FIFTH EDITION

Corporate FINANCE

THEORY AND PRACTICE

PIERRE VERNIMMEN / PASCAL QUIRY
MAURIZIO DALLOCCHIO
YANN LE FUR / ANTONIO SALVI

WILEY

Corporate Finance

"I discovered finance with 'The Vernimmen' about 30 years ago. Since then the different versions have accompanied me throughout my career and throughout the world. Not only was the alignment of the successive editions looking good in my different offices but I must confess I have opened and cherished each of them. Whether an investment banker, a CFO in a universal bank or more simply a world banker . . . "

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Laurence Debroux, Member of the Executive Board/CFO of Heineken

"*Corporate Finance* is a very useful reference book for students and practitioners, it will help both to understand the principles of the financial markets and their practical application in today's complex environment. The book's approach is both logical and sequential and presents some interesting cases that make study easier and more stimulating."

Gabriele Galateri, Chairman of Generali, former Chairman of Telecom Italia and Mediobanca, former CEO of FIAT

"Vernimmen provided people like me who were new to the world of corporate finance a perfect mix of theory and practical examples to help them develop long-lasting financial concepts. The book is a written manual for finance, explaining the fundamentals in a very thought-provoking way, making it intriguing to delve into the complexities. This book is a must-have in your personal library as you will refer back to it even after years."

Sharat Gangwani, Business Response Analyst at Citadel LLC

"The 'Vernimmen' is the perfect reference corporate finance book. I used it in my classes, looked back into it during my internships, use it again now to deep dive into corporate finance for my thesis and know I will keep interacting with it later in my career."

André Geha, Graduate Student at MIT Sloan

"Vernimmen's *Corporate Finance* is an outstanding clear and complete manual, a wonderful merger of practice and theory. Its coverage of the market aspects of corporate finance distinguishes its content, but its treatment of all the material makes it essential reading for the student, financier or industrialist."

Howard Jones, Senior Research Fellow in Finance at Saïd Business School, University of Oxford

"The Vernimmen: proof that an outstanding teaching approach and genuine accessibility are fully compatible with comprehensive and sharp analyses."

Christian Mulliez, Executive Vice-President and Chief Financial Officer at L'Oréal

"The book itself covers all the important techniques that a financial manager must have in his repertoire of tools. The exposition is clear and concise and, most importantly, relies on commonsense reasoning throughout. This is not a book with obscure formulae, yet is still rigorous and at the same time a model of clarity."

Richard Roll, Joel Fried Professor of Applied Finance at UCLA Anderson

Pierre Vernimmen

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Pierre Vernimmen, who died in 1996, was both an M&A dealmaker (he advised Louis Vuitton on its merger with Moët Hennessy to create LVMH, the world luxury goods leader) and a finance teacher at HEC Paris. His book *Finance d'Entreprise* was, and still is, the top-selling financial textbook in French-speaking countries and is the forebear of *Corporate Finance: Theory and Practice.*

Summary

A detailed table of contents can be found on page 951

Preface

This book aims to cover the full scope of corporate finance as it is practised today worldwide.

A way of thinking about finance

We are very pleased with the success of the first three editions of the book. It has encouraged us to retain the approach in order to explain corporate finance to students and professionals. There are four key features that distinguish this book from the many other corporate finance textbooks available on the market today:

- Our strong belief that financial analysis is part of corporate finance. Pierre Vernimmen, who was mentor and partner to some of us in the practice of corporate finance, understood very early on that a good financial manager must first be able to analyse a company's economic, financial and strategic situation, and then value it, while at the same time mastering the conceptual underpinnings of all financial decisions.
- *Corporate Finance* is neither a theoretical textbook nor a practical workbook. It is a book in which theory and practice are constantly set off against each other, in the same way as in our daily practice as investors at Monestier Capital, DGPA and Natixis, as board members of several listed and unlisted companies, and as teachers at HEC Paris and Bocconi business schools.
- Emphasis is placed on concepts intended to give you an understanding of situations, rather than on techniques, which tend to shift and change over time. We confess to believing that the former will still be valid in 20 years' time, whereas the latter will, for the most part, be long forgotten!
- Financial concepts are international, but they are much easier to grasp when they are set in a familiar context. We have tried to give examples and statistics from all around the world to illustrate the concepts.

The five sections

This book starts with an introductory chapter reiterating the idea that corporate financiers are the bridge between the economy and the realm of finance. Increasingly, they must play the role of marketing managers and negotiators. Their products are financial securities that represent rights to the firm's cash flows. Their customers are bankers and investors. A good financial manager listens to customers and sells them good products at high prices. A good financial manager always thinks in terms of value rather than costs or earnings.

