

# Chapter 1

## Introduction

In this chapter we shall (i) discuss the fundamental concepts of financial analysis and planning, (ii) explain the basic objectives and philosophy of the book, and (iii) lay out the structure of the book.

First, the basic definition of financial management is used as a background for discussing financial analysis and planning. Second, the objectives and the philosophy of the book are given in order to specify its unique nature. Finally, the structure of the book is presented to show how these objectives and this philosophy are expanded on in the later chapters.

### 1.1. Financial Management: Analysis and Planning

#### 1.1.1. *Basic Definitions*

Financial management is composed of three of the major policies of a firm: its investment, financing, and dividend policies. During periods of economic uncertainty and/or high inflation, financial management is important for three major reasons: increased investment risk, increased costs of equity and debt financing, and an increased shareholder preference for current rather than future income. Financial management is also important during periods of low inflation and certainty, but it takes on significant importance during periods of uncertainty and high inflation. To achieve sound financial management under such conditions, managers should be well acquainted with the theory and methodology, and with the application of financial analysis and planning to real-world situations.

There are two possible approaches in defining financial management. One approach is a descriptive one; the other is an analytical and operational one. In this book we will take an analytical approach. Also, throughout

the course of the book we will use the terms *financial management and financial analysis and planning* interchangeably.

Of the three major areas of financial management, investment policy is perhaps the most important because it establishes the firm's total assets and their composition, thus determining how the financial community perceives the firm. Financing policy can affect the composition of the firm's optimal capital structure, or mix of sources of funds. That is, this policy determines how each investment should be financed to maintain the firm's current capital structure, or to move the firm toward a better capital mix. The dividend policy of a firm describes the proportion of current earnings to be paid to stockholders in the form of cash dividends. Dividend policy generally provides signals to security holders and builds expectation in the market. Two important considerations here are the firm's objective of *shareholder-wealth maximization* and the *investor's* preferences for *current income*.

In order to provide proper financial management, the manager must fully understand how these three policies overlap and affect one another.

### **1.1.2. Objectives of Financial Management**

The main objective of a firm is to maximize the wealth of its shareholders. Consequently, there are two basic objectives of financial management: to determine a firm's present market value and to delineate ways of improving its future market value. The investment, financing, and dividend policies discussed earlier determine the market value of the firm to its shareholders. From the analysis of these policies, a financial manager can go one step further to suggest desired investment, financing, and dividend policies that will improve the market value of the firm. To do this it is necessary to have a working understanding of realistic financial theory as well as some practical operational experience.

### **1.1.3. Planning Horizon Classification**

Financial management is generally described by the time horizon with which the manager is concerned: short-term or long-term.

Short-term planning and analysis covers periods of less than one year. Short-term management might be described more properly as working capital management, because it involves the determination of an optimal mixture of current assets and current liabilities. Working capital management includes cash management, inventory management, accounts

receivable management, and the like. Although at first glance short-term planning and analysis may seem of lesser importance, it can be quite difficult and important because of the volatility of capital markets during periods of high inflation.

Long-term financial management encompasses essentially all decision making that has an impact over a period of one year or more. This includes the determination of a firm's long-term investment, financing, and dividend policies. Although working capital management is discussed intermittently, this book is primarily concerned with the long-term aspects of financial management. Four mathematical techniques, simultaneous equations, linear programming, goal programming, and the econometric method, are popular approaches to financial planning that we will investigate in detail.

## 1.2. Objectives and Philosophy of the Book

The motivation for writing this book derived from the belief that the many texts available for use in upper-level undergraduate and graduate-level corporate finance courses seem to have either a theoretical or a practical approach. These two divergent approaches need to be integrated, and that is what we attempt to do in this book. We offer a solid integration of theory and practitioner-oriented procedures for attacking the various problems confronted in the current business environment.

With respect to the tools and methods of analysis we offer throughout the text, we urge the reader not to take them as sure-fire cures or perfect methods of analysis. Even the most reasonable approaches can be incorrectly applied or applied in the wrong situations. However, the well-trained manager can always make the necessary modifications to these theories and models to make them usable in actual business situations.

We also do not claim to cover all the topics in corporate finance, though we have covered those we believe to be most important. One purpose of this book is to offer a number of approaches to financial analysis and planning that have been generally accepted in practice and that show reasonable support from generally accepted financial theory.

