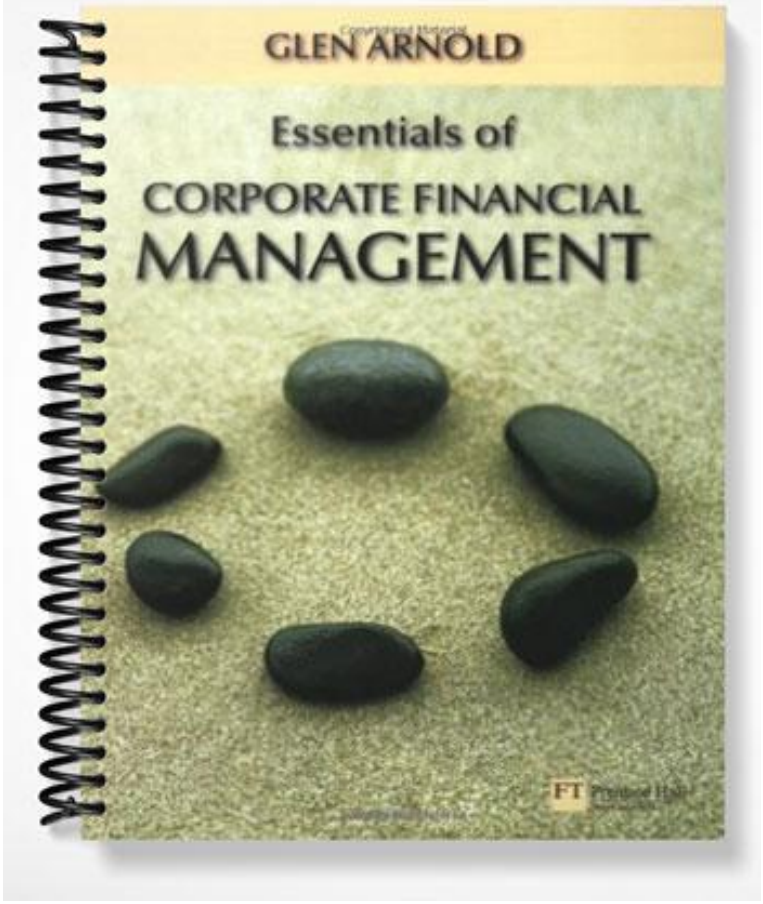
SOLUTIONS MANUAL



Instructor's Manual

Essentials of Corporate Financial Management

First edition

Glen Arnold

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Contents

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- A searchable online **Glossary.**

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- A downloadable **Lecturer's Guide** including answers to all the questions not provided in the book as well as extra additional questions.
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PREFACE

This *Guide* is designed to assist lecturers and tutors using *Essentials of Corporate Financial Management* first edition. For each chapter the following resources are available:

- The learning outcomes are outlined.
- Key points and concepts are listed.
- Solutions to selected numerical problems (those marked with an asterisk in the main book) are provided. Note that there is often more than one possible correct solution to a problem. Different answers, which nevertheless follow the logic of the argument presented in the text, may be acceptable.

Glen Arnold

LOCATION OF ANSWERS TO QUESTIONS AND PROBLEMS

(Spreadsheet answers are available for those questions marked with an asterisk below and are downloadable from the Instructor's Resource Centre at www.pearsoned.co.uk/arnold)

Chapter No	Answered in Appendix VII	Answered in *Lecturer's Guide*	Essay answer required (*see* text – no answer given)	Additional questions and answers in *Lecturer's Guide*
1			All (*see* note in Appendix VII)	
2	1*, 2*, 4	3, 5		
3	1*, 6, 10	2*, 3, 4, 5, 11*, 12	7, 8, 9,	5 included
4	3*, 4	1*, 2, 5*		3 included
5	1*, 4, 6, 8, 9	2, 3*	5, 7	4 included
6	7	5	1, 2, 3, 4, 6, 8, 9	
7	3, 7, 8, 12	1*		3 included
8		3	1*, 2	
9	4, 6, 8, 9	3, 5, 7*	1, 2	
10	2, 3	4	1	2 included
11	1, 2		2, 3, 4, 5	
12	4, 5, 7		1, 2, 3, 6	

CHAPTER 1

The financial world

LEARNING OUTCOMES

At the end of this chapter the reader will have a balanced view of the purpose and value of the finance function, at both the corporate and the national level. More specifically, the reader should be able to:

- explain the role of the financial manager;
- detail the value of financial intermediaries;
- show an appreciation of the function of the major financial institutions and markets;
- describe alternative views on the purpose of the business and show the importance to any organisation of clarity on this point;
- describe the impact of the divorce of corporate ownership from day-to-day managerial control.

