金融财务

金融与会计专业核心双语教材

FUNDAMENTALS OF FINANCE

(2nd Edition)

(第2版)

[加拿大] 黄永超 白东辉 著

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Preface

In China, mainstream finance covers primarily International Finance and Money and Banking. Whereas in the western world, the study of finance focuses on three main areas, namely: Investment, Corporate Finance and Financial Institutions Management. In this book, we focus mainly on the first two areas.

Investment covers the characteristics of the financial markets, financial products and their pricing. Corporate Finance deals with the physical asset investments and financial management, valuations and forecast using financial reporting as a basic tool. Both rely on the financial statements. Consequently, this book also features certain aspects of accounting such as tax environment, financial statements and ratios.

As a professional English textbook for Finance and Accounting majors, this book covers topics on Investment such as: time value of money; bond and stock valuations; relationship between risk and return and financial derivatives; as well as topics on Corporate Finance such as capital structure, capital budgeting, financial leverage, dividend policy, working capital management and mergers/acquisitions. And throughout the entire text, emphasis is on financial analysis. It covers a wide range of English terms and terminologies commonly used in the financial field, thereby serving as a text to prepare our readers to advance to more original work in the English language.

This book is to serve as a text for both the undergraduate and graduate levels in Finance and Accounting. Moreover, it can also be used in other commercial disciplines such as Management, Marketing and International Business. We strongly believe that this book will play an important role in helping readers in improving their professional skills in finance, raising their language competence, broadening their horizon on an international scale, and cultivating their creative thinking.

Other than vast improvements on both contents and presentation, this second edition also features full bilingualism. The entire 16 chapters have been scrupulously translated into Chinese. It is hoped that this unique feature will assist readers in better grasping financial concepts written in a foreign language and serve to establish an important bridge in the universal language of finance between the east and the west. The authors find that it is most timely to introduce a fully bilingual text in finance when China is playing an increasingly significant role in the world economy!

About the Authors

Professor Stephen Wong has been teaching a wide range of finance courses at the John Molson School of Business (JMSB), Concordia University, Montreal, Canada since 1981. Prior to that, he taught finance at McGill University, Montreal for its MBA program.

In 2004, he represented JMSB to give courses for the joint CFA(Chartered Financial Analysts)/IMBA program at Beijing Normal University (北京师范大学) in China.

Professor Wong has also been working in Canada in industries ranging from nuclear to pulp and paper for the last 30 years. Since 2003, he has been a consultant to various government agencies and companies in North America and Asia in areas of finance and business development. One main area of his diverse endeavors is to promote Canadian built wood frame houses in China.

Professor Dong Hui Bai is a native of Gansu Province, China. In 1993, he graduated from Xian University of Technology(西安理工大学) with a degree in B. of Engineering.

In the mid nineties, he left China to further his studies in Montreal, Canada and enrolled at Concordia University's JMSB where he progressively obtained a B. of Commerce and then a M. of Science majoring in finance. He is also a designated member of the worldwide Association of Chartered Financial Analysts (CFA).

In 2004, Professor Bai returned to his native province where he teaches at both the Lanzhou University of Finance and Economics (兰州商学院) and the Lanzhou University (兰州大学). Aside from teaching, Professor Bai works in various disciplines of finance such as investment valuations, mergers and acquisitions, risk analysis etc.

He also acts as a consultant and organizes managerial trainings for both the public and private sectors as well as individuals.

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Miss Deng Qiong (Heather), **Miss Hu Qing (Jennifer)** and **Miss Zhu Wenjia (Sarah)**, all 3rd year CFA/IMBA students at Concordia University's John Molson School of Business (JMSB) for translating the entire text from English into Chinese on a voluntary basis. They each had devoted numerous hours to this undertaking in spite of their busy schedules. Other than responsible for their own allocated chapters for translation, they also verified each other's work to ensure quality, accuracy, and consistency of the language.

Miss Zhang Ziqing(Mickey), teaches in Lanzhou University of Finance and Economics and has been exploring and practising bilingual teaching for several years. Her major contribution to the success of this edition includes constructive suggestions for the orderly presentation of subject matters and proof-reading of the entire text.

Without their participation, the successful launching of this second edition of the text would be questionable.