Section I goes over the basics of financial analysis, i.e. understanding the company based on a detailed analysis of its financial statements. We are amazed at the extent to

which large numbers of investors neglected this approach during the latest stock-market euphoria. When share prices everywhere are rising, why stick to a rigorous approach? For one thing, to avoid being caught in the crash that inevitably follows.

The return to reason has also returned financial analysis to its rightful place as a cornerstone of economic decision-making. To perform financial analysis, you must first understand the firm's basic financial mechanics (Chapters 2–5). Next you must master the basic techniques of accounting, including accounting principles, consolidation techniques and certain complexities (Chapters 6 and 7), based on international (IFRS) standards now mandatory in over 80 countries, including the EU (for listed companies), Australia, South Africa and accepted by the SEC for US listing. In order to make things easier for the newcomer to finance, we have structured the presentation of financial analysis itself around its guiding principle: in the long run, a company can survive only if it is solvent and creates value for its shareholders. To do so, it must generate wealth (Chapters 9 and 10), invest (Chapter 11), finance its investments (Chapter 12) and generate a sufficient return (Chapter 13). The illustrative financial analysis of the Italian appliance manufacturer Indesit will guide you throughout this section of the book.

Section II reviews the basic theoretical knowledge you will need to make an assessment of the value of the firm. Here again, the emphasis is on reasoning, which in many cases will become automatic (Chapters 15–19): efficient capital markets, the time value of money, the price of risk, volatility, arbitrage, return, portfolio theory, present value and future value, market risk, beta, etc. Then we review the major types of financial securities: equity, debt and options, for the purposes of valuation, along with the techniques for issuing and placing them (Chapters 20–25).

Section III is devoted to value, to its theoretical foundations and to its computation. Value is the focus of any financier, both its measure and the way it is shared. Over the medium term, creating value is, most of the time, the first aim of managers (Chapters 26–31).

In **Section IV**, "Corporate financial policies", we analyse each financial decision in terms of:

- value in the context of the theory of efficient capital markets;
- balance of power between owners and managers, shareholders and debtholders (agency theory);
- communication (signal theory).

Such decisions include choosing a capital structure, investment decisions, cost of capital, dividend policy, share repurchases, capital increases, hybrid security issues, etc.

In this section, we draw your attention to today's obsession with earnings per share, return on equity and other measures whose underlying basis we have a tendency to forget and which may, in some cases, be only distantly related to value creation. We have devoted considerable space to the use of options (as a technique or a type of reasoning) in each financial decision (Chapters 32–39).

When you start reading **Section V**, "Financial management", you will be ready to examine and take the remaining decisions: how to create and finance a start-up, how to organise a company's equity capital and its governance, buying and selling companies, mergers, demergers, LBOs, bankruptcy and restructuring (Chapters 40–47). Lastly, this section presents working capital management, cash management, the management of the firm's financial risks and its operational real-estate assets (Chapters 48–51).

Last but not least, the epilogue addresses the question of the links between finance and strategy.

Suggestions for the reader

To make sure that you get the most out of your book, each chapter ends with a summary and a series of problems and questions (over 800 with the solutions provided). We've used the last page of the book to provide a crib sheet (the nearly 1000 pages of this book summarised on one page!). For those interested in exploring the topics in greater depth, there is an end-of-chapter bibliography and suggestions for further reading, covering fundamental research papers, articles in the press, published books and websites. A large number of graphs and tables (over 100!) have been included in the body of the text and these can be used for comparative analyses. Finally, there is a fully comprehensive index.

The masculine pronoun has been used throughout this book simply for convenience and brevity. This use is not intended to be discriminatory in any way.

An Internet site with huge and diversified content

www.vernimmen.com provides free access to tools (formulas, tables, statistics, lexicons, glossaries), resources that supplement the book (articles, prospectuses of financial transactions, financial figures for over 16 000 European, North American and emerging countries, listed companies, thesis topics, thematic links, a list of must-have books for your bookshelf, an Excel file providing detailed solutions to all of the problems set in the book), plus problems, case studies and quizzes for testing and improving your knowledge. There is a letterbox for your questions to the authors (we reply within 72 hours, unless, of course, you manage to stump us!). There are questions and answers and much more. The site has its own internal search engine, and new services are added regularly.

A teachers' area provides teachers with free access to case studies, slides and an Instructor's Manual, which gives advice and ideas on how to teach all of the topics discussed in the book.

A free monthly newsletter on corporate finance

Since (unfortunately) we can't bring out a new edition of this book every month, we have set up the *Vernimmen.com Newsletter*, which is sent out free of charge to subscribers via the web. It contains:

- A conceptual look at a topical corporate finance problem (e.g. accounting for operating and capital leases, financially managing during a deflation phase).
- Statistics and tables that you are likely to find useful in the day-to-day practice of corporate finance (e.g. corporate income tax rates, debt ratios in LBOs).
- A critical review of a financial research paper with a concrete dimension (e.g. *The real effect of corporate cash, why don't US issuers demand European fees for their IPOs?*).
- A question left on the vernimmen.com site by a visitor plus a response (e.g. *Why do successful groups have such a low debt level? What is an assimilation clause?*).