Key points and concepts

- **Financial institutions and markets** encourage growth and progress by **mobilising savings** and encouraging investment.
- Financial managers contribute to firms' success primarily through **investment and finance decisions**. Their knowledge of financial markets, investment appraisal methods, cash management, value management and risk management techniques are vital for company growth and stability.
- Financial institutions encourage the flow of saving into investment by acting as **brokers** and **asset transformers**, thus alleviating the **conflict of preferences** between the **primary investors** (households) and the **ultimate borrowers** (firms).
- **Asset transformation** is the creation of an intermediate security with characteristics appealing to the primary investor to attract funds, which are then made available to the ultimate borrower in a form appropriate to them. Types of asset transformation: risk transformation; maturity transformation; volume transformation.
- Intermediaries are able to transform assets and encourage the flow of funds because of their **economies of scale** *vis-à-vis* the individual investor: (i) efficiencies in gathering information; (ii) risk spreading; (iii) transaction costs.

- The **secondary markets** in financial securities encourage investment by enabling investor liquidity (being able to sell quickly and cheaply to another investor) while providing the firm with long-term funds.

- **Banking sector:**
  - **Retail banks** – high-volume and low-value business.
  - **Wholesale banks** – low-volume and high-value business. Mostly fee based.
  - **International banks** – mostly Eurocurrency transactions.
  - **Building societies** – still primarily small deposits aggregated for mortgage lending.
  - **Finance houses** – hire purchase, leasing, factoring.

- **Long-term savings institutions:**
  - **Pension funds** – major investors in financial assets.
  - **Insurance funds** – life assurance and endowment policies provide large investment funds.

- **The risk spreaders:**
  - **Unit trusts** – genuine trusts that are open-ended investment vehicles.
  - **Investment trusts** – companies that invest in other companies' financial securities.
  - **Open-ended investment companies** (OEICs) – a hybrid between unit and investment trusts.

- **The markets:**
  - **The money markets** are short-term wholesale lending and/or borrowing markets.
  - **The bond markets** deal in long-term bond debt issued by corporations, governments, etc.
  - **The foreign exchange market** – one currency is exchanged for another.
  - **The share market** – primary and secondary trading in companies' shares takes place.
  - **The derivatives market** – Euronext. liffe dominates the 'exchange-traded' derivatives market in options and futures. There is a flourishing over-the-counter market.

- Firms should clearly define the **objective** of the enterprise to provide a focus for decision making.

- **Sound financial management** is necessary for the achievement of all **stakeholder** goals.

- Some stakeholders will have their returns **satisficed** – given just enough to make their contribution worthwhile. One (or more) group(s) will have their returns maximised.

- The assumed objective of the firm for finance is to **maximise shareholder wealth**. Reasons include: the practical necessity of a single objective leading to clearer decisions; the **contractual theory; survival** in a competitive world; it is better for **society**; counters the tendency of managers to pursue goals for their own benefit; they **own** the firm.

- **Maximising shareholder wealth is maximising purchasing power or maximising the flow** of discounted cash flow to shareholders over a long time horizon.

- **Profit maximisation** is not the same as shareholder wealth maximisation. Some things a profit comparison does not allow for: future prospects; risk; accounting problems; communication; additional capital.

- Large corporations usually have a **separation of ownership and control**. This may lead to **managerialism** where the agents (the managers) take decisions primarily with their interests in mind rather than those of the principals (the shareholders). This is a **principal–agent problem**. Solutions include: link managerial rewards to shareholder wealth improvement; sackings; selling shares and the takeover threat; corporate governance regulation; improve information flow.

There are no numerical questions in this chapter; answers may be found from reading the text.

CHAPTER 2

Project appraisal: net present value and internal rate of return

LEARNING OUTCOMES

By the end of the chapter the student should be able to demonstrate an understanding of the fundamental theoretical justifications for using discounted cash flow techniques in analysing major investment decisions, based on the concepts of the time value of money and the opportunity cost of capital. More specifically the student should be able to:

- calculate net present value and internal rate of return;
- show an appreciation of the relationship between net present value and internal rate of return;
- describe and explain at least three potential problems that can arise with internal rate of return in specific circumstances.

Key points and concepts

- **Time value of money** has three component parts each requiring compensation for a delay in the receipt of cash: (i) the pure time value, or impatience to consume, (ii) inflation, (iii) risk.
- **Opportunity cost of capital** is the yield forgone on the best available investment alternative – the risk level of the alternative being the same as for the project under consideration.
- Taking account of the time value of money and opportunity cost of capital in project appraisal leads to **discounted cash flow analysis** (DCF).
- **Net present value** (NPV) is the present value of the future cash flows after netting out the initial cash flow. Present values are achieved by discounting at the opportunity cost of capital.

$$\text{NPV} = CF_0 + \frac{CF_1}{1-k} + \frac{CF_2}{(1+k)^2} + \ldots \frac{CF_n}{(1+k)^n}$$

- **The net present value decision rules** are:

$$\text{NPV} \geq 0 \text{ accept NPV} < 0 \text{ reject}$$

- **Internal rate of return** (IRR) is the discount rate which, when applied to the cash flows of a project, results in a zero net present value. It is an 'r' which results in the following formula being true:

$$CF_0 + \frac{CF_1}{1+r} + \frac{CF_2}{(1+r)^2} + \ldots \frac{CF_n}{(1+r)^n} = 0$$

- **The internal rate of return decision rule** is:

  IRR ≥ opportunity cost of capital – accept IRR < opportunity cost of capital – reject

- IRR is poor at handling situations of unconventional cash flows. **Multiple solutions** can be the result.