Table of Contents

Chapter 1 What is Finance and Why Study Finance

Key Points of the Chapter

—Goal of a large public company

—Responsibilities of the CFO of a large public company

—Structure of this text book

A. What Is Finance

Finance is the understanding and interpretation of numbers generated in the normal course of business. The results of these interpretations can be used in controlling, executing and planning purposes. Various book-keeping and accounting disciplines generated these numbers and finance uses them. The study of finance encompasses all the responsibilities of a chief financial officer (CFO) or vice president, finance of a large company. Therefore, our assumption is that all readers of this book are either currently in this position or want to be and that all of them will execute their responsibilities diligently and competently (Hopefully, the assumption will be reality in the not too distant future). This book is also suitable for anyone who wants to understand the numbers generated by accounting (financial statements).

It follows that the following two assumptions are made throughout this book:

1)Each reader is the CFO of a large public company (a company whose equities are denominated in shares) or who wants to become one;

2)The CFO 's own personal objective is the same as that of the company for which he works.

B. Goal (Mission) of a Large Public Company

There are many possible goals for a large public company, some are short-term goals and others are long-term goals.

Examples of short-term goals are:

—Ensure the smooth continual operation of the company;

—Maximization of before-tax profit or after-tax profit;

—Maximization of sales (market share).

Examples of long-term goals are:

—Maximization of stockholders' net worth;

—Realize market domination, either monopoly or oligopoly;

—Become a good corporate citizen, etc.

In finance, the usual corporate mission is to maximize stockholders' net worth, implying maximizing stock price. This should become the personal objective of all readers concerned.

C. Responsibilities of a CFO

The following statement summarizes the overall responsibility of a CFO: planning for, acquiring and utilizing funds to maximize the efficiency of the organization's operations. This implies maximizing stock price!

Specific functions include:

—Financial analysis, planning and control;

—Working capital management (current assets and current liabilities);

—Managing company's asset structure (mix between fixed and current assets and capital investments);

—Managing company's financial structure (debt and equity);

—Distribution of corporate earnings to owners (dividend policy);

—Mergers and acquisitions.

D. Structure of This Book

The structure of this book is based on a typical set of financial statements, particularly the balance sheet with emphasis on fixed assets and their financing in the form of long-term liability and preferred/common stock. Depending on the country and regulatory agencies, financial statements could include the following:

—Statement of financial position (Balance sheet);

—Profit and loss statement (Income statement);

—Statement of changes in financial position (The statement of cash flow);

—Supporting statements, schedules;

—Notes to the above statements;

—Opinions of independent auditors or chartered accountants.

The balance sheet and the income statement are the essential components of any set of financial statements and are always present, whichever country or regulatory agencies.

A typical balance sheet is shown below (Table 1 – 1).

Table 1 – 1

Balance Sheet of Company XYZ

Dec. 31, 200X

Current assets	Current liabilities
Gross fixed assets	Long-term debt
Cumulative depreciation	Preferred stocks
Net fixed assets	Common stocks
Investment*	Retained earnings
Total assets	Total liabilities and equities

* Capital projects and investment instruments of other companies.

The LHS (left hand side) in the table has to be equal to the RHS (right hand side) or

$$\text{Total assets} = \text{Total liabilities and equities}$$

As assets have to be financed (purchased), they are demanders of funds while suppliers of funds come in the form of liabilities and equities.

This book examines both demanders and suppliers of funds starting with the supply side.

Concepts of Assets, Liabilities and Equities

The balance sheet presents in a table form all assets, liabilities and equities at a particular point in time. Assets are economic resources. An asset is an item that has the ability or potential to provide future services or benefits to a company. Liabilities are creditors' claims on the resources of a company and typically have a specified amount and date at which they become due. Equities are the owners' claims on the assets of a company. Unlike creditors, the owners only have a residue interest, meaning that the owners are only paid with whatever is left after all other creditors have been paid.

Current assets include cash and other assets that are expected to be turned into cash, or sold, or consumed within approximately one year from the date of the balance sheet. Cash, temporary investments, accounts receivable from customers, and inventories are the most common current assets.

Fixed assets include machinery, land and buildings and other assets that can provide some future services or benefits. Fixed assets are expected to be kept within the company and not depleted for at least one year from the date of the balance sheet.

Current liabilities include short-term loan from banks, accounts payable from suppliers and other debts that are expected to be paid within one year from the date of the balance sheet.