Subscribe to www.vernimmen.com and become one of the many readers of the *Vernimmen.com Newsletter.*

And lastly a Facebook page

We publish daily comments on financial news that we deem to be of interest, answer questions from web users and publish finance- and business-related quotes. These could come in useful when preparing for a job interview or serve as food for thought for those of you wanting to take time out and think about what's going on in the corporate and financial world.

Many thanks

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We hope that you will gain as much enjoyment from your copy of this book – whether you are a new student of corporate finance or are using it to revise and hone your financial skills – as we have had in editing this edition and in expanding the services and products that go with it.

We wish you well in your studies!

Paris, July 2017

Pascal Quiry — *Maurizio Dallocchio*

Yann Le Fur — *Antonio Salvi*

Frequently used symbols

A_K^N	Annuity factor for N years and an interest rate of k
ABCP	Asset-Backed Commercial Paper
ADR	American Depositary Receipt
AGM	Annual General Meeting
APT	Arbitrage Pricing Theory
APV	Adjusted Present Value
BIMBO	Buy-In Management Buy-Out
BV	Book Value
BV/S	Book Value per Share
CAGR	Compound Annual Growth Rate
Capex	Capital Expenditures
CAPM	Capital Asset Pricing Model
CB	Convertible Bond
CD	Certificate of Deposit
CE	Capital Employed
CFROI	Cash Flow Return On Investment
COV	Covariance
CVR	Contingent Value Right
D	Debt, net financial and banking debt
d	Payout ratio
DCF	Discounted Cash Flows
DDM	Dividend Discount Model
DECS	Debt Exchangeable for Common Stock; Dividend Enhanced Convertible Securities
Div	Dividend
DPS	Dividend Per Share
EBIT	Earnings Before Interest and Taxes
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortisation
ECP	European Commercial Paper
EGM	Extraordinary General Meeting
EMTN	Euro Medium-Term Note
ENPV	Expanded Net Present Value
EONIA	Euro OverNight Index Average
EPS	Earnings Per Share
E(r)	Expected return
ESOP	Employee Stock Ownership Programme
EURIBOR	Euro Interbank Offered Rate

EV	Enterprise Value
EVA	Economic Value Added
f	Forward rate
F	Cash flow
FA	Fixed Assets
FASB	Financial Accounting Standards Board
FC	Fixed Costs
FCF	Free Cash Flow
FCFE	Free Cash Flow to Equity
FCFF	Free Cash Flow to Firm
FE	Financial Expenses
FIFO	First In, First Out
FRA	Forward Rate Agreement
g	Growth rate
GAAP	Generally Accepted Accounting Principles
GDR	Global Depositary Receipt
i	After-tax cost of debt
IAS	International Accounting Standards
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standard
IPO	Initial Public Offering
IRR	Internal Rate of Return
IRS	Interest Rate Swap
IT	Income Taxes
k	Cost of capital, discount rate
k_D	Cost of debt
k_E	Cost of equity
K	Option strike price
LBO	Leveraged Buyout
LBU	Leveraged Build-Up
L/C	Letter of Credit
LIBOR	London Interbank Offered Rate
LIFO	Last In, First Out
LMBO	Leveraged Management Buyout
ln	Naperian logarithm
LOI	Letter Of Intent
m	Contribution margin
MOU	Memorandum Of Understanding
MTN	Medium-Term Notes
MVA	Market Value Added
n	Years, periods
N	Number of years
$N(d)$	Cumulative standard normal distribution
NA	Not Available
NAV	Net Asset Value
NM	Not Meaningful
NOPAT	Net Operating Profit After Tax
NPV	Net Present Value
OTC	Over The Counter

P	Price
PBO	Projected Benefit Obligation
PBR	Price-to-Book Ratio
PBT	Profit Before Tax
P/E ratio	Price/Earnings ratio
PEPs	Personal Equity Plans
PERCS	Preferred Equity Redemption Cumulative Stock
PSR	Price-to-Sales Ratio
P-to-P	Public-to-Private
PV	Present Value
PVI	Present Value Index
QIB	Qualified Institutional Buyer
r	Rate of return, interest rate
r_F	Risk-free rate
r_M	Expected return of the market
RNAV	Restated Net Asset Value
ROA	Return On Assets
ROCE	Return On Capital Employed
ROE	Return On Equity
ROI	Return On Investment
RWA	Risk-Weighted Assessment
S	Sales
SEC	Securities and Exchange Commission
SEO	Seasoned Equity Offering
SPV	Special Purpose Vehicle
STEP	Short-Term European Paper
t	Interest rate, discount rate
T	Time remaining until maturity
T_c	Corporate tax rate
TSR	Total Shareholder Return
UCITS	Undertakings for Collective Investment in Transferable Securities
V	Value
V_D	Value of Debt
V_E	Value of Equity
$V(r)$	Variance of return
VAT	Value Added Tax
VC	Variable Cost
WACC	Weighted Average Cost of Capital
WC	Working Capital
y	Yield to maturity
YTM	Yield To Maturity
Z	Scoring function
ZBA	Zero Balance Account
β or β_E	Beta coefficient for a share or an equity instrument
β_A	Beta coefficient for an asset or unlevered beta
β_D	Beta coefficient of a debt instrument
$\sigma(r)$	Standard deviation of return
ρ(A, B)	Correlation coefficient of return between shares A and B