Another objective is to relate how accounting information, economic data, finance theory, and statistical, econometric, and operations research methods can be used to aid in financial analysis and planning. Computer facilities are helpful in performing the last category mentioned, but they are not critical for a satisfactory understanding of these areas. We believe each

of these areas offers great promise in the preparation of better operating and financial planning for the firm, and each is discussed in turn.

Given that this is a text about corporate finance, it is only proper that we devote considerable effort to the derivation and explanation of that theory. We attempt to integrate theory with practice and critically evaluate it as well. By “critically evaluate” we mean that we devote an entire chapter to the challenges of the numerous irrelevance propositions relating to the dividend and financing decisions, as these challenges have vast implications for financial management.

We hope that this text can add a new approach to financial planning and analysis. Its interdisciplinary approach is a major thrust, integrating the various business disciplines, which the reader has learned in earlier courses, into a corporate finance book. Armed with this type of approach, the managers of the future can hopefully put some of it into action and learn what does and does not work in the business world.

While the student may not be able to master all the methodology and applications discussed in this book, he should be better able to develop an understanding of these topics, so that he will not feel that only the truly brilliant and learned can understand these concepts. This understanding should enable the manager to do a better job than if he did not have such knowledge. It is our hope that the topics discussed in this text will have a “snowball effect,” building upon each other to create a better understanding of financial management.

In the next section we will discuss how we relate the objectives of the book to its structure. This book is divided into five parts, and we will discuss the interrelationships between these parts and the chapters contained in each part. This is done to show how these interrelationships can increase the reader’s knowledge of financial management.

### **1.3. Structure of the Book**

It is the belief of the authors that the teaching of financial analysis and planning is most effective if presented in a certain optimum sequence, which we will follow here.

The value of information cannot be understated in the task of financial analysis and planning. In fact, if no information were available, decision making could become almost impossible. Information is the base for financial decision making, but to make the available information useful,

the analyst must know how to use it. For that reason, we believe it is appropriate to discuss how statistical and mathematical tools can be used to analyze the information.

To accomplish this goal, Part I, Information and Methodology for Financial Analysis, discuss how statistical methods, regression analysis techniques, and other related mathematical tools can be used to analyze accounting information.

In this part, readers will learn: (i) how statistical distributions, both normal and lognormal, can be used to analyze accounting information, (ii) how regression analysis, factor analysis, and discriminant analysis can make financial ratios more useful in financial planning and analysis, and (iii) how mathematics, statistical methods, and regression analysis techniques can be used in interest-rate determination and the use of these interest rates.

In Chapter 2, Accounting Information and Financial Management, statistical methods, regression analysis, and related econometric methodology are used in static and dynamic ratio analysis, and to do break-even analysis. Here important accounting information and basic quantitative methods are reviewed and generalized.

In Chapter 3, Discriminant Analysis and Factor Analysis: Theory and Methods, linear algebra, matrix algebra, and basic multivariate statistical distribution concepts are introduced. Detailed understanding of this chapter is not necessary for an overall understanding of this book.

Chapter 4, Applications of Discriminant Analysis and Factor Analysis in Financial Management, shows how factor analysis can be used to identify important financial ratios and how discriminant analysis can be used for: (i) credit analysis, (ii) bankruptcy prediction, and (iii) bond rating. In addition, methods for estimating default probability are also discussed in some detail.

Chapter 5, Interest Rate, Rate of Return, and Growth Rate, shows the arithmetic, algebraic, and statistical methods used in deterministic and stochastic interest-rate determination and analysis. The concept and effects of inflation on interest rates and equity rates of return are also discussed here.

In summary, Chapters 2 through 5 give the reader an important foundation in the information and methodology for performing sound financial analysis and planning.

Part II, Alternative Finance Theories and the Cost of Capital, discusses how finance theory can make financial planning and analysis more general

and useful. Classical theory, the new classical theory, capital asset pricing theory, and option pricing theory are the four theoretical bases used here. These four theories are interrelated, and therefore are presented together.

Chapter 6, Valuation, Capital Structure, and Risk Premiums, discusses the classical and the new classical theories and other related issues. Chapters 7, 8, 9, and 10, Capital Asset Pricing Model (CAPM), Arbitrage Pricing Model, and Option Pricing Model, show the use of portfolio theory to derive new finance theories for financial management.

In these six chapters, some of the empirical results are obtained by using the information and methods discussed in Part I. Most of the important knowledge needed for practical financial analysis is reinforced by the action taken and learning-by-doing approach.