Long-term debts include bonds, mortgages and other debts that are not expected to be paid off in its entirety within one year of the date of the balance sheet.

Equities include preferred stocks, common stocks and retained earnings. We will discuss these in details in Chapter 6.

Please note that the arrangement of the individual items in a balance sheet may differ from company to company and from country to country. Some will list equities first on the left hand side, while others will list current liabilities first. There are also horizontal format and vertical format. However, most of the items listed above will usually appear in a balance sheet, whatever the actual format or layout used.

The Cash Flow Cycle

See Diagram 1-1.

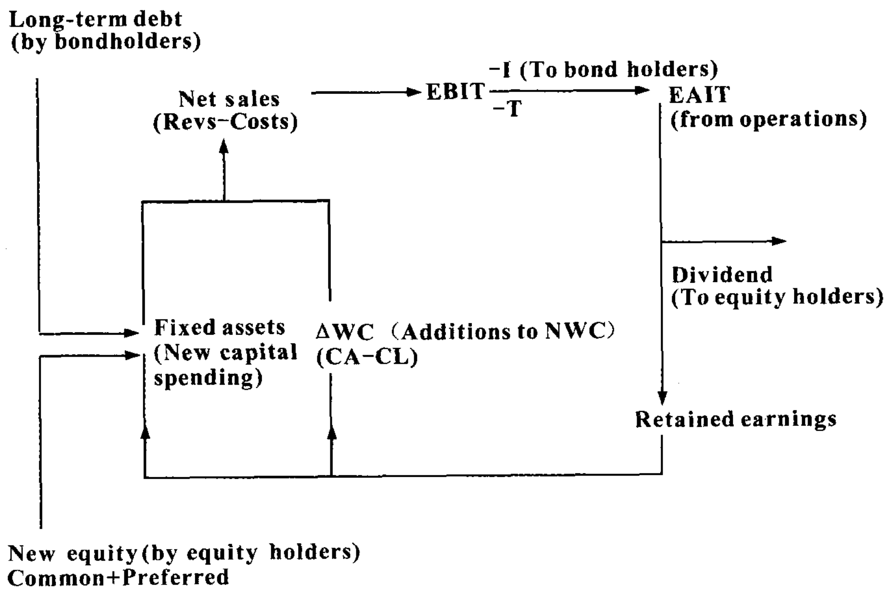

Diagram 1 - 1 The Cash Flow Cycle

Notes:

1) EBIT: earnings before interest and tax;

2) I: interest payments;

3) T: tax;

4) EAIT: earnings after interest and tax;

5) WC: working capital;

6) CA: current assets;

7) CL: current liabilities.

Chapter 2 The Tax Environment

Key Points of the Chapter

—Importance of taxation in finance

—Computation of tax payable and after-tax profit in general

—The Canadian tax system for personal and corporate taxes

—The Chinese tax system for personal and corporate taxes

—Average versus marginal tax rates

A. Background

The understanding of how the tax system works in a given country, be it applied to an individual or a corporation, is very important in finance as taxes levied by governments immensely affect financial decisions.

In Canada, for example, interest income is fully taxable for an individual while dividend income is subject to the gross-up rule, resulting in dividends being taxed far lightly than interest income. It follows that, all things being equal, individuals would prefer receiving dividend than interest income. In fact, effective in 2005, the US has stopped taxing dividend income as the government claimed that taxing dividend constitutes "double taxation".

At the corporate level, financial decisions are made based on cash flows (see Chapter 7 for details) and not accounting profits. Cash flows are always computed on an after-tax basis. For example, if a company needs to have a new manufacturing plant funded, the decision to use stocks, bonds, mortgages or leasing could very well hinge on the tax system.

Tax impacts on different types of financial decisions are discussed and demonstrated throughout this book in chapters to follow.

In this chapter, both the Canadian and Chinese tax systems are reviewed. Even though the two systems give rise to different tax rates, the methods by which after-tax profits are computed for both countries remain essentially the same. It follows that, in spite of the fact that examples given in this book are predominately

Canadian, the same principle applies in a Chinese tax environment.

B. Computation of Tax Payable

For an individual working in any jurisdiction subjected to:

1) average tax rate of t;

2) gross income of R; and

3) deductible expenses of C;

his tax payable is computed as follows:

Taxable income = Gross income − All deductible expenses

$= R - C$

Tax payable = Taxable income × t

$= (R - C) \times t$

After-tax income $= (R - C) \times (1 - t)$

The same mathematical approach also applies to corporations.