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Section I
FINANCIAL ANALYSIS

Part One

Fundamental concepts in financial analysis

The following six chapters provide a gradual introduction to the foundations of financial analysis. They examine the concepts of cash flow, earnings, capital employed and invested capital, and look at the ways in which these concepts are linked.

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Section V
FINANCIAL MANAGEMENT

Part One
Corporate governance and financial engineering

In this part, we will examine the issues an investment banker deals with on a daily basis when assisting a company in its strategic decisions, which include:

- organizing a group;
- launching an IPO (initial public offering);
- selling assets, a subsidiary or the company;
- merging or demerging;
- restructuring and more.

We do hope that our readers will not spend whole nights on these topics, unlike investment bankers!

The latter will also find in this part some ideas on the financing of start-ups. Perhaps not their cup of tea unless they have to reinvent themselves!

As you will soon realise, financial engineering raises and solves many questions of corporate governance.

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Part Two

Managing working capital, cash flows, financial risks and real estate

In this section, readers will understand that what may at first glance appear to be of little interest is in fact crucial for the sound financial management of a firm. The management of flows is one of the elements that optimise working capital and the reduction of capital employed by the firm. It makes it possible to "track cash", which is an advance indicator of results and of potential operational problems. Management of financial risks is essential in a complex and volatile world in order to prevent such risks impacting on the firm, or threatening its development or even its survival. Finally, managing real estate, especially operating real estate, can be a strategic matter for some firms.

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Chapter 1

What is corporate finance?

To whet your appetite . . .

The primary role of the financial manager is to ensure that his company has a sufficient supply of capital.

The financial manager is at the crossroads of the real **economy**, with its industries and services, and the world of **finance**, with its various financial markets and structures.

There are two ways of looking at the financial manager's role:

- a buyer of capital who seeks to minimise its cost, i.e. the traditional view;
- a seller of financial securities who tries to maximise their value. This is the view we will develop throughout this book. It corresponds, to a greater or lesser extent, to the situation that exists in a capital market economy, as opposed to a credit-based economy.

At the risk of oversimplifying, we will use the following terminology in this book:

- the **financial manager** or **chief financial officer** (CFO) is responsible for financing the firm and acts as an intermediary between the financial system's institutions and markets, on the one hand, and the company, on the other;
- the **business manager** invests in plant and equipment, undertakes research, hires staff and sells the firm's products, whether the firm is a manufacturer, a retailer or a service provider;
- the **financial investor** invests in financial securities. More generally, the financial investor provides the firm with financial resources, and may be either an equity investor or a lender.

Section 1.1

The financial manager is first and foremost a salesman . . .

1/ The financial manager's job is not only to "buy" financial resources . . .

The financial manager is traditionally perceived as a buyer of capital. He negotiates with a variety of investors – bankers, shareholders, bond investors – to obtain funds at the lowest possible cost.

Transactions that take place on the **capital markets** are made up of the following elements:

- a commodity: money;
- a price: the interest rate in the case of debt; dividends and capital gains in the case of equities.

In the traditional view, the financial manager is responsible for the company's financial procurement. His job is to minimise the price of the **commodity** to be purchased, i.e. the **cost of the funds** he raises.

We have no intention of contesting this view of the world. It is obvious and is confirmed every day, in particular in the following types of negotiations:

- between corporate treasurers and bankers, regarding interest rates and value dates applied to bank balances (see Chapter 49);
- between chief financial officers and financial market intermediaries, where negotiation focuses on the commissions paid to arrangers of financial transactions (see Chapter 25).

2/ . . . BUT ALSO TO SELL FINANCIAL SECURITIES

That said, let's now take a look at the financial manager's job from a different angle:

- he is not a buyer but a **seller**;
- his aim is not to reduce the cost of the raw material he buys but to **maximise a selling price**;
- he practises his art not on the capital markets, but on the market for financial instruments, be they loans, bonds, shares, etc.