- There are circumstances when IRR ranks one project higher than another, whereas NPV ranks the projects in the opposite order. This **ranking problem** becomes an important issue in situations of mutual exclusivity.

- The IRR decision rule is reversed for financing-type decisions.

- NPV measures in **absolute amounts** of money. IRR is a percentage measure.

- IRR assumes that intra-project cash flows can be invested at a rate of return equal to the IRR. This biases the IRR calculation.

ANSWERS TO SELECTED QUESTIONS

3 Confused plc

a ***Project C***

IRRs at 12.1% and 286%. See Fig. 2.1.

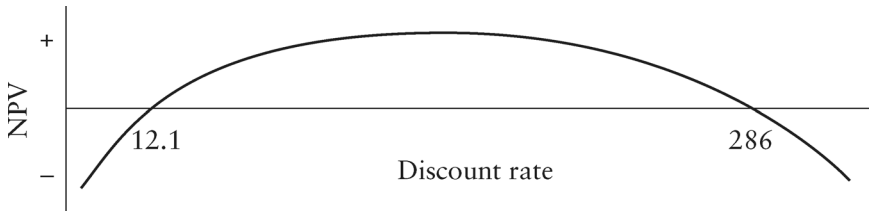

Fig. 2.1

Project D

No solution using IRR. See Fig. 2.2.

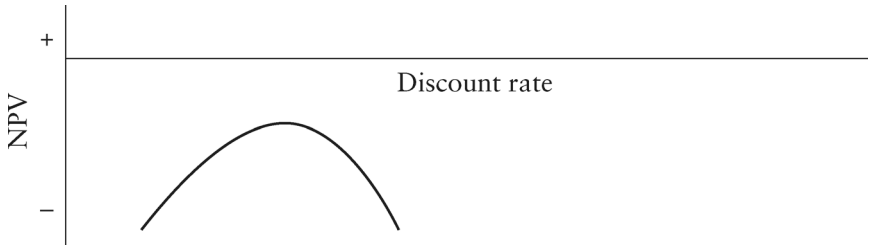

Fig. 2.2

b This problem illustrates two disadvantages of the IRR method. In the case of project C multiple solutions are possible, given the non-conventional cash flow. In the case of project D there is no solution, no IRR where NPV = 0.

c **NPV**

Project C: +£646

Project D: –£200

Using NPV the accept/reject decision is straightforward. Project C is accepted and Project D is rejected.

5 Seddet International

a ***Project A***

At 20%:

$-5{,}266 + 2{,}500 \times 2.1065 = 0$, therefore IRR = 20%

Project B

At 7%:

$-8{,}000 + 10{,}000 \times 0.8163 = +163$

At 8%:

$-8{,}000 + 10{,}000 \times 0.7938 = -62$

$$\text{IRR} = 7 + \frac{163}{163 + 62}(8 - 7) = 7.7\%$$

Project C

At 22%:

$-2{,}100 + 200 \times 0.8197 + 2{,}900 \times 0.6719 = +12.45$

At 23%:

$-2{,}100 + 200 \times 0.8130 + 2{,}900 \times 0.6610 = -20.5$

$$\text{IRR} = 22 + \frac{12.45}{12.45 + 20.5}(23 - 22) = 22.4\%$$

Project D

At 16%:

$-1{,}975 + 1{,}600 \times 0.8621 + 800 \times 0.7432 = -1$

Therefore IRR is slightly under 16%.

The IRR exceeds the hurdle rate of 16 per cent in the case of A and C. Therefore if all projects can be accepted these two should be undertaken.

b Ranking under IRR:

	IRR	
Project C	22.4%	best project
Project A	20%	
Project D	16%	
Project B	7.7%	

c ***Project A***

$-5{,}266 + 2{,}500 \times 2.2459 = 349$

Project B

$-8{,}000 + 10{,}000 \times 0.6407 = -1{,}593$

Project C

$-2{,}100 + 200 + 0.8621 + 2{,}900 \times 0.7432 = 228$

Project D

$-1{,}975 + 1{,}600 \times 0.8621 + 800 \times 0.7432 = -1$

Ranking	*NPV*	
Project A	349	best project
Project C	228	
Project D	–1	
Project B	–1,593	

Project A ranks higher than project C using NPV because it generates a larger surplus (value) over the required rate of return. NPV measures in absolute amounts of money and because project A is twice the size of project C it creates a greater NPV despite a lower IRR.

d This report should comment on the meaning of a positive or negative NPV expressed in everyday language. It should mention the time value of money and opportunity cost of capital and explain their meanings. Also the drawbacks of IRR should be discussed:

- multiple solutions;
- ranking problem – link with the contrast of a percentage-based measure and an absolute money-based measure;
- additivity not possible;
- the reinvestment assumption is flawed.