C. The Canadian Tax System

In Canada, both individuals and corporations are subject to taxes imposed by both the federal and provincial governments.

For individuals, personal income tax is levied on all income sources, be they from direct employment or investment, even though they have different rules governing their applications.

All the Canadian provinces except Quebec have the federal government collect their personal income tax for them. For corporations, the same arrangement applies.

C. 1 Personal Income Tax

In Canada, personal income tax payable is based on a progressive approach; in other words, the more one makes, the more one pays. This is in marked contrast to places such as Hong Kong where one pays a flat rate of 16% regardless of how much one makes as long as the income is over a certain minimum amount.

As an example of a progressive tax system, for taxation year 2004, the following(Table 2 − 1) were the rates applied to each bracket of taxable income for an individual:

Table 2 - 1 Tax Rates of Personal Income in BC, Canada

Taxable income	Federal tax rate
Up to \$35,000	17%
\$35,000 to \$70,000	22%
Greater than \$70,000	24%

Provincial personal income tax payable is computed as a percentage of federal tax paid ranging from as low as 42% to as high as 70%. In the two provinces with large Chinese populations, Ontario has a rate of 42% and British Columbia 45%.

In Canada, direct employment income after allowable deductions is fully taxable while investment income is subjected to capital gains tax which is levied at 50% of the amount made in investments such as gains in the stock market. The reason for capital gains being taxed at half of their full value is to reward investors for risk taking and facilitates fund raising for corporations.

Depreciation as a tax-deductible expense for individuals or corporations having possession of depreciable assets will be discussed in Chapter 3 and Chapter 8.

C.2 Corporate Tax

Canadian corporations, like individuals, are subjected to taxes levied by both the federal and provincial governments. Corporate taxes are ultimately passed on to consumers through higher prices, to workers through lower wages and to investors through lower returns.

Total (federal and provincial) corporate tax rate for large corporations range from 35% to 40% of taxable income. The exact rate applied depends on the province where their head offices are located.

In Canada, small businesses enjoy a lower tax rate as all businesses, regardless of sector, only pay between 17% to 22%, for their first \$250,000 of taxable income, the exact rate again depends on their head office location. The purpose of a lower tax rate for the first \$250,000 of taxable income is to assist small businesses to get started or remain in operation in their initial years. In these days, small businesses are the prime motor for job creation.

C.3 Average versus Marginal Tax Rates

In making financial decisions, it is often important to distinguish between average and marginal tax rates. An individual's average tax rate is simply his total tax payable divided by his total taxable income or:

$$\text{Average tax rate} = \frac{\text{Total tax payable}}{\text{Total taxable income}}$$

The individual's marginal tax rate is the rate at which he pays tax on the last dollar earned, it is a concept in economics.

Normally, marginal tax rate is relevant for decision making as incremental cash flows to corporations and individuals are used for investment evaluations. Note that for large corporations, their average tax rates approach their marginal tax rates as amounts of taxable income involved are significantly greater than \$250,000.

Example 1

Using the tax rates given for 2004 in Table 2-1, for a resident living in Vancouver, British Columbia, compute his total tax payable if he made \$60,000 of taxable income in that year from direct employment and also \$20,000 in the stock market.

Compute also:

a) His average tax rate for that year; and

b) His marginal tax rate for an extra dollar made.

Solution to Example 1

For the 2004 taxation year, the federal rates were shown in Table 2-1.

For a resident of BC with a taxable income from direct employment of \$60,000:

$$\begin{aligned}\text{Federal tax payable} &= \$[35{,}000 \times 0.17 + (60{,}000 - 35{,}000) \times 0.22] \\ &= \$11{,}450\end{aligned}$$

$$\text{Provincial tax payable for BC} = \$11{,}450 \times 0.45 = \$5{,}152.5$$

$$\begin{aligned}\text{Total tax payable from direct employment} &= \$(11{,}450 + 5{,}152.5) \\ &= \$16{,}602.5\end{aligned}$$

$$\begin{aligned}\text{Total capital gain tax payable} &= \$20{,}000 \times 0.50 \times 0.22 \times (1 + 0.45) \\ &= \$3{,}190\end{aligned}$$

Therefore, total tax payable from both direct employment and investment