We are not changing the world here; we are merely looking at the same market from another point of view:

- the **supply** of financial securities corresponds to the demand for capital;
- the **demand** for financial securities corresponds to the supply of capital;
- the **price**, the point at which the supply and demand for financial securities are in equilibrium, is therefore the **value of security**. In contrast, the equilibrium price in the traditional view is considered to be the interest rate, or the cost of funds.

We can summarise these two ways of looking at the same capital market in the following table:

Analysis/Approach	Financial approach: financial manager as salesman	Traditional approach: financial manager as purchaser
Market	Securities	Capital
Supply	Issuers	Investors
Demand	Investors	Issuers
Price	Value of security	Interest rate

Depending on your point of view, i.e. traditional or financial, supply and demand are reversed, as follows:

- when the **cost of money** – the interest rate, for example – **rises**, demand for funds is greater than supply. In other words, the supply of financial securities is greater than the demand for financial securities, and **the value of the securities falls**;
- conversely, when **the cost of money falls**, the supply of funds is greater than demand. In other words, the demand for financial instruments is greater than their supply and **the value of the securities rises**.

The cost of capital and the value of the securities vary in opposite directions. We can summarise with the following theorem, fundamental to this entire book:

Minimising financing cost is synonymous with maximising the value of the underlying securities.

For two practical reasons, one minor and one major, we prefer to present the financial manager as a seller of financial securities.

The minor reason is that viewing the financial manager as a salesman trying to sell his products at the highest price casts his role in a different light. As the merchant does not want to sell low-quality products but products that respond to the needs of his customers, so the financial manager must understand his capital suppliers and satisfy their needs without putting the company or its other capital suppliers at a disadvantage. **He must sell high-quality products at high prices.** But he can also repackage his product to better meet investor expectations. Indeed, financial markets are subject to fashion: in one period convertible bonds (see Chapter 2) can be easily placed; in another period it will be syndicated loans (see Chapter 21) that investors will welcome.

The more important reason is that when a financial manager applies the traditional approach of minimising the cost of the company's financing too strictly, erroneous decisions may easily follow. The traditional approach can make the financial manager **short-sighted**, tempting him to take decisions that emphasise the short term to the detriment of the long term.

For instance, choosing between a capital increase, a bank loan and a bond issue with lowest cost as the only criterion reflects flawed reasoning. Why? Because suppliers of capital, i.e. the buyers of the corresponding instruments, do not all face the same level of risk.

The investor's risk must be taken into account in evaluating the cost of a source of financing.

The cost of two sources of financing can be compared only when the suppliers of the funds incur the same level of risk.

All too often we have seen managers or treasurers assume excessive risk when choosing a source of financing because they have based their decision on a single criterion: the respective cost of the different sources of funds. For example:

- increasing short-term debt on the pretext that short-term interest rates are lower than long-term rates can be a serious mistake;
- granting a mortgage in return for a slight decrease in the interest rate on a loan can be very harmful for the future;
- increasing debt systematically on the sole pretext that debt costs less than equity capital jeopardises the company's prospects for long-term survival.

We will develop this theme further throughout the third part of this book, but we would like to warn you now of the pitfalls of faulty financial reasoning. **The most dangerous thing a financial manager can say is, "It doesn't cost anything." This sentence should be banished and replaced with the following question: "What is the impact of this action on value?"**

Section 1.2

. . . OF FINANCIAL SECURITIES . . .

Let's now take a look at the overall concept of a financial security, the product created by the financial manager.

1/ ISSUANCE OR CREATION OF SECURITIES

There is a great variety of financial instruments, each of which has the following characteristics:

- it is a contract . . .
- . . . executed over time, and . . .
- its value derives solely from the series of cash flows it represents.

Indeed, from a mathematical and more theoretical viewpoint, a financial instrument is defined as a **schedule of future cash flows**.

Holding a financial security is the same as holding the right to receive the cash flows, as defined in the terms and conditions of the issue that gave rise to the financial instrument. Conversely, for the issuer, creating a financial instrument is the same as committing to paying out a series of cash flows. In return for this right to receive cash flows or for taking on this commitment, the company will issue a security at a certain price, enabling it to raise the funds needed to run its business.

A financial security is a contract . . .

You've undoubtedly heard people say that the financial manager's stock-in-trade is "paper". Computerisation has now turned financial instruments from paper documents into intangible book entries, reducing them to the information they contain, i.e. the contract. The essence of finance is, and will always be, **negotiation** between an issuer seeking new funds and the investors interested in buying the instruments that represent the underlying obligations. And negotiation means markets, be they credit markets, bond markets, stock markets, etc.

. . . executed over time . . .