Part III, Capital Budgeting and Leasing Decisions, shows the use of the cost of capital and cash flow information in capital budgeting and leasing decisions.

Chapter 11, Alternative Cost of Capital Analysis and Estimation, shows the empirical uses of four theories in the determination of the cost of capital. Chapter 12, Capital Budgeting Under Certainty, and Chapter 13, Capital Budgeting Under Uncertainty, introduce a major area of financial decision making, that of capital budgeting. In these two chapters, information, theory, and methodologies from Parts I and II are used in making investment decisions. A linear programming technique is introduced in Chapter 9 in performing capital rationing analysis. Issues related to multi-period capital budgeting and the impact of inflation are also discussed.

Chapter 14 is devoted to an extension of capital budgeting to the lease-buy decisions that a firm faces. Examples are used to illustrate the various methods that can be employed in making these decisions. This chapter also discusses the basic types of leasing arrangement that are available and their implications. In addition, finance theories discussed in Part II are used to show the accounting approach to leasing decisions can be different from an economic approach.

Part IV, Corporate Policies and their Interrelationships, explores mergers, dividend policy, the interaction between investment, financing, and dividend policy, and the use of stochastic dominance in the capital structure analysis with risky debt.

Chapter 15, Mergers: Theory and Evidence, discusses problems related to firm mergers. Two different types of mergers available are defined and contrasted. The theory underlying mergers is observed from an economic and a finance viewpoint. The various accounting treatments of merged firms

and detailed, as are the effect of these treatments on earnings, earnings per share, and other financial ratios. Finally, empirical evidence concerning mergers is examined from a traditional and CAPM viewpoints.

In Chapter 16, Dividend Policy and Empirical Evidence, we discuss an area in financial management that has been the subject of much debate. Dividend Policy is first looked at in a theoretical framework. Modigliani and Miller's arguments concerning firm valuation and its relation to dividend payouts and changes in these payouts are discussed. Gordon and Lintner's high-dividend-high-valuation theory is explained and contrasted with the approach of Modigliani and Miller.

The information content of dividends is also examined in this chapter. In addition, the residual theory approach to dividends and its relation to investment financing are explained. The CAPM framework is applied to dividends, and various forms are discussed in detail. Finally, empirical evidence is shown.

Chapter 17, Interactions of Financing, Investment, and Dividend Policies, discusses the subject of the interrelation of the three major activities of financial management. Also, debt capacity and optimal capital structure are discussed in the context of these interrelationships. In the Appendix of Chapter 17, stochastic dominance and its applications to optimal capital structure analysis are briefly discussed. This method of analysis is applied to analyze the impacts of risky debt on optimal capital structure determination. This appendix is not required for the understanding of later chapters.

Part V discusses the issue of Short-term Financial Decision. Chapter 18 discusses Short-term Financial Analysis and Planning. Chapter 19 discusses Credit Management. Chapter 20 discusses Cash, Marketable Securities, and Inventory Management. Finally, Chapter 21, Elementary Applications of Programming Techniques in Working-Capital Management, introduces the use of linear and goal programming in working-capital management.

Part VI, Financial Planning and Forecasting, covers alternative methods to perform financial planning and forecasting.

Three alternative long-term financial planning and forecasting methods are discussed in Part VI. In Chapter 22, Long-range Financial Planning — A Linear Programming Modeling Approach, we show how Carleton's model can be incorporated with information and theory to carry out, theoretically and empirically, financial planning and forecasting. Chapter 23, Simultaneous-Equation Models for Financial Planning, shows how simultaneous-equation models can be used in financial planning and

forecasting; Anheuser-Busch Coc Inc. is used in an empirical example of this technique. Chapter 24 discusses how to use time-series techniques for analyzing, modeling, and forecasting. Chapter 25, Econometric Approaches to Financial Planning and Forecasting, discusses how econometric specifications and modeling techniques can be employed to empirically analyze financial planning and forecasting decisions.

In summary, Parts I and II give the reader knowledge of the information, theories and methodologies needed for financial planning and analysis. Parts III, IV, V, and VI show how financial planning and analysis can be accomplished analytically and empirically.

### Problem Set

- (1) Discuss the various elements and objectives of financial management, their importance, related concepts and interrelationships.
- (2) Briefly discuss the relationship between short-term financial management and long-term financial management.
- (3) Use a flow chart to discuss and evaluate the structure of this book.

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