diversification requirements

1-12. All *rational* investors are risk averse because it is not rational when investing to assume risk unless one expects to be compensated for doing so.

All investors do not have the same degree of risk aversion. They are risk averse to varying degrees, requiring different risk premiums in order to invest.

1-13. Investors should determine how much risk they are willing to take before investing—this is their risk tolerance. Based on their risk tolerance, investors can then decide how to invest. Investors may seek to maximize their expected return consistent with the amount of risk they are willing to take.

1-14. The external factors affecting the decision process are:

(1) uncertainty—the great unknown
(2) the global investments arena
(3) the importance of the internet
(4) individual investors vs. institutional investors

The most important factor is uncertainty, the ever-present issue with which all investors must deal. Uncertainty dominates investments, and always will.

1-15. **Institutional investors** include bank trust departments, pension funds, mutual funds (investment companies), insurance companies, and so forth. Basically, these financial institutions own and manage portfolios of securities on behalf of various clienteles.

They affect the investing environment (and therefore individual investors) through their actions in the marketplace, buying and selling securities in large dollar amounts. However, although they appear to have several advantages over individuals (research departments, expertise, etc.); reasonably informed individuals should be able to perform as well as institutions, on average, over time. This relates to the issue of market efficiency.

1-16. Required rates of return differ as the risk of an investment varies. Treasury bonds, generally accepted as being free from default risk, are less risky than corporates, and therefore have a lower required rate of return.

1-17. Investors should be concerned with international investing for several important reasons. First, international investing offers diversification opportunities, and diversification is extremely important to all investors as it provides risk reduction. Second, the returns may be better in foreign markets than in the U. S. markets. Third, many U. S. companies are increasingly affected by conditions abroad--for example, Coca Cola derives most of its revenue and profits from foreign operations. U. S. companies clearly are significantly affected by foreign competitors.

The exchange rate (currency risk) is an important part of all decisions to invest internationally. As discussed in Chapter 6 and other chapters, currency risk affects investment returns, both positively and negatively.

SOME RECOMMENDATIONS WHEN DISCUSSING CHAPTER 1:

1. The expected return-risk tradeoff is fundamental to any understanding of Investments. While it seems to be a straightforward concept, I find that students have problems with it. These problems revolve around understanding the realized tradeoff (what did happen) vs. the anticipated tradeoff (what is expected to happen). I discuss the following relationships to show the various tradeoffs.

   (a) The **expected tradeoff** (illustrated in the text) which is always upward sloping because rational investors must expect to receive a larger return if they are to assume more risk. This is the basis of decision-making when investing.

   (b) The **shorter-term realized tradeoff**, which can be downward sloping. 2000-2002 offers the perfect example. The market declined sharply, and therefore T-bills returned more than stocks.

   (c) The **long-term (for example, 50 or more years) realized tradeoff**, as illustrated by the Ibbotson data and the data in Chapter 6. This tradeoff must slope upward if what is taught in Investments is to make sense. And, of course, it does. Stocks have returned more than bonds, which have returned more than T-bills, over very long periods of time.

   Thus, diagrams for (a) and (c) look similar. The difference is the label on the vertical axis: expected return for (a), and realized return for (c).

2. The decline in the economy and in the stock market in 2000-2002 is a good illustration of risk, and of using the recent past to predict the future. During the late 1990s and into part of 2000, we heard a lot about day traders, and how we were now in a new environment where the old standards of valuation such as profitability were much less important. Since then, of course, many of the high-flyers have crashed and/or gone out of business. Today there is a renewed appreciation for the traditional methods of stock valuation.

Chapter 2: Investment Alternatives

CHAPTER OVERVIEW

The purpose of Chapter 2 is to provide an overview of the major types of financial assets available to investors and discussed in later chapters. It also develops the important alternatives of direct and indirect investing, thereby providing the foundation for Chapter 3.

Obviously, **these assets cannot be discussed in detail in this chapter**; however, instructors can provide additional details as they see fit. What is important here is for students to be exposed to the major types of financial assets early in the course in order for them to understand the basics of alternative investment opportunities. For example, if an instructor were to refer to an example or concept involving a call option or a convertible security, the student may have no idea what is being discussed.

Chapter 2 first discusses the non-marketable alternatives available to investors, such as savings accounts, because many students have encountered these already. Also, they offer a good contrast to the marketable securities, which are the focus of the text.

Money market securities are discussed briefly, primarily because these assets typically are owned by individual investors in the form of money market mutual funds.

Chapter 2 concentrates on the major capital market assets, bonds and stocks, while providing a very brief coverage of derivative securities.

The idea of **indirect investing**--the ownership of investment company shares--is introduced in Chapter 2 in Exhibit 2-1. This is because of the important alternative that such ownership provides all investors. They can turn their funds over to a mutual fund or ETF and not have to make investment decisions. It is desirable for students to think about this alternative early in their study. Many investors will opt for a combination of direct and indirect investing, and this alternative needs to be explained early in the course. Chapter 3 is devoted to indirect investing and provides a detailed discussion of investment companies.

CHAPTER OBJECTIVES

To provide an overview of the major financial assets available to investors and discussed in subsequent chapters.

To explain in some detail the financial assets of importance to most investors, bonds, and stocks.

To explain investors' alternatives, which consist of direct investing, indirect investing, or, as is often done, a combination of the two.