Time, or the term of the financial security, introduces the notion of time remuneration and **risk**. A debt instrument that promises cash flows over time, for example, entails risk, even if the borrower is very creditworthy. This seems strange to many people who consider that "a deal is a deal" or "a man's word is his bond". Yet, experience has shown that a wide variety of risks can affect the payment of those cash flows, including political risk, strikes, natural disasters and other events.

. . . and materialised by cash flows.

Further on in this book you will see that financial logic is used to analyse and choose among a firm's investment options. The financial manager transforms flows of goods and services, deriving from the company's industrial and other business assets, into cash flows. You will soon understand that the world of finance is one of **managing rights on the one hand and commitments on the other, both expressed in terms of cash flows**.

In a market for financial instruments, it is not the actual flows that are sold, but the rights associated with them. The investor, i.e. the buyer of the security, acquires the rights granted by the instrument. The issuing company assumes contractual obligations deriving from the instrument, regardless of who the owner of the instrument is.

For example, commodity futures markets make it possible to perform purely financial transactions. You can buy sugar "forward", via financial instruments called futures contracts, knowing full well that you will never take delivery of the sugar into your warehouse. Instead, you will close out the position prior to maturity. The financial manager thus trades on a market for real goods (sugar), using contracts that can be unwound prior to or at maturity.

A property investor acts similarly. After acquiring real property, the value of which fluctuates, he can lease it or resell it. Viewed this way, real property is as fungible as any other property and is akin to a financial asset.

Clearly, these assets exhibit different degrees of "financiality". To take the argument one step further, you turn a painting into a financial instrument when you put it in your safe in the hope of realising a gain when you sell it.

The distinction between a real asset and a financial asset is therefore subtle but fundamental. It lies either in the nature of the contract or in the investor's motivation, as in the example of the painting.

Lastly, the purchase of a financial security differs from the purchase of a durable good in that the financial security is undifferentiated. A large number of investors can buy the same financial security. In contrast, acquiring a specific office building or building an industrial plant is a very specific, unique investment.

In conclusion, every financial instrument represents a series of cash flows to be received according to a set timetable. Mathematically, it can be expressed as a series of future cash flows F_1, F_2, F_3, F_4, . . ., F_n over n periods.

2/ Types of financial securities

(a) Debt instruments (Chapters 20 and 21)

The simplest financial instrument is undoubtedly the contract that ties a lender (investor) to a borrower (company). It represents a very strong commitment, not only to repay, but to repay with interest. Loans become financial securities when they are made negotiable on a secondary market (see page 7) and "listed". Bonds and commercial paper fall into this category.

A bond is a negotiable debt security representing a fraction of a borrowing contracted by a company, a financial institution or a sovereign state (gilts in the UK, Bunds in Germany, etc.).

Commercial paper is a negotiable debt security representing a fraction of a short-term borrowing (generally between one day and two years) contracted by a company. If the company is a bank, the security will be called a **certificate of deposit**. Short-term sovereign debt instruments go by different names depending on the country; in Spain, for example, they are called *Bonos del Estado*, while they are called *Treasury Bills* in the US.

Strictly speaking, investors in these securities do not assume any industrial risk. **Their return is set contractually** and may be fixed or floating (i.e. variable). If it is floating, it will be indexed on an interest rate and not on the results of the company.

In Chapter 21 we will see that the lender nevertheless assumes certain risks, namely the failure of the borrower to honour the debt contract.

(b) Equity securities (Chapter 22)

Equity represents the capital injected into a company by an investor who bears the full risk of the company's industrial undertakings in return for a share of the profits.

If the company is organised under a limited liability structure, then the equity is divided into **shares**. The risk borne by the shareholders is limited to the amount they contribute to the firm. Unless otherwise noted, we will be dealing in this book with finance as it relates to the various forms of "limited companies".

Shareholders' equity is a source of financing for the enterprise, but the related financial security, the share, guarantees the investor neither a fixed level of income nor repayment. The shareholder can realise his investment only by selling it to someone else. The investor obtains certain corporate rights, however: a claim on the company's earnings and – via his voting rights – management oversight.

(c) Other securities (Chapter 24)

As you will discover in Chapter 24, financial engineering specialists have invented hybrid securities that combine the characteristics of the two categories discussed above. Some securities have the look and feel of equity from the point of view of the company, but the corresponding cash flows are fixed, at least partially. Others instruments have yields that are dependent on the performance of the company, but are considered loans, not equity capital. Financial imagination knows no bounds. Keep in mind that these instruments are like the cherry on the top. As such, we won't tempt you with them until Chapter 24!

There is a specific type of financial instrument, however, **the option**, whose associated cash flows are actually less "important" to the investor than the rights the option conveys. This instrument grants the right, but not the obligation, to do something.

In sum, financial instruments carry a wide spectrum of characteristics, which, from the investor's point of view, ranges from rights to commitments.

Section 1.3

. . . VALUED CONTINUOUSLY BY THE FINANCIAL MARKETS

Our view of finance can take shape only in the context of well-developed financial markets. But before examining the technical characteristics of markets (Section II of this book), let's spend a moment on definitions.

1/ From the primary market to the secondary market

Once launched by its issuer, a financial security lives a life of its own. It is sold from one investor to another, and it serves as support for other transactions. The instrument itself evolves, but the terms of the contract under which it was issued do not.

The life of a financial security is intimately connected with the fact that it can be bought or sold at any moment. For example, shares issued or created when a company is founded can later be floated on a stock exchange, just as long-term bonds may be used by speculators for short-term strategies.

The new issues market (i.e. creation of securities) is called the primary market. Subsequent transactions involving these securities take place on the **secondary market**. Both markets, like any market, are defined by two basic elements: the product (the security) and the price (its value).

From the point of view of the company, the distinction between the primary and secondary markets is fundamental. **The primary market is the market for "new" financial products**, from equity issues to bond issues and everything in between. It is the market for newly minted financial securities where the company can raise fresh money.

Conversely, the secondary market is the market for "used" financial products. Securities bought and sold on this market have already been created and are now simply changing hands, without any new securities being created and consequently without any new money for the company.

The primary market enables companies, financial institutions, governments and local authorities to obtain financial resources by issuing securities. These securities are then listed and traded on secondary markets. The job of the secondary market is to ensure that securities are properly priced and traded. This is the essence of **liquidity**: facilitating the purchase or sale of a security.

The distinction between primary and secondary markets is conceptual only. The two markets are not separated from each other. A given financial investor can buy either existing shares or new shares issued during a capital increase, for example.

If there is often more emphasis placed on the primary market, it is because the function of the financial markets is, first and foremost, to ensure equilibrium between financing needs and the sources of finance. Secondary markets, where securities can change hands, constitute a kind of financial "innovation".

2/ The function of the secondary market

Financial investors do not intend to remain invested in a particular asset indefinitely. Even before they buy a security, they begin thinking about how they will **exit**. As a result, they are constantly evaluating whether they should buy or sell such and such an asset.

Monetising is relatively easy when the security is a short-term one. All the investor has to do is wait until maturity. The need for an exit strategy grows with the maturity of the investment and is greatest for equity investments, whose maturity is unlimited. The only way a shareholder can exit his investment is to sell his shares to someone else.

As an example, the successful business person who floats his company on the stock exchange, thereby selling part of his shares to new shareholders, diversifies his own portfolio, which before flotation was essentially concentrated in one investment.

The secondary market makes the investor's investments liquid.

Liquidity refers to the ability to convert an instrument into cash quickly and without loss of value. It affords the opportunity to trade a financial instrument at a "listed" price and in large quantities without disrupting the market. An investment is liquid when an investor can buy or sell it in large quantities without causing a change in its market price.

The secondary market is therefore a **zero-sum game** between investors, because what one investor buys, another investor sells. In principle, the secondary market operates completely independently from the issuer of the securities.

A company that issues a bond today knows that a certain amount of funds will remain available in each future year. This knowledge is based on the bond's amortisation schedule. During that time, however, the investors holding the bonds will have changed.

Secondary market transactions do not show up in macroeconomic statistics on capital formation, earning them the scorn of some observers who claim that the secondary market does nothing to further economic development, but only bails out the initial investors.

We believe this thinking is misguided and reflects great ignorance about the function of secondary markets in the economy. Remember that a financial investor is constantly comparing the primary and secondary markets. He cares little whether he is buying a "new" or a "used" security, so long as they have the same characteristics.

The secondary market plays the fundamental role of valuing securities.

In fact, the quality of a primary market for a security depends greatly on the quality of its secondary market. Think about it: who would want to buy a financial security on the primary market, knowing that it will be difficult to sell it on the secondary market?

The secondary market determines the price at which the company can issue its securities on the primary market, because investors are constantly deciding between existing investments and proposed new investments.

We have seen that it would be a mistake to think that a financial manager takes no interest in the secondary market for the securities issued by his company. On the contrary, it is on the secondary market that his company's financial "raw material" is priced every day. When the raw material is equities, there is another reason the company cannot afford to turn its back on the secondary market: this is where investors trade the voting rights in the company's affairs and, by extension, control of the company.

3/ DERIVATIVE MARKETS: FUTURES AND OPTIONS

Derivative markets are where securities that derive their value from another asset (share, bond, commodity or even climate index) are traded. There are two main types of derivative products: options (which we will develop in Chapter 23 as they have become a key matter in financial theory and practice) and futures (Chapter 50).

Derivatives are instruments for taking positions on other instruments, or "contracts on contracts". They let you take significant short or long positions on other assets with a limited outlay of funds.

Derivative instruments are tailored especially to the management of financial risk. By using derivatives, the financial manager chooses a price – expressed as an interest rate,

an exchange rate or the price of a raw material – that is independent of the company's financing or investment term. Derivatives are also highly liquid. The financial manager can change his mind at any time at a minimal cost.

Options and futures allow one to take important risks with a reduced initial outlay due to their leverage effect (this is called speculation), or on the contrary to transfer risks to a third party (hedging).

Section 1.4

Most importantly, he is a negotiator . . .

Let's return to our financial manager who has just created a financial security. Because the security is traded on a secondary market, he doesn't know who holds the security. Nor does he know who has sold it, especially as, via the futures market, investors can sell the security without ever having bought it.

But what exactly is our financial manager selling? Or, put another way: how can the value of the financial security be determined?

From a practical standpoint, the financial manager "sells" management's reputation for integrity, its expertise, the quality of the company's assets, its overall financial health, its ability to generate a certain level of profitability over a given period and its commitment to more or less restrictive legal terms. Note that the quality of assets will be particularly important in the case of a loan tied to and often secured by specific assets, while overall financial health will dominate when financing is not tied to specific assets.

Theoretically, the financial manager sells expected future cash flows that can derive only from the company's business operations.

A company cannot distribute more cash flow to its providers of funds than its business generates. A money-losing company pays its creditors only at the expense of its shareholders. When a company with sub-par profitability pays a dividend, it jeopardises its financial health.

The financial manager's role is to transform the company's commercial and industrial business assets and commitments into financial assets and commitments.

In so doing, he spreads the expected cash flows among many different investor groups: banks, financial investors, family shareholders, individual investors, etc.

Financial investors then turn these flows into negotiable instruments traded on an open market, which values the instruments in relation to other opportunities available on the market.

Underlying the securities is the market's evaluation of the company. A company considered to be poorly managed will see investors vote with their feet. Yields on the company's securities will rise to prohibitive levels and prices on them will fall. Financial difficulties, if not already present, will soon follow. The financial manager must therefore keep the market convinced at all times of the quality of his company, because that is what backs up the securities it issues!

The different financial partners hold a portion of the value of the company. This diversity gives rise to yet another job for the financial manager: **he must adroitly steer the company through the distribution of the overall value of the company**.

Like any dealmaker, he has something to sell, but he must also:

- assess his company's overall financial situation;
- understand the motivations of the various participants;
- analyse the relative powers of the parties involved.

Section 1.5

. . . WHO NEVER FORGETS TO DO AN OCCASIONAL REALITY CHECK!

The financial investors who buy the company's securities do so not out of altruism, but because they hope to realise a certain rate of return on their investment, in the form of interest, dividends or capital gains. In other words, in return for entrusting the company with their money via their purchase of the company's securities, they require a minimum return on their investment.

The financial manager must therefore analyse proposed investment projects and explain to his colleagues that some should not be undertaken because they are not profitable enough compared to the return investors are looking for. In short, he sometimes has to be a "party-pooper". He is indirectly the spokesman of the financial investment community.

Consequently, the financial manager must make sure that over the medium term the company makes investments with returns at least equal to the rate of return expected by the company's providers of capital. If so, all is well. If not, if the company is consistently falling short of this goal, then it will destroy value, turning what was worth 100 into 90, or 80. This is corporate purgatory. On the other hand, if the profitability of its investments consistently exceeds investor demands, transforming 100 into 120 or more, then the company deserves the kudos it will get. But it should also remain humble. With technological progress and deregulation advancing apace, repeat performances are becoming more and more challenging.

If the profitability over several years of the company's operating assets is not at least equal to the return looked for by investors, then the financial manager should discuss how to improve the situation with operational people. Sometimes he will become a strategist and suggest to the top management of his company that it should review its perimeter. Underperforming units where the company has been struggling to get a return commensurate with their risks should be sold to free up resources allowing it to expand, organically or through acquisitions, the most promising or efficient divisions.

Section 1.6

. . . HE IS ALSO NOW A RISK MANAGER

Fluctuations in interest rates, currencies and the prices of raw materials are so great that financial risks are as important as industrial risks. Consider a Swiss company that buys copper in the world market, then processes it and sells it in Switzerland and abroad.

Its performance depends not only on the price of copper but also on the exchange rate of the US dollar vs. the Swiss franc, because it uses the dollar to make purchases abroad and receives payment in dollars for international sales. Lastly, interest rate fluctuations have an impact on the company's financial flows. A multi-headed dragon!

The company must manage its specific interest rate and exchange rate risks because doing nothing can also have serious consequences. As the bumper sticker says, "If you think education is expensive, try ignorance!"

Take an example of an economy with no derivative markets. A corporate treasurer anticipating a decline in long-term interest rates and whose company has long-term debt has no choice but to borrow short term, invest the proceeds long term, wait for interest